

## ARTICLE 3

### DESIGN STANDARDS

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The lands included within the development shall be suitable for the various purposes proposed and shall not be subject to poor drainage, erosion or other conditions detrimental to the health, safety and general welfare of the public. Further, no development plan shall be approved unless the City finds, after full consideration of all pertinent data, that the development can be served adequately with such normal public facilities and services as are suitable in the circumstances of the particular case. The Owner/Developer shall be responsible for the acquisition of all materials, installation and construction costs, and legal documentation for all on-site and off-site activities of the proposed development.

A Professional Engineer, registered in the State of Florida and qualified by virtue of training and experience to practice the engineering discipline involved, shall be employed to design all required improvements such as streets, traffic control, drainage structures, bridges, bulkheads, and utility facilities, and to provide such professional services during construction as are generally considered to be part of a complete engineering service. Upon request, the Owner/Developer shall submit to the City Engineer signed documentation to this effect. All plans for improvements shall be prepared and sealed by such Engineer and approved by all appropriate regulatory agencies and the City prior to the commencement of the improvements. Street lighting plans for the development shall be prepared by the power company supplying service to the development. Florida Statute shall govern the preparation of all site plans and related engineering drawings submitted to the City.

3.01.01 Conformance with City Policy

The subdividing and/or development of any areas shall conform to the adopted general goals and objectives of the City with respect to the physical development of the City as set forth in various documents including, but not limited to:

- A) The Ocoee Comprehensive Plan.
- B) City policies and Services and Facilities as enunciated by applicable City Ordinances.
- C) The Land Development Code of the City of Ocoee.
- D) The Engineering Standards Manual.
- E) Ordinances of the City of Ocoee.

3.01.02 Use of Natural Features

The arrangement of structures, stormwater systems, lots and blocks, and the street system shall make the most advantageous use of topography and preserve mature trees, wetlands, and other natural features wherever possible.

3.01.03 Consideration of Soil and Flood Hazards

All land intended for use in a development plan for building sites must be able to be used safely for building purposes without danger from flood or other inundation, or from adverse soil or foundation conditions or from any other menace to health, safety, or public welfare. No filling or grade level change shall be permitted which will reduce the flood storage volume available between the base flood elevation and the normal ground water elevation to adversely affect any surrounding area. No development shall be permitted in the 100 year flood plain. The Orange County Soil Survey is to be used as a guideline in identifying soil properties and interpretations for various uses in terms of soil limitations and soil features adversely affecting a particular use.

The following Standards shall be followed in areas of low and very low potential soils:

- A) Soils with either very low potential or low potential for proposed uses, as identified in the Soil Survey, shall not be developed unless such soils are removed or modified to accommodate the intended use, as approved by the City Engineer.
- B) Public facilities shall not be constructed where the soil performance for said public facility is of low or very low potential, except in cases of overriding public interest.
- C) Dedication shall not be accepted for public ownership or maintenance of utilities or roads constructed in areas where soil performance for said facilities is of low or very low potential.

### 3.01.04 Special Considerations

Special consideration shall be given in the layout of streets, lots, blocks, buildings, and easements to the preservation of large and specimen individual trees as identified by the Ocoee Comprehensive Plan. Special consideration shall also be given to preserving natural drainage methods and natural topography and landscape. Special consideration shall be given to providing special screening, landscaped or natural buffers, or landscaped berms where developments abut non-compatible land uses in accordance with the LDC. Special consideration shall be given to conformance with streets and driveway spacing Standards in accordance with the LDC and this document. Special consideration shall be given during the development design process to not only make the site accessible to the public through the use of handicap parking and ramps, off-site sidewalks/bikeways, and interconnection of adjacent sites; but also where possible encourage the use of alternative mode of travel by providing transit stops and shelters, on-site sidewalks/bikeways, bike racks, and signed and marked reserved employee ride share parking spaces.

### 3.01.05 Record Drawing Requirements

All “as-built” information submitted to the engineer shall be sufficiently accurate, clear and legible to satisfy the engineer that the information provides a true representation of the improvements constructed. Upon completion of construction, the contractor shall submit to the engineer of record complete sets of “as-built” construction drawings as required for submittal and approval. These drawings shall be marked to show “as-built” construction changes and dimensioned locations and elevations of all improvements and GPS data table and shall be signed and sealed by a Florida registered land surveyor. The following information shall be included in the “as-built” submittal at a minimum:

#### A) Sanitary Sewer:

1. Top elevation of each manhole frame and cover.
2. Invert of each line entering and leaving each manhole/structure.
3. Length of each run of main between manholes (center to center).
4. Actual grade of pipe between manholes.
5. Locate all service wyes from downstream manhole with depth at lot line and distance from the main line.
6. Field measurements for location from permanent visible objects all fitting/accessories not visible from the surface (minimum two point ties) (including clean-outs).

