ARTICLE III

GENERAL REQUIREMENTS AND MINIMUM STANDARDS OF DESIGN

A. STREETS

1. Relation to Adjoining Street System

The arrangement of streets in subdivisions shall provide for the continuation of existing streets in adjoining subdivisions (or their proper projection when adjoining property is not subdivided) wherever possible or necessary to ensure proper circulation. The width of the new or continuing street shall be the same or greater than the existing street, but in no case shall be less than the minimum width required.

2. Design

The design of the street system shall conform to requirements construed in the "City of Memphis Standards & Specifications" (Addendum to the Lakeland Subdivision Regulations). (Res. 5-89)

3. Street Elevation

No street shall be approved that is subject to periodic inundation. Fill may be used for streets provided that such fill does not unduly increase flood heights. Drainage openings shall be so designed as to not restrict the flow of water and unduly increase flood heights.

4. Street Classifications

Proposed streets within subdivisions shall be classified in one of the following categories, as shown on the Major Road Plan:

a. *Arterial Street or Highway*: A street to be used primarily for fast or heavy traffic.

b. *Collector Street, Major or Minor*: A street that carries traffic from local streets to arterial roadways or highways and includes the principal entrance street(s) of a subdivision and the streets for primary circulation within a subdivision.

c. *Local Street*: A street that is used primarily for access to the abutting residential properties and not intended for use by through traffic.

d. *Marginal Access Street*: A minor street that is parallel to and adjacent to an arterial street or highway and that provides access to abutting properties and protection from through traffic.

e. *Cul-de-sac*: A short, local street having an outlet at one end and having the other end designed with a circular turnaround that is not intended to be extended in the future. Cul-de-sacs are not to exceed six hundred (600) feet in length or have more than fifteen (15) dwelling units.

f. *Dead-end Street*: A street that temporarily has only one outlet for vehicular traffic, with one end terminating at the edge of undeveloped property, with the intent to extend the street at some point in the future.

g. *Loop Street*: A street that is open at both ends and connects to only one residential street with a maximum length of twelve hundred (1200) feet or twenty-five (25) dwelling units.

5. Street Widths

a. The minimum width of right-of-way, measured from lot line to lot line, shall be as shown on the Major Road Plan, or if not shown on such plan, shall be not less than as follows:

(1)	Arterial Streets/Highways:	80'- 114' as may be required
(2)	Collector Streets:	60'-68' as may be required
(3)	Minor Residential Streets:	50 feet
(4)	Marginal Access Streets:	50 feet
(5)	Cul-de-sacs:	50 feet
(6)	Dead-end Streets:	50 feet
(7)	Loop Streets:	50 feet

b. In cases where topography or other physical conditions make a street of the required minimum width impracticable or undesirable, the Planning Commission may modify the above requirements.

6. Additional Width on Existing Streets and Site Distance Improvements

Subdivisions that adjoin existing streets shall dedicate additional right-of-way and/or add additional pavement to streets where the required minimums are not

met. The Planning Commission may require that the developer adjust existing roads to meet sight distance requirements. (Res.4-89)

a. The entire right-of-way shall be provided if any part of the subdivision is on both sides of the existing street.

b. When the subdivision is located on only one side of an existing street, one half (1/2) of the required right-of-way measured from the centerline of the existing roadway shall be provided.

c. Where subdivision development requires an existing street to be cut down for proper sight distance and the subdivision is on both sides of the street, the developer may be required to improve both sides of the street. (Res.4-89)

d. Where subdivision development requires an existing street be cut down for proper sight distance and the subdivision is on one side of the street, the developer may be required to improve that side of the street. (Res.4-89)

e. Where a subdivision development adjoins an existing street which doesn't meet the minimum pavement width requirements, the developer shall construct the additional paving for both sides of the street if the subdivision is on both sides and half of the additional paving when the subdivision is on one side of the street. (Res.4-89)

7. Restriction of Access

When a tract fronts on an arterial street or highway, the Planning Commission may require such lots to be provided with frontage on a marginal access street.

8. Street Grades

Grades on arterial streets shall not exceed seven (7) percent. Grades on other streets may exceed seven (7) percent but not ten (10) percent.

9. Horizontal Curves

When a deflection angle of more than ten (10) degrees in the alignment of a street occurs, a curve or reasonably long radius shall be introduced. On streets sixty (60) feet or more in width, the centerline radius of curvature shall be not less than three hundred (300) feet. On other streets it shall not be less than one hundred (100) feet.

