

**SECTION 10.00
ENVIRONMENTAL**

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10.0 ENVIRONMENTAL

10.01 GENERAL

This chapter contains standards, specifications, techniques and devices required to preserve the natural function of the environment, and for the purpose of insuring compliance with the Town's Sedimentation & Erosion Control Ordinance, Flood Damage Prevention Ordinance and other environmental ordinances, policies, and standards. These techniques and devices are the minimal acceptable for use in the Town of Holly Springs. The use of other techniques and devices is acceptable if adequate measures are provided by the alternative and prior approval is given by the Director of Engineering based on a review of specifications and details for the measure. The designer should also refer to Section 4.00 of these specifications for more Sedimentation & Erosion Control Standards.

10.02 TREE PROTECTION PRESERVATION AND HARVESTING

Tree protection and preservation is required whenever preservation or protection of existing vegetation is required per the Town's UDO and other ordinances, policies, etc. Fencing locations shall be shown on preliminary and construction drawings and may be modified in the field with approval of the Inspector.

Trees shall be protected by fencing installed the distance from the trunk of the tree that equals the diameter of the trunk of the tree divided by two and converted into feet or at the drip line of the tree branches; whichever is more stringent. Tree protection fencing shall be installed before any work is done on the site and inspected during the Certificate of Compliance Inspection.

Encroachment into buffer areas must be permitted by the Engineering Department per Section 7.06, D., 4., e Environmental Buffer Areas of the Town of Holly Springs, Unified Development Ordinance and 2003 N.C. Sess. Law ch. 73, § 5.1.

A separate timbering plan is required for timbering that fits the criteria outlined in Section 9-5023 of the Town's Soil Erosion and Sediment Control, Stream and Wetlands Protection, Land Disturbance Ordinance.

A. Tree Protection Fencing

Standard tree protection fencing shall be used to protect any tree save area including riparian buffers, buffers required by the UDO, thoroughfare buffers, open space or areas designated by the Town's Engineering, Planning, or Parks and Recreation Departments. Fencing shall consist of high-visibility orange, UV-resistant high tensile strength poly barricade fabric with 5' steel posts located at a maximum 8' spacing, with minimum 10 gauge line wires. Signage shall be required which states "TREE PROTECTION AREA DO NOT ENTER" along the fencing at 50 foot

intervals (maximum), and shall be made out of a durable waterproof material with a minimum of 3” lettering spaced clearly legible in accordance with the standard detail and the approved erosion control plan.

B. Boardwalk-type sidewalk

Boardwalks shall be used adjacent or through tree save areas or riparian buffers in lieu of sidewalk or asphalt. These measures shall be in accordance with the standard detail.

C. Construction Operations in (or adjacent to) Tree Save Areas

When construction operations (including but not limited to cut and fill) cannot be avoided in or near either tree save areas or the drip line of the tree, the following criteria shall be met:

1. A tree specialist shall be consulted prior to obtaining an approved timbering, erosion control, or grading plan or beginning operations of a plan is not required. Recommendations from the specialist may be established as conditions of plan approval.
2. No more than 2” of fill may be placed on the roots or around the trunk of a tree.
3. Cut slopes shall be no closer than 3 times the diameter of the tree, and shall not cause removal of more than 25% of the root zone surrounding the tree.
4. No heavy machinery shall be used within the drip line of the tree. Construction equipment shall be limited to small rubber-tired equipment and hand work.
5. Root pruning with instruction by an arborist is required prior to the installation of any permanent structures or excavation that encroaches into the root zone of a tree.
6. All denuded area around the tree must be covered by at least 3” of mulch within 10 days of completion of work around the tree.
7. A 2 (two) year warranty period may be required for all work done in (or adjacent to) a tree save area.

10.03 INDIVIDUAL LOT REQUIREMENTS

A. Erosion and Sedimentation Control

Erosion and Sedimentation Control measures are required on lots that have an active construction in compliance with Section 4.09. Residential lot construction of 20,000 square feet or greater of disturbed area requires an Erosion Control Plan approval and a Environmental Development Permit. The amount of disturbed area for residential lot construction is determined by the lot or lots that are to be constructed in a subdivision or phase of a subdivision. These lots do not have to be contiguous or being disturbed at the same time.

B. Flood Damage Prevention

Individual lots shall be required to comply with the Town of Holly Springs Flood Damage Prevention Ordinance, ordinance number 06-08, Chapter 8, Article III of the Holly Springs NC, Code, and 10.02 of the Town of Holly Springs Development Procedures Manual, Building Permit Procedures.

C. Tree Preservation

Tree preservation must take place on all lots with active construction in compliance with 10.02 of this section.