#### B) Storm Drainage:

1. Top elevation of each manhole frame and cover/grate as well as all other structures (headwalls, control structures, etc.).
2. Invert elevation of each line entering and leaving each structure, including underdrain pipes.
3. Inverts of all mitered end sections.
4. Actual grade of pipe between the structures.

5. Invert elevation and two horizontal ties from permanent visible objects to all storm stub-outs, underdrain cleanouts, yard drains, etc.

C) Water and Reuse System and Force Main

1. Actual lengths between all fittings and valves along the main run.
2. Locate with measurements from permanent visible objects all fittings/accessories not visible from the surface (minimum two point ties).
3. As-built information on water systems shall include locations of all fire hydrants, water services, blow-off assemblies, and top of pipe elevations at all fittings and at a minimum of 100 feet spacing along the length of the mains.
4. All sample points shall be shown in the “as-built” drawings and shall be sequentially numbered throughout the entire project without duplication between plan sheets. The numbering shall conform with those indicated in the samples for fdep clearances.

D) Utility Crossing Separation Information for that on the Plans Verifying:

1. Size and material of crossing pipes.
2. Top elevation of bottom pipe.
3. Bottom elevation of top pipe.
4. Finish surface elevation over utility crossing.

E) Pavement Grades and Drainage Patterns

1. Pavement profiles and critical points shall have verified elevations indicating the constructed finished grade.
2. Drainage patterns indicated by the design drawings shall have verified spot elevations indicating the finished grade.

F) GPS Data:

The x, y and (z) location based on the coordinate system Florida east zone state plane coordinate feet NAD 83, of all manholes (rim elevation), lift stations (rim elevation), cleanouts (grade), sample points (grade), fittings (center of pipe) and meter boxes (grade), etc. Shall be clearly shown. Acceptable position accuracy shall be sub-meter or better for compatibility with global positioning system (GPS) equipment.

The GPS data shall be provided in an asset table incorporated as a section of the final “as-built” drawings and shall include the headings as follows:

Asset #; utility system (water, sewer, reclaimed water, force main, stormwater); description; X-Coord.; Y-Coord.; Z-Coord.

Asset #	Utility System	Feature	X-Coordinate	Y-Coordinate	Z-Coordinate
001					
002					
003					
004					

**Section**

**3.02**

**STREETS AND OTHER PAVEMENTS**

3.02.01 General

The design character, width, grade and location of all streets and bridges shall conform to the Standards in this Section and shall be considered in their relation to existing and planned streets, to topographical conditions, to public convenience and safety, and in their appropriate relation to the proposed uses of the land to be served by such streets. Whenever not modified by these Standards, the guidelines of the Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways, (FDOT), and the Standards of the American Association of State Highways and Transportation Officials, referred to therein, shall be the minimum acceptable standard.

3.02.02 Minimum Standards For Right-of-Way Improvement

A) Sidewalks/Bikeways: It is the intent of the City that every new residential lot or non-residential development shall construct its portion of the city wide pedestrian/bikeway system. If a variance to these provisions is granted, the Owner/Developer shall execute a sidewalk agreement with the City to ensure the future installation of the facilities.

B) Driveway Approaches: Driveway approaches shall be 3,000 psi concrete, at least 6 inches thick, with break and/or expansion joints at property line. Sidewalk/bikepath shall be constructed with the driveway section. Expansion joints shall be installed at the tie-in point with sidewalks and curbing. All installations to maintain a slope of ¼ inch per 1 foot horizontal.

C) Streets: Abutting rights-of-way shall be paved as hereinafter specified.

1) Design Specifications

Streets shall be classified based on the definitions and with consideration of vehicle trip generation ratios unless superseded by alternative ratios adopted by the City. Where the City has adopted a higher classification than the classification based on projected traffic volumes, the higher classification shall be used. All streets shall be designed in accordance with the Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (FDOT), LDC, and the following minimum specifications, except that greater requirements must be met when imposed by an agency having jurisdiction of a particular road. Horizontal alignments shall be based on a minimum design speed of 35 MPH except for local residential streets. Local residential streets shall have a minimum back of curb horizontal curvature of 50 feet without superelevation.