10. Vertical Curves

Every change in grade shall be connected by a vertical curve constructed so as to afford a minimum sight distance of two hundred (200) feet. The sight distance shall be measured from the driver's eyes, which are assumed to be four and one-half (4 1/2) feet above the pavement surface, to an object four (4) inches high on the pavement. The Planning Commission may require profiles of all streets showing natural and finished grades, drawn to a scale of not less than one (1) inch equals twenty (20) feet vertical.

11. Intersections

a. The angle of intersection between minor and major streets will not vary more than ten (10) degrees from a right angle. All other streets shall intersect each other as near a right angle as possible, but in no case less than seventy-five (75) degrees.

b. Property line radii at all street intersections shall not be less than twenty-five (25) feet unless approved by the Planning Commission.

12. Tangents

A tangent of at least one hundred (100) feet in length shall be introduced between reverse curves and arterial and collector streets.

13. Street Jogs

Street jogs with centerline offsets of less than one hundred twenty-five (125) feet shall not be allowed.

14. Cul-de-sacs

Cul-de-sacs or courts designated to have one end permanently closed shall not be more than six hundred (600) feet long unless a greater length is necessitated by topography. In this case, the Planning Commission may require an increased pavement width and right-of-way. The closed end of the cul-de-sac shall have a turnaround with an outside roadway diameter of at least eighty (80) feet and a street right-of-way diameter of at least one hundred (100) feet.

15. Dead-end streets

a. The Planning Commission may approve an alternative design for dead end streets, such as the “T” background. In this case the pavement shall be at least sixty (60) feet across the “T” and twenty (20) feet wide and have a right-of-way of at least eighty (80) feet across the “T” and at least forty (40) feet in width.

b. Where, in the opinion of the Planning Commission, it is desirable to provide for street access to adjoining property, proposed streets shall be extended by dedication to the boundary of such property. Such dead-end streets shall be provided with a temporary turnaround having a roadway diameter equal to the width of the right-of-way.

16. Private Streets and Reserve Strips

a. There shall be public or private streets platted in every subdivision. Every lot within the subdivision shall abut a public or private street, as approved by the Planning Commission.

b. There shall be no reserve strips controlling access to streets, except where the control of such strips is definably placed with the local government under conditions approved by the Planning Commission.

17. Street Names

Proposed streets that are obviously in alignment with others already existing and named shall bear the names of the existing streets. The name of a proposed street shall not duplicate the name of an existing street unless it is clearly a continuation of that street.

18. Drainage

All streets and roads must be designed to provide for the discharge of surface water from the right-of-way of all streets and roads by grading and drainage as shall be approved by the Planning Commission. Where it is the opinion of the Planning Commission that water cannot be adequately discharged by surface drainage, the Planning Commission may require the installation of a storm sewer system. The post-development rate of runoff from subdivided property shall not exceed pre-development levels.

B. PRIVATELY OWNED STREETS

The provisions of this section apply to individual lots with access to a privately owned street and with no direct access to a public street. Privately owned streets may also be within apartment complexes, shopping centers, and other developments which provide internal circulation for one parcel.

1 . General Provisions

Privately owned streets may be permitted where the subdivider or developer demonstrates that private ownership, control and maintenance of street facilities is integral to the design and function of the subdivision or development, that provisions have been made for the continuing and adequate maintenance of such

drives or that the private streets in the development shall not interrupt or jeopardize the continuous circulation of vehicular traffic in the general area.

2. General Design Criteria

Privately owned streets shall conform to the standards and criteria as set forth in Article III and Article IV of these regulations, and:

a. Shall provide adequate access to all lots or principal structures and facilities within the development;

b. Shall be of sufficient width to accommodate fire, other emergency vehicles, and sanitation equipment: and,

c. Shall be separated from the public street system to discourage vehicular traffic from public streets.

3. Geometric Design Standards

Geometric Design Standards shall conform to the standards and criteria as set forth in Article III and Article IV of these regulations.

4. Pavement Width

The pavement width shall conform to the standards and criteria as set forth in Article III and Article IV of these regulations.

5. Dead-end Streets

The length of dead-end streets shall conform to the standards and criteria as set forth in Article III and Article IV of these regulations.

