

ARTICLE 6

ACCESS AND RIGHT-OF-WAY REQUIREMENTS;
AND STREET IMPROVEMENT AND CONSTRUCTION
REQUIREMENTS

6.1 ACCESS

- 6.1.1 When land is subdivided into larger parcels that would allow further subdivision into building lots, such parcels shall be arranged and designed so as to allow for the opening of future streets and to provide access to those areas not presently served by streets. Right-of-way for such future streets shall be reserved and dedicated on the preliminary and final plats.
- 6.1.2 No subdivision shall be designed so as to completely eliminate street access to adjoining parcels of land. Proposed streets shall extend to the boundaries of the tract to be subdivided. Every development shall be designed to facilitate either pedestrian or vehicular access to adjoining properties which are developed or anticipated to be developed. Locations of interparcel access shall be as required by and subject to the approval of the Director of Planning and Development or his/her designee.
- 6.1.3 Any lot required to provide minimum frontage by the zoning district in which the lot is located shall provide vehicular access directly from a public street or public alley built to the standards in these regulations except as provided in Section 6.1.4.
- 6.1.4 Vehicular access easements may be provided from a public street indirectly via easement in any one or more of the following circumstances:
- a. The property is a buildable lot of record, as defined herein, but does not meet the minimum frontage requirement of the applicable zoning district. The property shall be served by an exclusive access easement which shall be limited to the provision of access to only one principal use or structure.
 - b. The access easement serves a single-family residence on a lot which is otherwise a buildable lot of record, and which is sharing a common driveway with no more than one other single-family residence.
 - c. The access easement was lawfully established as such under the code, ordinances, or regulations of the City of Snellville prior to the adoption of these Development Regulations.
 - d. The access easement coincides with a private roadway approved under the code, ordinances, or regulations of the City of Snellville. All new private roadways must be constructed to the roadway standards of these Development Regulations, and their ownership and maintenance responsibility by private party(s) must be clearly established on the Final Plat of the development.
 - e. The access easement serves a buildable lot of record which meets the minimum frontage requirements of the Zoning Ordinance, but at which point the access is not achieved.

6.2 STREETS

6.2.1 Dedication of Street Right-of-Way

Right-of-Way for all Public streets, existing and proposed, shall be dedicated as follows: a) existing streets or thoroughfares shall have additional right of way dedicated along their frontage; b) in accordance with the street classifications as shown on the Long-Range Road Classification Map of the Comprehensive Plan; and c) in accordance with the right-of-way widths applied to those street categories in Table 6-A.

6.2.2 Street Improvements

Streets, whether existing or new, shall be constructed or improved under those circumstances and to the standards as established in these Regulations. Street improvements shall be in accordance with the street classifications as shown on the Long-Range Road Classification Map of the Comprehensive Plan, or the Zoning Ordinance, as applicable, or as otherwise required by the City Council.

6.3 MINIMUM RIGHT-OF-WAY AND STREET IMPROVEMENTS

6.3.1 Right-of-Way and Pavement Widths

All streets shall be classified under one of the categories in Table 6-A (following page). In classifying streets, the Mayor and Council shall consider projected traffic demands after 20-years of development. Minimum widths for new construction (streets or Project Access Improvements) shall be as shown on the following Table 6-A.

TABLE 6-A MINIMUM RIGHT-OF-WAY AND ROADWAY WIDTHS FOR NEW STREETS AND PROJECT ACCESS IMPROVEMENTS			
STREET CATEGORY	DESIGN SPEED	MINIMUM RIGHT-OF-WAY (1)	MINIMUM ROADWAY (2)
<u>PRINCIPAL ARTERIAL</u> • COMMERCIAL • BOULEVARD • HIGHWAY	55 MPH	120' TO 150'	6 THROUGH LANES WITH MEDIAN
<u>MAJOR ARTERIAL</u>	35-55 MPH	100' TO 120'	67'
			4 TO 6 THROUGH LANES WITH MEDIAN
<u>MINOR ARTERIAL</u> • AVENUE • RESIDENTIAL BLVD	25-35 MPH	80' TO 100'	52' TO 66'
			4 THROUGH LANES WITH MEDIAN
<u>MAJOR COLLECTOR</u> • MAIN STREET	25-30 MPH	80'	40-50'
<u>MINOR NONRESIDENTIAL</u> CUL-DE-SAC	20-25 MPH	60' (3)	32'
		60' RADIUS	50' RADIUS
<u>MINOR RESIDENTIAL</u> URBAN ALLEY CUL-DE-SAC	25 MPH 10 MPH	50'	25'
		24'	16'
		50' RADIUS	40' RADIUS

FOOTNOTES:

(1) The greater right-of-way width shall apply under circumstances as described in Section 6.3.2 (c.)
 (2) Roadway width dimensions are back-of-curb to back-of-curb except where noted.
 (3) Utility easement shall be provided in a location and size as required by the Gwinnett County Department of Public Utilities.