2) Minimum Street Grade Specifications  
Percent Grade of Roadway

<b>Table 3-1</b>			
<b>Centerline:</b>	<b>Arterial Street</b>	<b>Collector Street</b>	<b>Local Street</b>
Maximum	10%	10%	10%
Minimum	0.50%	0.50%	0.50%

Slopes less than 0.50% shall require special approval by the City Engineer.

The minimum cross slope shall be 2% except in necessary transitions.

3) Intersection Design

a) Streets and driveways shall be laid out to intersect as nearly as possible at right angles (90°) or radial, however, in no case shall the angle of the intersection be less than 60°. Multiple intersections involving the juncture of more than 2 roadways and driveway approaches shall be prohibited. The gradient within 100 feet of the intersection and driveway shall not exceed 3%. The design shall comply with the Specifications contained in the Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (FDOT).

b) A minimum sight distance of 250 feet from any intersection shall be maintained on the intersecting streets. Greater distances may be required to satisfy FDOT and the Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (FDOT). In all cases, clear sight distance from any intersection shall be maintained on the adjoining streets.

4) Radii at Intersections

The minimum intersection radii of back of curb at all typical intersections approximating a right angle shall be as follows:

<b>Table 3-2</b>	
<b>Category</b>	<b>Minimum Radius</b>
Local to Local - Residential	25'
Local to Local - Non-Residential	35'
Local to Collector	35'
Local or Collector to Arterial	50'
Collector to Collector	30'

A deceleration lane and taper shall be required as outlined in ARTICLE 24 of this Manual. A minimum radius of 30 feet shall be provided at all intersecting right-of-way lines.

The design and construction of larger or smaller radii maybe required by the City Engineer based upon the type of design vehicles and design speed of the roadway.

5) Pavement Specifications

Improvements designed as above shall be provided as required by the following schedule:

- a) For residential developments, improvements shall conform to STANDARD A., For Standard configuration see, Typical City Details attached as part of this Manual.
- b) For all other developments, improvements shall conform to STANDARD B., For Standard configuration see, Typical City Details attached as part of this Manual
- c) Where the proposed development includes or abuts an existing full or half right-of-way street, said street shall also be improved as required to conform to the following Standards.
- d) When a modification to the width of an existing roadway is necessary, a minimum of 1 1/2 inch of asphaltic concrete overlay with leveling shall be installed the full length and width of the entire affected section of the adjacent roadway.

STANDARD

TABLE 3-3		
A	B	1) Grading and centerline gradients shall be provided on the plans and as approved by the City. (See Section 3.02)
		2) Curb and gutters shall be provided as follows:
A		a) Standard 24 inch wide Miami Residential or FDOT Type F curb and gutter.
	B	b) Standard 24 inch wide FDOT Type F curb and gutter.
A	B	c) Standard Type A concrete curb shall be used on center medians and islands.
A	B	d) Density under curb and gutter shall be to a minimum density of 98% of the maximum density determined by AASHTO T-180
A	B	3) Subbase shall be approved by the City Engineer as being suitable material prepared in accordance with Standards established by this Manual. Twelve inches shall be the minimum thickness unless otherwise stated in this ARTICLE.
		4) Pavement base shall be improved as follows:
A	B	a) Arterial Streets: 10 inch compacted limerock / soil cement
	B	b) Collector and Commercial Streets: 10 inch compacted limerock / soil cement
A		c) Local Streets: 8 inch compacted limerock / soil cement
		Note: an equivalent type or alternate base material may be approved by the City Engineer if field situation dictates.
		5) Wearing surface shall be improved as follows:
A	B	a) Arterial, Collector and Commercial Streets: 1-¾ inch structure course and 1 inch friction course. Non-skid surfaces may be required. FDOT-applicable asphaltic concrete shall be used unless otherwise approved by the City Engineer
A	B	b) Local Streets: Minimum of 2 inch asphaltic concrete surface course or the equivalent as meeting Standards established by the City. Non-skid surfaces may be required. FDOT-applicable asphaltic concrete shall be used unless otherwise approved by the City Engineer. City Engineer may require surface treatment to be applied in two (2) layers with final top layer being installed after build-out.
A	B	6) Grassing and mulching of flat areas, or sodding of swales, parkway medians, percolation areas, and planting strips shall be in accordance with City Standards. In no case shall mulching of driveways be permitted.