6. Intersections

Privately owned streets should not provide a direct connection between two public streets. Where the projection or connection of a public street into a privately owned street is unavoidable, the private street shall be designed to clearly distinguish between the public streets and the privately owned street by means of curbing, turnarounds, signing, and/or other measures deemed necessary by the Planning Commission.

7. Multiple Access Points to Public Streets

Projects containing privately owned streets shall conform to the access and driveway standards as established by the City of Lakeland.

8. Construction Requirements

Privately owned streets shall be constructed to equal or exceed the base materials, compaction, and final surfacing standards as set forth in Article III and Article IV of these regulations. If the City of Lakeland waives curb, gutter, and sidewalk requirements, drainage swales adjacent to the roadway shall be required.

9. Maintenance

Before Final Plats for developments containing privately owned streets are approved, the subdivider shall provide copies of the property owners' association document that clearly delineates the responsibilities for common use and maintenance of the private streets and other improvements. The property owners' association document shall be approved by the City of Lakeland, recorded simultaneously with the Final Plat and have the instrument number noted on the Final Plat.

10. Easement Dedication

If the public utilities are placed within or adjacent to privately owned streets, a ten (10) foot utility easement is required.

C. DRIVEWAYS AND CURB CUTS

These standards shall apply to all multi-family, office, commercial and industrial driveways and curb cuts within the corporate limits of the City of Lakeland, and/or on all streets designated as major thoroughfare, commercial collector or commercial access.

These standards are in addition to, and generally consistent with the Rules and Regulations for Constructing Driveways on State Highway right-of-way as issued by the Tennessee Department of Transportation (TDOT), provided however, these rules established by this section shall apply to State, County, and local roads located within the corporate limits of Lakeland.

1. Driveways shall be so located that vehicles entering or leaving an establishment or location shall not interfere with the free movement of traffic or create a hazard on the public roadway. Where feasible, access driveways shall be located where there are no sharp curves or steep grades, and where sight distance is adequate for safe traffic operation. Driveways should not be located within an intersection, intersection radius, or interchanges of highways. No curb cut shall be closer than twenty (20) feet from the point of curvature of a corner radius.

2. Access drives shall be located so that they shall not interfere with the placement of signs, signals or other devices that affect traffic operation and regulations.

3. For property tracts with a sizable frontage on a highway or street, driveway location and arrangement shall be governed by position of building(s) thereon as determined through the site plan review process of the City of Lakeland. Where driveways are provided to land areas only, (areas with no development), they shall be so located to the best advantage regarding highway alignment profile and site distance conditions as determined by the applicant and the City of Lakeland jointly. The allowed number, arrangement, width and design of driveways shall be governed during the site plan review process, such process to consider the amount of highway frontage and the use of the facility/property.

4. The number of driveways permitted shall be the minimum number necessary to properly serve the needs of the property. Frontages of one hundred (100) feet or less shall be limited to one driveway, unless the Board of Zoning Appeals approves a variance. Normally, not more than two driveways shall be provided to any single property tract or business establishment within the City of Lakeland. Furthermore, there shall not be more than four driveways per any five hundred (500) foot distance. *The City specifically encourages shared driveways and curb cuts to facilitate traffic flow.*

5. Consistent with State guidelines, driveways shall be positioned to clear the frontage boundary lines by the specified minimum dimensions. Where two driveways are provided for one frontage or adjacent frontages separately, the clear distance between driveways measured along the right-of-way line shall not be less than twenty-five (25) feet.

6. On a major, controlled access road, where there are or may be several businesses, consideration should be given to the construction of a frontage road, the frontage road then having well-spaced access points to the major road.

7. Driveway design, consistent with State regulation, shall not exceed 40 feet maximum width for two-way use, or twenty (20) feet maximum for one-way use.

8. The City of Lakeland and the State of Tennessee DOT specifically reserve through the site plan review process before the Planning Commission, full review, comment and approval authority for curb cuts.

D. BLOCKS

1. Length

Blocks shall not be less than four hundred (400) feet nor more than twelve hundred (1200) feet in length except as the Planning Commission considers necessary to secure efficient use of land or desired features of street pattern. In blocks over eight hundred (800) feet in length the Planning Commission may require one (1) or more public cross walks of not less than ten (10) feet in width to extend entirely across the block and at other locations deemed necessary.

2. Width

Blocks shall be wide enough to allow two (2) rows of lots, except where reverse frontage on a major street is provided or where prevented by topographical conditions or size of the property; in which case the Planning Commission may approve a single row of lots.