6.3.2 Street Rights-of-Way

- a. The minimum width of street right-of-way shall be dedicated based upon the street categories as shown on the Long-Range Road Classification Map in the Comprehensive Plan and as contained in these Regulations.
- b. Additional street right-of-way width beyond that shown in Table 6-A (above) shall be required to be dedicated at intersections or other locations which the property abuts upon where deceleration lanes, sidewalks, turning lanes, storage lanes, medians, or realignments are required for traffic safety and minimum right-of-way standards would be inadequate to accommodate the improvements.
- c. If a new street or thoroughfare is proposed by the Comprehensive Plan, Gwinnett County, or the State of Georgia to adjoin or traverse the property, right-of-way for the proposed street or thoroughfare shall be incorporated into the subdivision

design and dedicated to the City. The Director of Planning and Development or his/her designee may conduct a review not to exceed 90-days from the date of permit application to determine the necessary location and design requirements of the City, county, or state. If, after the 90-day review, the Director of Planning and Development or his/her designee is unable to reach a decision, there shall not be any further delay of a requested permit for this situation.

6.3.3 Project Access Improvements – Single-Family Detached, Single-Family Attached, and Duplex Residential Subdivisions

- a. When property that abuts upon an existing or proposed City street is to be developed or redeveloped as a single family detached or duplex subdivision and the City street will provide access to the property, Project Access Improvements to the City street (deceleration lanes, turn lanes, etc.) shall be provided by the developer as required herein.
- b. A deceleration lane shall be required to be provided at each subdivision street entrance that is provided street access to a Minor Collector Street or Major Thoroughfare. In the event a street has an existing or proposed median, and the developer desires to construct a median break to serve the subdivision, a left turn lane leading to the median break shall be required to be provided by the developer and shall meet the standards contained herein.
- c. Deceleration lanes shall have a length of two-hundred feet (200'), with an additional fifty foot (50') taper length, a pavement width of twelve feet (12') (exclusive of curb and gutter) and shall be provided with curb and gutter. Additional right-of-way to accommodate the deceleration lane and an eleven foot (11') shoulder shall be dedicated by the developer to the City of Snellville at no cost. Associated drainage improvements as deemed necessary by the construction of the deceleration lane shall also be required.
- d. Other Project Access Improvements may be required by the Department upon the recommendation of the Director of Planning and Development or his/her designee in order to ensure adequate site access, pedestrian access, convenience and safety to the motoring public.
- e. The developer shall be responsible for the relocation of public or private utilities and drainage structures, as may be occasioned by the required Project Access Improvements.

6.3.4 Project Access Improvements - Multi-Family and Nonresidential Developments

- a. When property that abuts upon an existing or proposed City street is to be developed or redeveloped for multi-family or nonresidential uses and the City street will provide access to the property, access improvements to the City street (deceleration lanes, turn lanes, etc.) shall be provided by the developer.
- b. A deceleration lane shall be required to be provided at each project driveway or subdivision street entrance, as applicable, that is provided street access to a Minor Collector Street or Major Thoroughfare. In the event a street has an existing or

proposed median, and the developer desires to construct a median break to serve the project, a left turn lane leading to the median break shall be required to be provided by the developer and shall meet the standards contained herein.

- c. Deceleration lanes shall have a length of two-hundred feet (200'), with an additional fifty foot (50') taper length, pavement width of twelve feet (12') (exclusive of curb and gutter) and shall be provided with curb and gutter. Additional right-of-way to accommodate the deceleration lane and an eleven foot (11') shoulder shall be dedicated by the developer to the City of Snellville at no cost. Associated drainage improvements as deemed necessary by the construction of the deceleration lane shall also be required.
- d. Other Project Access Improvements may be required by the Department upon the recommendation of the Director of Planning and Development or his/her designee in order to ensure adequate site access, pedestrian access, convenience and safety to the motoring public.
- e. The Developer shall be responsible for the relocation of public or private utilities and drainage structures as may be occasioned by the required Project Access Improvements.

6.3.5 New Streets

- a. All new streets proposed to be constructed in a subdivision or other development shall be public, shall be designed and constructed at least to the standards contained in these Regulations in accordance with the category of said streets.
- b. In residential subdivisions, a dead end ("stub") street required under Section 6.4.4 to provide access to an abutting property may be exempted from construction of roadway improvements and public utilities under the following circumstances:
 - (1) No lot within the proposed subdivision will gain access from the "stub" street.
 - (2) A Concept Plan has not been submitted or approved on the neighboring tract.
 - (3) The "stub" street shall be fully designed as part of the Development Plans. However, the right-of-way shall only be cleared and rough graded in accordance with the approved plans, and all disturbed areas grassed.
 - (4) Connections for future extension of all public utilities shall be constructed as part of the subdivision. Curb returns shall be constructed as part of the subdivision. Curb returns shall be provided to the future "stub" street roadway location, and curb and gutter shall be installed across the roadway stub at the right-of-way line (extended).
 - (5) The right-of-way for the "stub" street shall be dedicated as part of the Final Plat. Slope easements or construction easements, if required by the street design, shall be shown on the Final Plat.