A	B	7) Street name signs in accordance with City specifications and appropriate block numbers shall be installed on all public streets at all intersections. The street name signs will be installed by the City upon notification from the Developer in writing that the roads are complete. The Owner/Developer shall order and pay for all such signage, including installation cost, prior to issuance of any building permits. The signs shall be in place prior to the City's final acceptance of the roadway.
A	B	8) Street lighting shall be installed at the expense of the Developer, and includes payment of 2 years worth of up-front fees. All utilities are to be installed underground. Poles shall not be placed in medians or directly adjacent to the roadway or within sidewalks/bikeways. Wherever practical, poles shall not be installed immediately adjacent to sidewalks/bikeways. The poles shall be placed either in an easement or adjacent to the right-of-way line to allow a minimum 5 foot clearance from the nearest edge of pavement. Location modification shall be specifically approved by the City Engineer prior to installation.
A	B	9) Traffic control devices such as signs and pavement markings and traffic signalization devices shall be installed by the Owner/Developer at the Owner's/Developer's expense within the project area and on abutting streets and highways in accordance with the MUTCD and as approved by the City Engineer. Modification requests shall be specifically approved by the City Engineer prior to installation.
A	B	10) For two years from City Commission's project acceptance, the Owner/Developer shall warranty all constructed facilities in public rights-of-way and easements by Surety document approved by the City being either a Letter of Credit or Cash.

3.02.03 Additional Right-of-Way and/or Pavement Width

Whenever any street shows future need for improvement within the area to be developed, the appropriate right-of-way or pavement width, in conformance with minimum City Standards shall be required to be dedicated as outlined in the LDC.

Half streets and substandard rights-of-way and pavement widths shall be prohibited. Where a previously dedicated incomplete or substandard street, improved or unimproved, abuts or is within a tract to be developed, the remainder of the right-of-way shall be dedicated and the full street improved according to City Standards.

#### 3.02.04 Access

Vehicular access shall be provided as follows and as outlined in the LDC.

- A) Minimum number of access points to adequately serve the development without decreasing the safety and capacity of the public rights-of-way. Joint-use driveways may be required by the City. All developments shall also be evaluated by the City of Ocoee Fire Rescue Department for emergency access.
- B) In order to provide ease and convenience for ingress and egress to private property, with maximum safety and the least interference to the traffic flow on public streets, the number and location of driveways for roadways with classification of collector and above, shall be regulated by the dedication of access rights to the City in accordance with the LDC.
- C) Deceleration and acceleration lanes, left-turn lanes, bypass lanes, and tapers are required on all roads with a classification of collector and above unless exempted by the City Engineer. Median relocations and modifications or other design features may be required at the discretion of the City Engineer to protect and maintain the safe and efficient operation of the public rights-of-way.
- D) All buildings, when constructed, shall be accessible to fire department apparatus by way of access roadways with an all weather driving surface of not less than 20 feet of unobstructed width and a turning radius of 40 feet capable of supporting the imposed loads of fire apparatus. This access shall also have a minimum vertical clearance of 13 feet 6 inches. All hydrants shall remain serviceable during project construction, unless otherwise approved by the City of Ocoee Fire Rescue Department.
- E) Driveways shall be installed as depicted in ARTICLE 25 of this Manual.

#### 3.02.05 Paved Access to Nearest Paved Public Road

A development shall abut or have as its primary access onto a street designed and paved to standard requirements of the authority having jurisdiction (City, County, State). The Owner/Developer shall install or upgrade the street from the entrance of the development to the nearest public paved road of proper functional classification as determined by the City Engineer.

#### 3.02.06 Commercial/Industrial Driveways and Internal Circulation

- A) Vehicular circulation must be completely contained within the property. Vehicles located within one portion of the development must have access to all portions without using the adjacent street system and be capable of accommodating the vehicles associated with the development.

- B) Acceptable plans must illustrate that proper consideration has been given to the surrounding street plan, traffic volumes, proposed street improvements, vehicular street capacities, pedestrian movements, and safety.
  - 1) Driveways directly accessing thoroughfares or accessing local streets adjacent to thoroughfares shall meet the design requirements of the LDC.
  - 2) Driveways accessing other local streets shall not intersect or be nearer than 50 feet (20 feet for residential) to the adjacent driveway without the approval of the City Engineer. Where possible, driveways shall be located a minimum of 200 feet (50 feet for residential) from public intersections. Measurement is based on nearest edge of pavement to nearest edge of pavement.
- C) Deceleration lane and tapers shall be required as outlined in ARTICLE 24 of this Manual.
- D) Appropriate special radii shall be designed, subject to the approval of the City Engineer for other than right-angle (90°) intersections.