E. LOTS

1. Adequate Building Sites

a. Each lot shall contain a building site not subject to flooding, as defined in Section G of this Article, and outside the limits of any existing easement or building setback lines as required by these regulations and the Zoning Ordinance.

b. Corner lots shall have sufficient width to accommodate the required front yard setback from both streets and provide a comparable building area to the interior lots in the same area of the subdivision.

c. Individual lot grading after a grading plan for the subdivision has been approved and implemented shall not be allowed unless approved by the City Engineer.

2. Arrangement

a. Wherever possible, side lot lines shall be at right angles to straight street lines or radii to curved street lines.

b. All subdivisions shall be surveyed and laid out in such a manner that each and every lot intended for sale shall face a public or private thoroughfare. Flag lots shall be discouraged.

c. Residential lots with individual direct access onto an arterial street shall be discouraged. In instances where such access is permitted, each lot shall have sufficient depth to accommodate a driveway that provides for vehicular egress from the driveway to the arterial street in forward motion.

3. Size

a. The minimum size and width of lots shall be in accordance with the zoning district in which they are located.

b. The square footage of residential lots not served by a public sewerage system shall comply with local health regulations to govern subsurface sewage disposal systems. Greater area may be required for private sewage disposal if, in the opinion of the county health officer, there are factors of drainage, soil conditions or other conditions to cause potential health problems. The Planning Commission may require that data from percolation tests be submitted as a basis for approval or disapproval of a subdivision that is dependent upon septic tanks as a means of sewage disposal.

c. The minimum size of residential lots to be served by a private source of water supply shall be determined by the county health officer after investigations of soil conditions, proposed sewerage system and depth of ground water. In no case shall lots served by a private water supply and private sewage disposal system be less than the area required in the local health regulations to govern subsurface sewage disposal systems.

d. The size of properties reserved or laid out for commercial or industrial properties shall be adequate to provide for the off-street service and parking facilities required by the type of use and development contemplated. Minimum requirements for these facilities shall be as authorized in the Zoning Ordinance. Platting of individual lots should be avoided in favor of an overall design of the land to be used for such purposes. Shared access or cross-circulation between commercial or industrial lots shall be encouraged.

4. Building Setback Lines

a. Building setback lines for lots shall be in accordance with the requirements of the zoning district in which they are located.

b. In case electric and natural gas easements are required, subdivisions will conform to the regulations of the Memphis Light, Gas and Water Division.

5. Sewer Tap Procedures (added by Res.2-91)

a. Sewer tap procedures to be followed by plumbers /installers in connecting sanitary sewer lines from any and all buildings to sanitary sewer lines within the corporate limits of the City of Lakeland, Tennessee shall be as follows:

(1) Notify the Public Works Director or City Engineer twenty-four (24) hours prior to any connection being made.

(2) Uncover the service line to the lot in the presence of an authorized City representative or as directed by the Public Works Director or City Engineer.

(3) Make a tie-in to the service line only with an authorized City representative present. Back fill only when instructed to do so by the City representative.

(4) The line will be tested immediately by the introduction of water, which will be monitored by an authorized City representative to determine the suitability of the connection. Dye or color may be required if the line is active.

b. A Certificate of Acceptability will be given prior to allowing the normal use of lines. The City of Lakeland will issue the Certificate prior to allowing occupancy.

F. PUBLIC AREAS AND SERVICES

Due consideration shall be given to the size and location of areas intended for playgrounds and parks for local or neighborhood use or for use as public service areas.

1. Public Open Space

Dedication of open space and/or payment of parkland fees shall be governed by the requirements of Section O of this Article.

2. Utilities

a. All utility facilities shall be located underground throughout subdivisions in all of the residential districts with the exception of the AG Agriculture District. Whenever existing utility facilities are existing above ground, except where they exist on established public right-of-way, the developer shall remove those facilities and place them underground. (Res. 1-92)

b. The Planning Commission shall require easements, at least five (5) feet in width for poles, wires, conduits, storm and sanitary sewers, gas, and water mains or other utility lines along all rear and side lot lines. If, because of lot arrangements or topographical conditions, easements are necessary along side lot lines, the Planning Commission shall require such easements. Sewer and drainage easements, where required shall be a minimum of ten (10) feet.

c. Sewer easements along natural drainage courses shall be designated wherever possible to allow for the future development of gravity sewer.