6.3.6 Substandard Streets

- a. In the event that a development has access to a substandard street (i.e., a dirt or

gravel road), the following Project Access Improvements shall be required:

- (1) If the abutting substandard street provides access to the development and is dirt or gravel, the street shall be upgraded by the developer to a paved roadway from the project entrance to the nearest standard paved road along the route of access.
- b. Off-site Project Access Improvements required under a. (1), above, shall at a minimum, result in a full-section roadway meeting the requirements of a Local Residential Rural roadway (twenty-four feet (24') edge to edge of pavement, with drainage swale ditches as needed). Responsibilities shall be as follows:
- (1) The Developer shall design the road and provide the labor, equipment, and materials required for roadway improvements and necessary drainage improvements.
 - (2) If the City desires the roadway to be improved to a standard greater than that for a Local Residential Rural roadway, the City shall provide or pay the cost of the additional materials and labor.
 - (3) All right-of-way required for these off-site improvements shall be acquired by the developer at no expense to the City. If the developer is unable to acquire the right-of-way, the City shall initiate acquisition proceedings, at the expense of the developer, after authorization by the City Council.

6.3.7 Improvements Along State Highways

For any development, which abuts a state highway or other right-of-way controlled by the State of Georgia, 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 Georgia Department of Transportation. A permit for the proposed access or improvements shall be required to have been approved by the Georgia D.O.T. and incorporated into the construction drawings for the project prior to issuance of a development permit by the Department.

6.4 GENERAL LAYOUT REQUIREMENTS

6.4.1 Conformance

The arrangement, character, extent, width, grade, and location of all streets shall conform at a minimum to the Comprehensive Plan and these Regulations.

6.4.2 Local Streets and Minor Arterials or Collectors

Local streets shall be so laid out that their use by through traffic will be discouraged. Minor arterials or collectors shall be provided to channel through traffic movements within a development, where appropriate to the design and a major thoroughfare is not proposed by the Comprehensive Plan. Collectors or minor arterials, in the form of boulevards or avenues, also may be provided as central routes within large residential subdivisions, where appropriate to the design, based on project traffic demands

exceeding 2000 trips per day (ADT).

6.4.3 Cul-de-sac Streets

- a. Dead end streets designed to have one end permanently closed shall provide a cul-de-sac turnaround and may be no more than one-thousand feet (1,000') in length. Additional length necessitated by topography or property configuration may be approved by the Director.
- b. 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 that is part of the connected street network. Connections of cul-de-sac streets onto other cul-de-sac streets shall be prohibited.
- c. Eyebrow cul-de-sacs (half cul-de-sacs) shall be prohibited.
- d. Cul-de-sacs shall conform to the layout and dimensional requirements as shown in the Standard Drawings.

6.4.4 Other Dead End Streets

- a. A dead end street shall be provided to the boundary of a subdivision where necessary to provide access to a land-locked abutting property, for planned continuity of future circulation, for improved access for public safety vehicles, or for the extension of public water or other utilities to neighboring lands. Such dead end streets shall be designed so as to allow their reasonable extension, and shall be located so as to be reasonably incorporated into a street design for the neighboring property. The stub street requirement may be waived by the Director of Planning and Development or his/her designee, in consultation with the Director of the Departments of Public Safety and the Gwinnett County Department of Public Utilities.
- b. Dead end streets on abutting property shall be extended into a proposed subdivision and incorporated into the street design of the development. This requirement may be modified by the Director of Planning and Development or his/her designee in cases of serious topographical hardship or dissimilar zoning which would create unacceptable land use conflicts between the two developments. This modification may be 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 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.
- c. Where a dead end street (other than a cul-de-sac) serves more than three lots, the developer shall be required to provide a temporary vehicular turnaround within the right-of-way. 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.
- d. Where a street dead ends at the property boundary and the street exceeds one-thousand feet (1,000') in length, a permanent cul-de-sac shall be required. In this

situation, right-of-way to the property boundary shall be required, but the pavement shall not be extended to the property boundary beyond the edge of the paved cul-de-sac turnaround. In no case shall a dead end street exceed two-thousand feet (2,000') in length unless approved by the Department due to unusual topographic conditions or property configuration.

6.4.5 Service Roads

Where a development borders on or contains a railroad right-of-way, or limited access highway right-of-way or major thoroughfare, 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. The service road shall be separated from the major thoroughfare by a landscaped median, as shown in the Standard Drawings.