**Section 3.03 EASEMENTS**

Easements shall be centered on rear or side-lot lines where necessary. Easements shall be provided as determined by the LDC. “Vehicular Access Easements” shall be located as approved by the City Engineer.

Where necessary for safety and convenience, “Construction Easements” of suitable width shall be required as determined by the City. No public easement shall be occupied without first obtaining a Right-of-Way Utilization Permit. When encroachment is desired, the applicant shall contact all utilities doing business within the City, prior to the City granting permit.

“Joint-Use Access Easements” shall be required, as necessary, to provide safe and adequate access to a site and for the protection of the capacity and safety of the adjacent roadway.

Any off-site easements, needed to make the system function, shall be included in the proposal for development and made a criteria for plan approval.

Easements for all facilities must be shown on construction drawings and approved by the City. The easement documents and rights-of-way deeds must be executed, accepted and recorded by the City. All recording fees shall be paid to the City prior to recording in the Public Records or issuance of a building permit. All easements for private developments shall be provided at no expense to the City.

**Section 3.04 SURVEY MONUMENTS**

Permanent Reference Monuments (PRMs) and Permanent Control Points (PCPs) shall be placed as required by Florida Statutes. A letter from a Florida registered Land Surveyor certifying that all monuments, PCPs, PRMs are in place as of the date of the project acceptance shall be required of all developments. The Contractor shall be responsible for re-establishing all disturbed survey markers and/or monuments. All survey work shall be performed in accordance with pertinent memoranda and shall comply with Minimum Technical Standards, as adopted by the Florida Board of Land Surveyors, pursuant to Florida Statutes.

**Section 3.05 CURBS AND GUTTERS**

All streets shall be paved and drained in accordance with FDOT Standard curb-and-gutter (or Miami curb in residential areas), unless otherwise specifically approved by the City Engineer. Curbing shall be used for stormwater conveyance, traffic control channelization, and the protection of landscaped areas.

The width of the curb and gutter shall be a minimum of 24 inches and shall be as outlined by this Manual. Simple vertical curbing within rights-of-way will not be acceptable to the City. Approved mountable median curb, of the FDOT type, may be used, as approved by the City Engineer. All curbing designed to handle water shall incorporate an approved gutter design.

No water valve boxes, meters, portions of manholes, or other appurtenances of any kind relating to any underground utilities shall be located in any portion of a curb-and-gutter section. The minimum allowable flow line grade of curbs and gutters shall be 0.40% except in intersections where flatter grades shall be allowable. Cross-street valley gutters shall not be allowed.

**Section 3.06 STORMWATER MANAGEMENT**

**3.06.01 General Requirements**

Protection of water resources is critical to the public health, safety, and welfare. Innovative approaches to stormwater management shall be encouraged and the concurrent control of erosion, sedimentation, and flooding shall be mandatory. No site alteration shall cause siltation of wetlands, pollution of downstream wetlands, or reduce the natural retention or filtering capabilities of wetlands.

### 3.06.02 Stormwater Management

A complete stormwater management system shall be provided in all areas of the project and for handling stormwater runoff that flows into or across the project area from the outside, without undesired additional flooding of any other land. The system shall be designed for long life, low maintenance cost, and ease of maintenance by normal maintenance methods. Soil types shall be considered and full development of the basin assumed for selection of proper runoff coefficients within the basins involved. Refer to ARTICLE 34 of this Manual for design specifications. Should the proposed development area contain an existing natural watercourse drainageway, channel, etc., such natural watercourse and the vegetation inherent therewith shall be maintained and the proposed development designed so as to preserve same unless otherwise permitted.

### 3.06.03 Guidelines for Berms

Slopes are preferred to be 5:1 or less on berms and other applications. Slopes 3:1 shall be the maximum permissible slope, unless specifically addressed elsewhere in this Manual, but shall be stabilized with sod or other stabilizing material. Retaining walls require the approval of the City Engineer or his Designee and must be signed and sealed by the Engineer for any walls exceeding 2 feet in height. Where berms or slopes are specifically addressed in other ARTICLES of this Manual, they shall conform to that ARTICLE.