G. SUITABILITY OF LAND

a. The Planning Commission shall not approve the subdivision of land if, from adequate investigations conducted by all public agencies concerned, it has been determined that in the best interest of the public, the site is not suitable for platting and development purposes of the kind proposed.

b. Land subject to flooding and land deemed to be topographically unsuitable shall not be platted for residential occupancy, or for any other uses that may aggravate erosion or may increase the danger to health, life or property.

c. Land determined to be unsuitable for development may be set aside for such uses as shall not be endangered by periodic or occasional inundation or shall not produce unsatisfactory living conditions.

H. DIVISION INTO LARGE PARCELS

When land is subdivided into parcels five (5) acres in size or larger, such parcels shall be arranged so as to allow for the opening of streets and for logical re-subdivision in the future.

I. VARIANCES

1. The Planning Commission under the following conditions may grant variances to these regulations:

   a. Where the subdivider can show that strict adherence to these regulations would cause unnecessary hardship. Financial hardship shall not be a consideration.

   b. Where the Planning Commission decides that there are topographical or other conditions peculiar to the site and a departure from these regulations will not destroy their intent.

2. Any variance thus authorized is to be stated in writing in the minutes of the Planning Commission with the reasoning on which the variance was granted.

J. RELATIONSHIP TO OTHER REGULATIONS

1. No Final Plat of land shall be approved unless it conforms to these regulations and the applicable requirements of the Lakeland Zoning Ordinance.

2. No Construction Plans shall be approved unless they conform to these regulations and the applicable requirements of the Lakeland Tree Ordinance.

3. No Construction Plans shall be approved unless they conform to the applicable standards of the Tennessee Department of Environment and Conservation Erosion Sediment Control Handbook.

4. Whenever there is a discrepancy between minimum standards or dimensions noted herein and those contained in zoning regulations, building code, or other official regulations, the highest standards shall apply.

K. WATER SUPPLY SYSTEM

Design of the water supply system shall conform to the requirements of Memphis Light, Gas and Water or the City of Bartlett in their respective service areas.

L. SANITARY SEWERS

Design of the sanitary sewer system shall conform to the requirements contained in the Tennessee Department of Environment and Conservation Sewer Design Guidelines (addendum to the Subdivision Regulations), and other ordinances and resolutions of the City of Lakeland. The Lakeland Sewerage Board prior to Construction Plan approval shall approve sewer plans.

M. GRADING AND DRAINAGE

1. In the development of grading and drainage plans, due regard shall be shown for all natural features such as topography, trees, water courses and historical landmarks, which, if preserved, will add attractiveness and value to the property.

2. Grading and drainage plans shall be developed in conjunction with Erosion and Sediment Control Plans as described in Section N. of this Article and with Tree Management Plans as described in Section O. of this Article.

3. Design of the drainage system shall conform to the requirements contained in the City of Memphis Drainage Design Manual.

4. Building lot grading plans are required on all lots within the City of Lakeland, Tennessee. These plans shall include, but not be limited to, the following: (Res.2-91)

    a. Detailed plat showing boundaries, metes and bounds, building location, setbacks, ROW, fences, and other details of the lot.

    b. Existing water courses with any proposed changes.

    c. Spot elevations, sufficient to determine site conditions and elevation of building in relation to surrounding ground.

d. Drainage structures on or around the lot in enough detail to show intended use.

e. Plan indicating proposed drainage from and across the lot and subsequent adjoining lots.

5. Creeks, streams or other drainage ways shall be protected by a drainage easement extending to both sides of the drainage way from the centerline. Any such easements shall be shown on the Construction Plans and Final Plat.

The City Engineer will review and approve/disapprove all grading plans with final grading inspection required prior to occupancy.

N. SWIMMING POOLS

Installation of swimming pools, associated accessories, safety items, and fencing shall be as specified by the Southern Standard Building Code as amended by Memphis and Shelby County Governments, except that fabricated pool covers shall not be substitutes for required fencing. (Res.5-89).

O. PARKLAND DEDICATION

1. In all residential developments and mixed use developments with a residential component, the Planning Commission shall require dedication of land to the City of Lakeland, free and clear of all encumbrances, which shall be used exclusively for community parks or other recreational purposes. At the option of the City, a payment in lieu of dedication, or a combination of dedication and payment in lieu of dedication may be required. Provisions for such dedication and/or payment shall be included in the Preliminary Plat submitted to the Planning Commission for approval. Copies of the Preliminary Plat shall be submitted to the Development staff as required by the submission process outlined in these regulations. The Parks Board shall be given the opportunity to recommend either acceptance of the dedication, fee in lieu of, or a combination thereof. In no instance shall the Parks Board delay its recommendation beyond the normal staff review period.