6.4.6 Half-Streets

Half-streets (new boundary streets having one-half of the minimum required right-of-way or pavement width) shall not be allowed nor access to same be permitted should it exist.

6.4.7 Reserve Strips

Land in private ownership adjacent to public rights-of-way which could control or are intended to control access to streets, alleys, or public lands shall not be permitted unless their control is given to the City under ownership, dedication, or easement conditions approved by the City Attorney or acceptable to the Director of Planning and Development or his/her designee. No development shall be designed so as to deny access to abutting properties.

6.4.8 Alleys

Alleys may be provided where existing topography prevents feasible access to a public street on the front of the lots or where lots front a major arterial and traffic conditions make alley access safer and more desirable. In the event the Director of Planning and Development or his/her designee approves a design, which proposes alleys, the alley shall be constructed as though it were a local street pursuant to the standards contained in these Regulations.

6.4.9 Street Jogs

- a. Street jogs shall either directly align or have offsets of a minimum of one-hundred-twenty-five feet (125') for residential subdivision streets and a minimum of two-hundred feet (200') for nonresidential subdivision streets, as measured between centerlines of said streets.
- b. All major thoroughfares shall provide offsets as required by the Department, where alignment is not desirable or feasible, but in no case be spaced less than six-hundred feet (600') apart as measured between centerlines of said streets.

6.5 TRAFFIC CONTROL DEVICES

6.5.1 Traffic Control Signs

Street signs, traffic control signs, and devices such as striping, shall be provided through payment of fees to the Department for the installation thereof.

6.5.2 Street Name Signs

Street name signs shall have a green background with white legends mounted on channelized posts. Alternate post material shall be subject to the review and approval of the Director of Planning and Development or his/her designee. The posts and signs will be furnished and installed by the City at all street intersections. The developer (or homeowners association in the event an alternate signpost is chosen at a later date) shall pay the City's costs.

6.5.3 Traffic Signals and Signs

All traffic signals and signs shall conform to the Manual on Uniform Traffic Control Devices (no decorative traffic control devices will be allowed).

6.5.4 Striping Requirements

All newly constructed streets having four (4) or more lanes (including auxiliary lanes) and existing streets being widened with one or more additional lanes shall be striped or the payment of said striping costs shall be required from the Developer by the Director of Planning and Development or his/her designee prior to the Approval of Development Conformance for the project. Striping shall be accomplished with paint meeting Georgia DOT standards conforming to the Manual on Uniform Traffic Control Devices.

6.5.5 Payment of Fees

Payment for materials and installation of street name and traffic control signs in new developments shall be required by the Director of Planning and Development or his/her designee prior to the Approval of Development Conformance.

6.5.6 Street Lights

The installation of all street lighting fixtures within City right-of-way must be approved by the Department prior to such installation.

- a. Within residential subdivisions, decorative street lighting approved by the Director of the Department of Planning and Development shall be used. Payment for the light pole, fixture and installation, and one year's power shall be supplied by the developer prior to final plat approval.
- b. The following lighting standards shall be used.

(I) General Provisions

- (a) Any lighting used to illuminate parking areas, access drives or loading areas shall be of such design or level of illumination so as to minimize the amount of ambient lighting perceptible from adjacent properties and that would impair the vision of motorists.
 - (b) Exterior architectural, display and decorative lighting visible from the street shall be generated from concealed, low-level light fixtures.
 - (c) Entrances into developments from a street may be lighted for traffic safety reasons provided such lighting does not exceed the foot candle requirements for lighting walkways and streets.
 - (d) The City of Snellville Mayor and Council will have the discretion to allow limited flexibility as to variations in the minimum and average levels if the proposed levels are below the ordinance standards, depending on site and traffic conditions. The City Council will not allow flexibility for proposed levels which exceed the maximum levels, unless such levels strictly conform to the recommended levels within the IESNA Lighting Handbook, the accepted industry standards.
- (2) Non-Residential Lighting Standards.
- (a) All lighting fixtures designed or placed so as to illuminate any portion of a site shall meet the following requirements:
 - (1) Fixture (luminaries). Any lighting fixture shall be a cutoff luminary whose source is completely concealed with an opaque housing. Fixtures shall be recessed in the opaque housing. Drop Dish Refractors are prohibited. The wattage shall not exceed 420 watts/480V per light fixture. LED light sources shall have a color temperature of 4,000 Kelvin, 70 CRI, and initial lumens of 5890. Provision includes lights on mounted poles as well as architectural display and decorative lighting visible from a street or highway. Wall Pack lighting shall be cut-off down directional a maximum of 250 watts. Canopy lighting shall be cut-off luminaries with a maximum lamp wattage of 400 watts.
 - (2) Light Source (Lamp). Only Light Emitting Diodes (LED), incandescent, fluorescent, metal halide, mercury vapor, natural gas, or color corrected high-pressure sodium (CRI of 60 or better) light may be used. The same type must be used for the same or similar type of lighting on any one site.
 - (3) Mounting. Fixtures must be mounted in such a manner that the cone of the light is not directed at any property line of site. The minimum mounting height for a pole is twelve feet (12'). The maximum mounting height for a pole is twenty-five feet (25') excluding a three foot (3') base. Any fixture and pole locating within twenty feet (20') of a residential zoning shall be type four or forward throw distribution.
 - (4) Illumination Levels. All site lighting shall be designed so that the level of