## **Section**

### **3.07 DECORATIVE ENTRANCES**

Where an Owner/Developer is specifically permitted by the City to construct decorative landscaping within the right-of-way of any street, the Owner/Developer shall provide a maintenance agreement acceptable to the City for perpetual maintenance of such landscaping and shall provide for removal of such landscaping on order by the City for cause. The City shall not accept liability or responsibility for maintenance of landscaping in rights-of-way and shall be held harmless for any damage done to same in work performed by the City in such right-of-way. The design and maintenance of the landscaping shall comply with the City's set back regulations for fixed object hazards and for driver clear sight distance. Private signs are prohibited within public rights-of-way.

A minimum sight distance per the LDC must be maintained at all public road intersections including those with driveways. Structures are prohibited in the rights-of-way except as permitted by the City Engineer in accordance with the LDC.

**Section 3.08 OWNER/DEVELOPER CONTROL DURING CONSTRUCTION**

The Owner/Developer shall be required during the entire construction period to control, regulate, and maintain the development in such a manner as to prevent the accumulation of trash and debris, resulting from the Owner's/Developer's construction activities, on both the site and adjacent public and private property, which would detract from the enjoyment and pleasure in the natural scenic beauty of the City, and, in turn, injuriously affect the economic well-being of the public. The use of residential lots in nearby developments or Substantially Completed phases of the same development, under the ownership and control of said Owner/Developer, for the bulk storage of construction materials substantially unrelated to the development of those residential lots is prohibited. A development shall be deemed to be Substantially Completed when 70% of the planned units are completed and ready for occupancy, or are actually occupied.

**Section 3.09 EROSION CONTROL**

All development shall follow erosion control methods as described in this section, FDOT Design Standards, and FDEP Stormwater, Erosion and Sediment Control Program and Manual.

Seeding, mulching, sodding, and/or other acceptable methods shall be used to prevent erosion during all construction activities per requirements as specified in the LDC.

The Owner/Developer of commercial and residential lots shall be required to maintain curbs and gutters free of accumulations of sand and earth. Temporary siltation basins may be required during construction. Maintenance shall be provided by the Owner/Developer for the 2 year period of the maintenance period and for each lot until final inspection is passed. All actions to prevent erosion or pollution shall be done in accordance with this Manual.

**3.09.01 Stormwater Pollution Prevention Plan (SWPPP)**

If required by the City Engineer, the SWPPP, details, and calculations shall document all the measures necessary to limit the transport of sediments outside the limits of the project to the volume and amount that existed prior to the commencement of construction. This condition shall be satisfied for both the total anticipated construction period at a minimum and for the 2.3 year frequency, 6 hour duration storm event. Provisions must be made to preserve the integrity and capacity of check weirs, sediment basins, slope drains, grading patterns, etc. required to meet this provision throughout the life of the construction. Submittal of a Stormwater Pollution Prevention Plan shall comply with the requirements of the FDEP and SJRWMD.

3.09.02      Stockpiling Material

No excavated material shall be stockpiled in such a manner that directs runoff directly off the project site or into any adjacent water body or stormwater collection system. No building construction or landscaping materials shall be stored within public rights-of-way or on the streets.

3.09.03      Exposed Area Limitation

The surface area of open, raw, erodible soil exposed by clearing and grubbing operations or excavation and filling operations shall not exceed 10 acres. This requirement may be waived for large projects with an erosion control plan, which demonstrates that opening of additional areas will not significantly affect off-site deposit of sediments.

3.09.04      Inlet Protection

Inlets and catch basins shall be protected from sediment laden storm runoff until the completion of all construction operations that may contribute sediment to the inlet.

3.09.05      Temporary Seeding

Areas opened by construction operations that are not anticipated to be dressed and receive final grassing treatment within 30 days shall be seeded with a quick growing grass species which will provide an early cover during the season in which it is planted, and will not later compete with the permanent grassing. The rate of seeding shall be a minimum of 30 lb per acre.

3.09.06      Temporary Seeding and Mulching

Slopes steeper than 6:1 that fall within the category established in 3.09.05 above, shall be mulched using a minimum of 2 inches, loosely measured, mulch material, cut into the soil of the seeded area to a total depth of 4 inches.

3.09.07      Temporary Grassing

The seeded or seeded and mulched area(s) shall be rolled and watered as required to assure optimum growing conditions for the establishment of a good grass cover.