2. Each Preliminary Plat submitted for approval of a new subdivision or residential planned development shall provide for the dedication of land to the City of Lakeland for parkland, greenway and/or other recreational purposes.

   a. The development staff and the Parks Board shall determine the suitability of any proposed park dedication based on, but not limited to, such factors as size, shape, development potential, topography, subsoils, bodies of water, accessibility, location, utility, or compatibility with the Master Park Plan.

b. The selection criteria for greenway facilities shall be based on physical and programmatic issues. The proposed greenway route must be consistent with the Master Parks Plan and the Land Use Plan. Lands to be dedicated or reserved for greenway shall be suitable in the opinion of the Development Staff, the Parks and Recreation Board, in location, topography, environmental characteristics and development potential as related to the intended use and the relationship to the existing and proposed vehicular transportation system.

c. Any proposed bicycle /pedestrian trails shall be consistent with the Master Parks Plan and the Comprehensive Plan. In approving locations for bicycle/pedestrian trails, public open space areas of future subdivisions shall be taken into consideration. Land shall be suitable in the opinion of the Development Staff and the Parks and Recreation board in location, topography, environmental characteristics and development potential as related to the intended use.

3. The Parks and Recreation Board and Development Staff shall report their recommendations on the proposed land dedication in written form prior to approval of the Preliminary Plat. If the Planning Commission approves a park site, said park site shall be shown on the Preliminary Plat, Construction Plans and Final Plat of the proposed development as property of the City of Lakeland. Any such property shall be deeded to the City of Lakeland prior to approval of the Final Plat.

4. The amount of land required for dedication shall be determined by the formula in Table 1, provided however, that no parcel of less than five (5) acres shall be accepted unless it adjoins to another dedicated park or recreation land.

Table 1 – Parkland Dedication Formula

Formula: D = L x A x P x M

Where: D = Required parkland dedication in acres

L = Number of lots (dwelling units) proposed for development

A = Average family size for the City based on the most recent U.S. Census or State-certified census

P = Parkland ratio of ***.010*** (10 acres per 1,000 population)

M = Density multiplier from Table 2.

Table 2 – Density Multiplier

Number of Acres divided by Number of Lots	Density Multiplier
.80 and over	1.00
.70-.80	1.12
.60-.70	1.25
.50-.60	1.40
.40-.50	1.57
.30-.40	1.76
.20-.30	1.97
.10-.20	2.21
.09-.10	2.47
.08-.09	2.77
.07-.08	3.10
.06-.07	3.47
.05-.06	3.89
Under .05	4.36

5. Should the foregoing formula result in an amount of land less than five (5) acres or should a proposed parcel be determined unsuitable, the City shall require a fee in lieu thereof. Such fee shall represent the value of the required land dedication at the time of submission of the Construction Plans, as determined by an appraisal by a Member of the Appraisal Institute (MAI), which will be at cost to the developer. Where total lots in a development will be five (5) or less, the developer will pay a fee of three hundred dollars ($300.00) per lot.

6. Any such payment in lieu of dedication shall be paid immediately upon execution of the development contract and prior to the commencement of any construction. The Office of the City Manager will collect the fees at the time of the signing of the development contract and will transfer these funds into a parkland acquisition development account.

P. EROSION AND SEDIMENT CONTROL

1. An Erosion and Sediment Control (ESC) Plan shall be submitted to the Planning Commission as part of Construction Plan approval, as outlined in Section D of Article II of these regulations. The ESC Plan shall be designed in accordance with the General Criteria established in the Tennessee Department of Environment and Conservation Erosion Sediment Control Handbook, and the standards listed in these regulations.

2. The ESC Plan shall be developed using the following technical principles:

a. Plan the development to fit the particular topography, soils, drainage patterns and natural vegetation of the site so as to create the least erosion potential.

b. Minimize the extent of the area exposed at one time and the duration of the exposure.

c. Retain and protect natural vegetation whenever it is feasible.

d. Apply erosion control practices to prevent excessive on-site damage.

e. Apply perimeter control practices to protect the disturbed area from off-site runoff and to prevent sedimentation damage to areas below the development site.

f. Remove sediment from storm water before it leaves the site by allowing runoff to pond in controlled areas or by using natural vegetation, brush barriers, silt fences or hay bales.

g. Keep runoff velocities low and retain runoff on the site.

h. Divert upslope water around disturbed areas.

i. Transport runoff down deep slopes through lined channels or piping.

j. Minimize the amount of cut and fill.

k. Stabilize disturbed areas immediately after final grade has been attained; install permanent vegetation and structures as soon as practical.