illumination as measured in foot-candles (fc) at any one point meets the following standards. Minimum and maximum levels are measured at any one point. Average level is not to exceed the calculated value, and is derived using only the area of the site included to receive illumination. Points of measure shall not include the area of the building or areas, which do not lend themselves to pedestrian traffic. Also if the major portion of the lighting design is to be in the front of a building, the average level should not be affected by adding a light or two in the back of the same building, which would raise the average of the intended area for lighting.

- (5) Light shields shall be required upon the determination of the Zoning Enforcement Officer.
- (6) Future renovations, upgrades, or additions to such facilities in use prior to the effective date of this ordinance shall not exceed existing illumination levels below. The entire site must be brought into conformance with this article should a renovation, upgrade, or addition occur.

Illumination levels are as follows:

Location or Type of Lighting	Minimum Level	Average Level	Maximum Level
Area for display of Outdoor Merchandise	1.0	5.00	15.0
Commercial, Office, & Public/Semi-Public Parking Areas	0.6	2.40	10.0
Multi-Family Residential Parking Areas	0.2	1.50	10.0
Walkways and Streets	0.2	2.00	10.0
Landscape and Decorative	0.0	0.50	5.0

(b) Requirements

- (1) A site lighting plan shall be submitted at 1" = 20' scale minimum.
- (2) Site Lighting Plans shall include:
 - (a) Location and mounting information for each light;
 - (b) Illumination calculations showing light levels in foot candles at points located on a ten foot (10') center grid, including an illustration of the areas masked out per the requirements above regarding points of measurements;
 - (c) A fixture schedule listing fixture design, type of lamp, distribution and wattage of each fixture, and number of lumens after using 85% depreciation for both metal halide and high pressure sodium of initial output; (85% depreciation not applicable to recreational lighting.)
 - (d) Manufacturer's photometric data for each type of light fixture, including initial lumens and mean depreciation values; and
 - (e) An illumination summary, including the minimum average and maximum foot-candle calculations ("array values") and the total

number of array points (points used on the ten foot (10') grid calculations).

- (f) Copies of all nema (fixture distribution) types with photometric reports in the form of independent testing laboratory submittals. Note: No isocandela curve reports will be accepted.
- (g) Photometric calculations shall be initial and maintained with aiming diagrams and mounting heights.

(3) Public or Private Outdoor Recreational Lighting

(a) Light Level on the Playing Field-Quantity of Illumination.

The illumination level must satisfy the requirements of the players, as well as the spectators. The recreational facility shall be designed such that the maintained lighting level does not exceed the IESNA recommendations by more than fifteen percent (15%), as approved by the Planning Director or designee, for the specific sport and the level of play at the facility.

(b) Uniformity Ratio

The uniformity ratio shall be in conformance with IESNA recommendations, for the specific type of field to be illuminated.

(c) Spill & Glare Control

(1) Spill Control – Illumination levels beyond the property line of the recreational facility, attributable to the recreational facility lighting system, shall not exceed the values (given in Table 1) on an adjacent residential property line or one-hundred-fifty feet (150'), whichever is closer. Maximum values are given for both initial horizontal foot-candles and initial vertical foot-candles. Horizontal readings shall be measured at thirty-six inches (36") above grade. Vertical foot-candles readings shall be measured at thirty-six (36") above grade with the meter aimed, in succession, at each light bank and the maximum foot-candle reading recorded.

(2) Glare Control – The luminaries shall be installed to operate, such that the candela value from an individual fixture does not exceed 12,000 candela at the angle above nadir shown in the table below. Different angles are used to more closely reflect the spill and glare concerns for the different environmental zones found throughout the City of Snellville. For further clarification, the value of 12,000 candela is used, as it closely approximates the intensity of light coming from a low beam headlight.

Environmental Zones (as defined in IESNA RP-33-99)

E1 – Areas with intrinsically dark landscapes, such as national parks, areas of outstanding natural beauty, etc.

E2 – Areas of low ambient brightness, including sensitive residential areas.

E3 – Areas of medium ambient brightness, generally being urban residential areas.

E4 – Areas of high ambient brightness, which would include dense urban areas with mixed residential and commercial use with high level of nighttime activity.