3.09.08      Temporary Regrassing

If, after 14 days, the temporary grassed areas have not attained a minimum of 75% good grass cover, the area will be reworked sufficiently to establish the desired vegetative cover.

3.09.09            Maintenance

All features of the project designed and constructed to prevent erosion and sediment shall be maintained during the life of the construction so as to function as they were originally designed and constructed.

3.09.10            Permanent Erosion Control

The erosion control facilities of the project shall be designed to minimize the impact on off-site facilities. All stormwater discharge from the project limits shall be routed through detention basins to trap suspended sediments. Discharge facilities from these basins shall be provided with a skimming device to trap floatable debris.

3.09.11            Permanent Seeding

All areas which have been disturbed by construction shall, as a minimum, be fertilized and seeded. The fertilizer shall be of 12-8-8 proportions and shall be uniformly spread at a rate of 400-500 lb per acre and mixed with the soil to a uniform depth of 4 inches. Included with the fertilizing operation will be the application of amendments, if necessary, such as dolomitic limestone or aluminum sulfate to correct the pH factor to within the limits of 6.0-7.0. The grass seed shall be uniformly spread at the rate of 100 lb per acre while the soil is moist. The grass seed mixture shall be of 20 parts bermuda and 80 parts bahia, with the addition of 30 parts rye in the winter season.

3.09.12            Permanent Seeding and Mulching

In addition to the minimum requirements of 3.09.11 above, slopes of from 6:1 to 4:1 inclusive shall be mulched using a 2 inches, loosely measured, mulch material cut into the soil of the seeded area to a total depth of 4 inches.

3.09.13            Permanent Sodding

All retention/detention basins shall be solid sodded within their limits. All exposed areas within public rights-of-way shall be solid sodded. Other areas with slopes steeper than 4:1 shall be solid sodded.

3.09.14            Strip Sodding

Strip sod shall be placed adjacent to all curbs, walks and pavements to the dimensions indicated in the Typical Cross-section provided in the approved plans.

3.09.15            Regrassing

All grassed areas shall be maintained to assure a good stand and sufficient ground cover to minimize erosion. If, after 60 days, an adequate ground cover has not been established, the area will be regrassed.



3.09.16 Additional Fertilization

Grassed areas not accepted within 90 days of their completion shall be refertilized at an application rate of 250 lb per acre.

**Section 3.10 PHASED DEVELOPMENT**

Each phase of any development shall be capable of standing on its own as if subsequent areas planned for development are not developed.

Residential Developers and Builders shall follow the erosion and sediment control principles and practices above and the following during construction on individual lots:

- A) Silt fences/barriers shall be installed on lot lines adjacent to pond, natural, and conservation areas to minimize erosion. Silt fences/barriers shall also be installed as needed to prevent erosion/flooding of adjacent built-out lots and streets.
- B) During construction, streets shall be kept free of excessive dirt and construction debris. Hay bales, sand bags or other approved erosion and sediment control devices shall be installed and maintained at stormwater inlets. Streets shall not be used for storage of construction materials. Containers shall be provided for holding trash and construction debris.
- C) Prior to final acceptance, erosion and sediment control provisions (sodding and seeding/mulching) on adjacent vacant lots shall be restored. Erosion and sediment control precautions shall be taken where erosion and/or washouts can be anticipated, particularly along side lot lines. All construction debris and excess dirt shall be removed from adjacent vacant lots (including those across the street).

**Section 3.11 TRAFFIC CONTROL DURING CONSTRUCTION**

The Owner/Developer shall prohibit public traffic from using newly constructed roadways until they are accepted and approved to be opened by the City Engineer or his Designee. Barricades and other safety devices shall remain in place until such time as deemed appropriate to remove them, or until such time as the hazard to health and safety of the general public has been reduced to minimal acceptable standards.

The Owner/Developer shall be required to provide work zone traffic control during construction within the public rights-of-way until approval is given by the City Engineer or his Designee to remove the controls as established in accordance with the MUTCD.

**Section**

**3.12**

**TRAFFIC SIGNAL PRE-EMPTION SYSTEM**

All traffic signals shall be equipped with an Opticom Traffic Signal Pre-Emption System. The system shall be usable by an emergency vehicle approaching from all intersection directions. Before installation, the system plans shall be reviewed and approved by the City of Ocoee Fire Rescue Department and Orange County's Traffic Engineering.