3. Installation of the required improvements shall be done in such a manner as to provide for the most effective control of erosion and sediment. The erosion and sediment control plan, at minimum, shall include the following:

a. A list and brief description of each control measure that will be used.

b. A scaled site map clearly showing the existing and proposed contour lines, drainage ways, north arrow and location and type of each erosion and sediment control measure.

c. An implementation sequence indicating the order in which the erosion and sediment control activities will take place.

d. An inspection and maintenance schedule for all disturbed areas, material storage areas and erosion and sediment controls that were identified in the plan.

e. Designated areas for equipment maintenance and repair.

f. Provisions for waste receptacles at convenient locations, the regular collection of waste, protected storage areas for chemicals, paints, solvents, fertilizers and other potentially toxic materials and adequately maintained sanitary facilities.

4. Examples of acceptable vegetative controls include, but are not limited to, the following: vegetative buffer zones, brush barriers, sod stabilization, protection of trees, tillage with lime and fertilizer, temporary seeding, permanent seeding, mulching, topsoiling, erosion & sediment control blankets and surface roughening.

5. Examples of acceptable temporary structural controls include, but are not limited to, the following: diversion, silt fences, straw bale barriers, storm drain inlet protection, outlet protection, sediment traps, sediment basins, slope drains, subsurface drains, riprap, check dams, level spreaders, paved flumes, construction road stabilization and temporary gravel construction entrances and exits.

6. If work is discontinued for thirty (30) days or more in a disturbed area before the project is completed, appropriate interim controls shall be initiated within seven (7) calendar days from the day that work was discontinued.

7. Non-functioning control measures shall be repaired, replaced or supplemented within forty-eight (48) hours of discovery or as soon as field conditions allow.

8. Erosion and sediment controls shall remain in place and in functioning condition for the duration of construction activity and until the areas that they protect are completely stabilized.

Q. TREE MANAGEMENT

1. Any project on a site that is one (1) acre or greater in size requiring approval under these regulations must comply with the City of Lakeland Tree Management Ordinance. The purpose of the Tree Management Ordinance is to promote the preservation of trees as part of the land development and construction process, to promote the preservation of trees on residential properties, to prevent massive grading of land without provisions for replacement of trees and to protect existing trees during construction.

2. In accordance with the Tree Management Ordinance, no person shall remove, cause to be removed, poison, damage, trim or transplant any tree with a trunk diameter of six (6) inches or more at breast height without first obtaining a permit.

3. If trees with a trunk diameter of six (6) inches or more at breast height are proposed for removal, the following materials shall be submitted at the Construction Plan Approval phase, as described in Section D of Article II of these regulations:

   a. A Tree Survey and Inventory Plan as specified in Section 1900.8 of the Tree Ordinance;

   b. A Tree Management Plan as specified in Section 1900.10 of the Tree Ordinance; and

   c. A Tree Replacement Plan as specified in Section 1900.11 of the Tree Ordinance.

4. Construction Plan approval shall not be granted by the Planning Commission until it is determined that the proposed development complies with the Tree Management Ordinance.

R. CARE OF AREA DURING CONSTRUCTION

1. Contractors and builders shall be responsible on a daily basis for cleaning up all loose paper and/or other material that may be scattered by the wind and for preventing such material from scattering through a subdivision or to adjoining property. The project site shall be kept in a clean and unlittered manner. Contractors and builders who fail to comply with this requirement shall be subject to the penalties outlined in Article VI of these regulations.

2. Contractors and builders shall not allow waste materials, glass, dirt and debris to be placed or to remain in a public street or road. Surplus dirt shall not be graded or pushed into a street or road. Contractors and builders who fail to comply with this requirement and/or fail to remove any of the above items from the street or road when instructed by the County Engineer shall be subject to the penalties outlined in Article VI of these regulations.

3. All job sites shall have access to portable toilet facilities provided by the contractor. The facilities shall be maintained until the job has been through final inspection or toilet facilities within the job site are usable and accessible.