Light Trespass Limitations for Sports Lighting			
Environmental Zone	Pre-curfew Limitations	Post-Curfew Limitations	Degrees above nadir not to exceed 12,000 candela from a single fixture
E1	Not allowed	0.00 Max Vertical	Not allowed
E2	0.25 Max Horizontal 1.0 Max Vertical	0.10 Max Vertical	82 degrees
E3	0.5 Max Horizontal 2.0 Max Vertical	0.30 Max Vertical	85 degrees
E4	0.75 Max Horizontal 3.0 Max Vertical	0.60 Max Vertical	88 degrees

(d) Continuation of Nonconforming Sports Lighting

The lawful use of existing lighted outdoor recreational facilities may be continued. Future renovations or upgrades to such facilities in use prior to the effective date of this Ordinance shall not exceed existing illumination levels beyond the perimeter of the recreational facility.

6.6 SPECIFICATIONS

6.6.1 Unless otherwise specifically set forth herein, all of the materials, methods of construction, and workmanship for the work covered in reference to street construction shall conform to the latest specifications of the Georgia Department of Transportation (Georgia DOT).

6.7 SUBGRADE PREPARATION FOR ALL STREETS

6.7.1 Subgrade preparation shall be in accordance with Georgia DOT specifications and these Regulations.

6.7.2 If any sections of the subgrade are composed of topsoil, organic, or other unsuitable or unstable material, such material shall be removed and replaced with suitable material and then thoroughly compacted as specified for fill or stabilized with stone or a geo-textile or geo-grid.

6.7.3 Fill shall be placed in uniform, horizontal layers not more than eight inches (8") thick (loose measurement). Moisture content shall be adjusted as necessary to compact material to ninety-five percent (95%) of maximum dry density except for the top twelve inches (12") which shall be compacted to one-hundred percent (100%) of maximum dry density.

6.7.4 After the earthwork has been completed, all storm drainage, water, and sanitary sewer utilities have been installed within the right-of-way as appropriate, and the backfill in all such ditches thoroughly compacted, the subgrade shall be brought to the lines, grades, and typical roadway section shown on the plans.

6.7.5 Utility trenches cut in the subgrade shall be backfilled as specified herein. Compaction tests at

the rate of one per one-hundred-fifty feet (150') of trench shall be provided to verify compaction.

- 6.7.6 The subgrade must pass roll testing prior to placement of the base material. With the approval of the Department, a geo-textile or grid may be used to stabilize a subgrade that does not pass proofrolling.
- 6.7.7 When the street is to be used for construction traffic before the paving work is completed, a layer of stone (except crusher run) shall be laid as a traffic surface. This material shall not be used as a part of the base material. It may be worked into the subgrade, or it shall be removed before the base course is set up for paving.
- 6.7.8 Provisions shall be made to drain low points in the road construction when the final paving is delayed. A break in the berm section is required when the curbing has not been constructed. After installation, drainage under the curb to side slopes is required, using minimum 4 inch diameter pipe sections.

6.8 PROJECT ACCESS IMPROVEMENT STANDARDS

- 6.8.1 For sections four-feet (4') or greater in width, the section shall comply with the construction standards for new streets, in accordance with the street's category as shown on the Comprehensive Plan. The base course must pass roll testing prior to paving. If a delay in paving is reasonably expected by the Developer or the Department, the base shall be primed with 0.25 gallon of R.C. 70 per square yard and cured for seven (7) days before paving.
- 6.8.2 For sections less than four-feet (4') wide, seven-inches (7") of Class "A" concrete base (five-inches (5") on local and minor collector streets) and one- and one-half inches (1½") of "E" or "F" topping shall be required.

6.9 NEW LOCAL AND MINOR COLLECTOR STREETS

- 6.9.1 Local and Minor Collector Streets Within a Residential Subdivision.

a. Asphalt Streets:

The following types of base materials may be used:

(1) Crushed Stone Base

(a) Two-Pass Street:

The base course shall consist of at least five-inches (5") of graded aggregate base. After being thoroughly compacted and brought to proper section two-inches (2") of "B" binder shall be applied. If a delay in paving is reasonably expected by the Developer or the Department, the base shall be primed with 0.25 gallon of R.C. 70 per square yard the same day it is compacted, and cured for seven-days (7) prior to paving. The final one-inch (1") of type "E" or "F" wearing course shall be applied after ninety-percent (90%) of the houses on the street have been built, or prior to the end of the maintenance period (but after the eleventh (11th) month),

whichever occurs first. Prior to applying wearing course, a tack coat shall be applied to the binder course at a rate of no less than 0.05 gallons per square yard. Type of tack shall be approved by the Department prior to placement.

(b) One-Pass Street:

The base course shall consist of at least six-inches (6") of graded aggregate base. After being thoroughly compacted and brought to proper section, the final two-inches (2") of type "E" or "F" wearing course shall be applied. If a delay in paving is reasonably expected by the Developer or the Department, the base shall be primed with 0.25 gallon of R.C. 70 per square yard the same day it is compacted, and cured for seven-days (7) prior to paving.

(2) Soil Cement Base

(a) If the base material (resident soil) is unsatisfactory to the Director of Planning and Development or his/her designee then a soil cement mix design with engineer test results acceptable to the Director of Planning and Development or his/her designee must be submitted. The design must come from a geo-technical firm with the results certified by a Professional Engineer registered in the State of Georgia. The tests required for the design are ASTM D558 or AASHTO T134 or ASTM D559 and/or 560 or AASHTO T135 and 136.

(b) The minimum base course shall consist of at least six-inches (6") of suitable soil (high mica content not suitable) stabilized with ten-percent (10%) of Portland Cement by volume (approximately 42.3 pounds per sq. yd.). Depending on whether the street is to be constructed as a one-pass or two-pass street, please refer to Section 6.9.1, a (1)(a) or Section 6.9.1, a (1)(b) for the applicable binder and/or paving standards. Where the grade of the street is five-percent (5%) or greater, a single surface treatment course must be applied before the binder.

b. Concrete Streets:

Five-inches (5") of 3,500 psi concrete is to be applied on a stabilized subgrade, consisting of at least one-hundred-fifty (150) pounds of stone per square yard mixed in four-inches (4") deep and compacted. The design and construction of the street shall comply with the Portland Cement Association standards.

6.9.2 Nonresidential Subdivision or Development Streets

The following standards shall apply to new local and minor collector streets in nonresidential subdivision and other nonresidential projects.

a. Asphalt Streets:

The following types of base materials may be used:

(1) Two-Pass Street (Crushed Stone Base):

The base course shall consist of at least seven-inches (7") of graded aggregate base. After being thoroughly compacted and brought to

proper section two-inches (2") of "B" binder shall be applied. If a delay in paving is reasonably expected by the Developer or the Department, the base shall be primed with 0.25 gallon of R.C. 70 per square yard the same day it is compacted, and cured for seven-days (7) prior to paving. The final one-inch (1") of type "E" or "F" wearing course shall be applied after ninety-percent (90%) of the buildings on the street have been built, or prior to the end of the maintenance period (but after the eleventh (11th) month), whichever occurs first. Prior to applying wearing course, a tack coat shall be applied to the binder course at a rate of no less than 0.05 gallons per square yard. Type of tack shall be approved by the Department prior to placement.

(2) One-Pass Street (Crushed Stone Base):

The base course shall consist of at least eight-inches (8") of graded aggregate base. After being thoroughly compacted and brought to proper section, the final two-inches (2") of type "E" or "F" wearing course shall be applied. If a delay in paving is reasonably expected by the Developer or the Department, the base shall be primed with 0.25 gallon of R.C. 70 per square yard the same day it is compacted, and cured of seven-days (7) prior to paving.

b. Concrete Streets:

Seven-inches (7") of Class "A" 3,500 psi concrete is to be applied on a stabilized subgrade, consisting of at least one-hundred-fifty (150) pounds of stone per square yard mixed in four-inches (4") deep and compacted. The design and construction of the street shall comply with the Portland Cement Association standards.

6.10 NEW MAJOR THOROUGHFARES

6.10.1 Minor collectors shall be constructed in accordance with designs prepared by the City, Gwinnett County or Georgia DOT, or, if no design has been prepared, to the following standards as indicated by Table 6-B:

<u>STREET CATEGORY</u>	<u>BASE</u>	<u>BINDER</u>	<u>TOPPING</u>
Principal Arterial	10" GAB	5" *	1½" E or F
Major Arterial	10" GAB	4" B	1½" E or F
Minor Arterial	10" GAB	3" B	1½" E or F
Major Collector	10" GAB	3" B	1½" E or F
Minor Collector	8" GAB	2" B	1½" E or F

* 2 ½" type "B" binder and 2 ½" asphaltic concrete base

6.11 CURB AND GUTTER

6.11.1 All new streets, Project Access Improvements and non-single family residential parking lots shall be provided with curb and gutter. All gutters shall drain smoothly with no areas of ponding.

6.11.2 Residential Curbing

Residential curbing shall meet the following requirements:

- a. Concrete shall be Class "A" (as defined by Georgia D.O.T.) and have a minimum strength of 3,000 PSI at 28 days.
- b. Typical minimum section shall be 6" x 24" X 12".
- c. Vertical curbing only.

6.11.3 Industrial or Commercial Curbing

Industrial or commercial curbing shall meet the following requirements:

- a. Concrete shall be Class "A" (as defined by Georgia D.O.T.) and have a minimum strength of 3,000 PSI at 28 days.
- b. Typical minimum section shall be 8" X 24" X 14".
- c. Vertical curbing only.

6.11.4 Principal Arterial and Major Arterial Curbing

Principal Arterial and Major Arterial curbing shall meet the following requirements:

- a. Concrete shall be Class "A" (as defined by Georgia D.O.T.) and have a minimum strength of 3,000 PSI at 28 days.
- b. Typical minimum section shall be 8" X 30" X 14".
- c. Vertical curbing only.

6.11.5 Construction Methods:

- a. Curb and gutter shall be set true to line and grade, horizontal be field staked, and finished to the section shown on the plans. Along the Project Access Improvements of a road which the City Maintenance Department has identified for resurfacing within one-year (1) of the new construction, the grade of the new gutter shall be placed one-inch (1") above the Project Access Improvement pavement grade in areas where drainage will not be adversely affected.
- b. Line and grade shall be set by developer's engineer or surveyor on grades less than

2% and over 12%, and within one-hundred-feet (100') in both directions from all low points.

- c. One-half inch (1/2") expansion joints or pre-molded bituminous expansion joint material shall be provided at all structures and radius points and at intervals not to exceed two-hundred-fifty feet (250') in the remainder of the curb and gutter.
- d. Inferior workmanship or unprofessional construction methods resulting in unacceptable curb and gutter will be cause for rejection of the finished work.
- e. Disturbed areas along all curbing shall be backfilled, stabilized, and grassed.

6.12 UNDERGROUND UTILITIES

- 6.12.1 All water and sanitary sewer utilities and storm drain facilities within the curbs shall be installed and the ditches backfilled and thoroughly compacted before any pavement or base is installed.
- 6.12.2 Once the base has been placed, all further installation of utilities under the roadway shall be bored or other wise comply with Section 7.5, Street Cuts.
- 6.12.3 All utility manholes and valve boxes shall be brought flush to the finished grade within the roadway section.
- 6.12.4 All utility locations shall adhere to the details found in the Standard Drawings.

6.13 SIDEWALKS

6.13.1 Required

- a. Sidewalks shall be provided as required by the Zoning Ordinance or as a condition of zoning or special use approval and shall meet the design and location standards required herein.
- b. Sidewalks provided voluntarily by a builder or developer shall meet the design and location standards required herein. The builder or developer shall secure authorization from the Department prior to installation.

6.13.2 Location Standards

- a. The construction of sidewalks along all the right-of-way within subdivisions and all commercial developments is required. Within residential and commercial subdivisions, sidewalks shall be constructed on both sides of public right-of-way. Concrete curb and gutter is required for all roads where sidewalks are to be installed.

6.13.3 Design Standards

Sidewalks shall be constructed in accordance with the Design Standards contained in

this Subsection unless a Modification is granted by the Director.

- a. Within a residential subdivision, the minimum width of a sidewalk shall be four-feet (4') and a grassed/landscape strip of not less than thirty-inches (30") shall separate the sidewalk from the adjacent back of curb. The exterior of subdivisions which abut a right-of-way of sixty-feet (60') or greater shall construct sidewalks according to 6.13.3(b).
- b. When associated with a commercial development, the minimum width of the sidewalk shall be six-feet (6') and a grassed/landscape strip of not less than forty-eight inches (48") shall separate the sidewalk from the adjacent back of curb.
- c. Sidewalks shall be constructed of concrete and shall be a minimum of four-inches (4") thick. The concrete shall be Class "B" (as defined by Georgia DOT) and have a strength of 2,200 PSI at 28-days.
- d. All new sidewalks shall match and provide a smooth transition to any existing sidewalks with no steps. Curb ramps shall be provided at all curb termini.
- e. Expansion joints shall be provided at all property lines (extended) and driveway crossings. Control joints shall be provided every ten-feet (10').
- f. Disturbed areas resulting from sidewalk construction shall be backfilled, stabilized, and grassed.
- g. Sidewalks located in the right-of-way of roads under the jurisdiction of the Georgia Department of Transportation shall be constructed in compliance with Georgia Department of Transportation design standard 903IW.
- h. All sidewalks shall continue across any intervening driveway including any control or expansion joints. Hatched or stamped pattern concrete sidewalk shall be used in the event the driveway apron consists of concrete.

6.13.4 Installation Deadlines

Sidewalks shall be installed prior to the issuance of a Certificate of Occupancy or Final Plat approval in accordance with this Subsection unless a performance bond is posted. The cost of sidewalk installation may be set aside in escrow where proposed road improvements may impact the location of the sidewalk.

- a. Sidewalks required on residential building lots shall be installed prior to issuance of a Certificate of Occupancy for each individual dwelling.
- b. Sidewalks required on recreation areas, open space and retention/detention ponds shall be installed prior to Final Plat approval.
- c. Sidewalks required on other projects shall be installed prior to issuance of a Certificate of Occupancy or Certificate of Completion, as appropriate.