10.04 DEVELOPMENT IMPACTS IN ENVIRONMENTALLY SENSITIVE AREAS

A. Stream Crossing

In areas, where utility line installation is proposed to go through an area determined to be environmentally sensitive (such as stream, wetlands and/or floodplain) the following items shall be incorporated into design and construction in order to minimize adverse impacts to the area. All areas of stream crossings shall be surveyed by a professional land surveyor, and the use of LIDAR or GIS data is unacceptable. Evaluation to determine if boring and jacking under the environmental feature is possible. Obtaining permits from regulatory agencies with jurisdiction, site specific erosion control devices (diversions, pumping, removal of fill, stabilization, etc.), a detailed construction sequence for the specific utility crossing, special techniques as required, and a special preconstruction meeting prior to starting the work. At the end of each work day, until completion, the site shall have appropriate erosion control measures installed to prevent damage from sedimentation and all channels must be restored to have positive flow. Once work has started, it must be completed in the shortest timeframe possible. Town maintained sanitary sewer outfalls must be considered as permanent stream and wetland

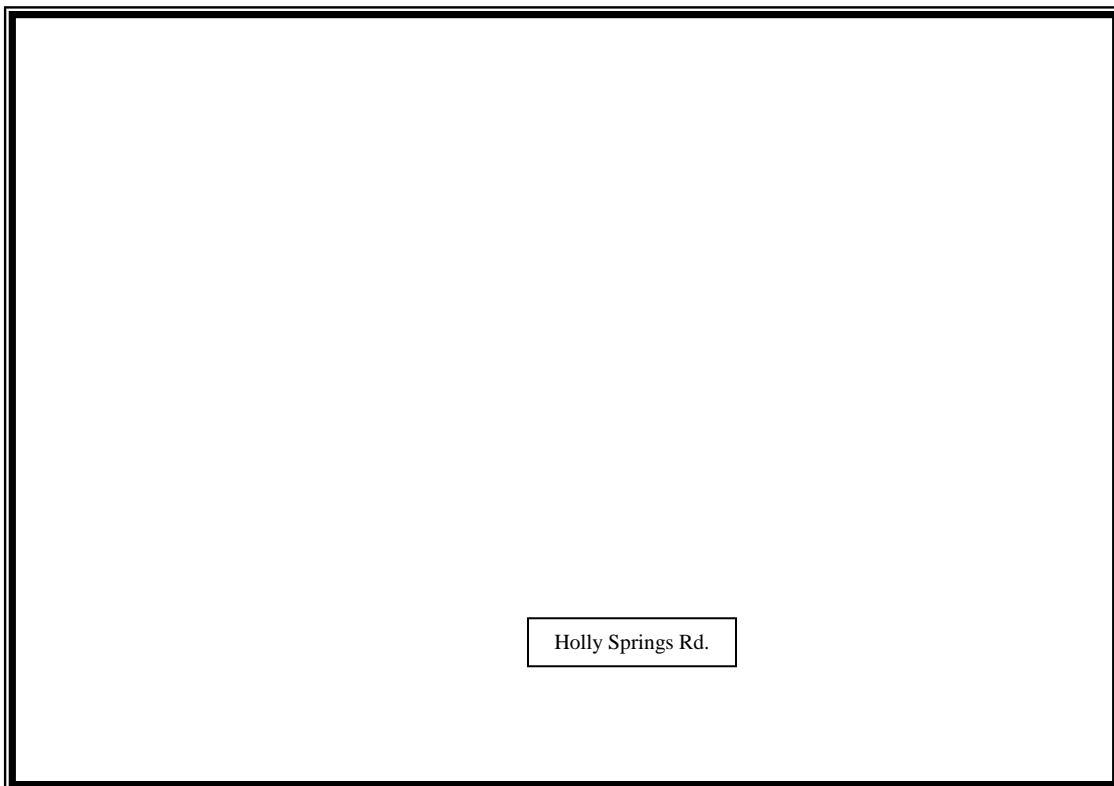
impacts and be provided with access to allow long term operation and maintenance of sanitary sewer outfalls or alternate means of access approved by the Director of Engineering.

10.05 TIGER SALAMANDER PRESERVATION AREA

In 1995, Tiger Salamanders (*Ambystoma tigrinum*) were found upstream of SR 1152 (Holly Springs Road) through environmental surveys associated with a Town project. In an effort to reduce the potential impacts to the tiger salamander population, the Town has compiled the following mitigative strategies which must be followed within the Tiger Salamander Preserve area for ensuring the long-term survival of this salamander population.

A. Future Utility Lines and Sewer Connections

Future utility lines and sewer connections that must traverse the preserve shall be carefully designed to avoid breeding pools, and land disturbance should be minimized. Sewer lines from multiple customers shall be connected to a common collector outside the preserve to minimize lines traversing the preserve. Please refer to map Figure A for the location of the preservation area.



B. Monitoring

Monitoring may be required for projects undertaken in or adjacent to the preserve area. Monitoring will consist of inspecting breeding pools during the winter and early spring for salamander eggs or larvae.

C. Conservation Easements

Permanent conservation easements will be required to preserve the Middle Creek floodplain and adjacent slopes from the sewer line corridor northward to the powerline/gasline right-of-way, and from SR 1152 westward to a north/south line approximately 400 feet west of Pool 15 shown on Figure B. This area encompasses approximately 45 acres.

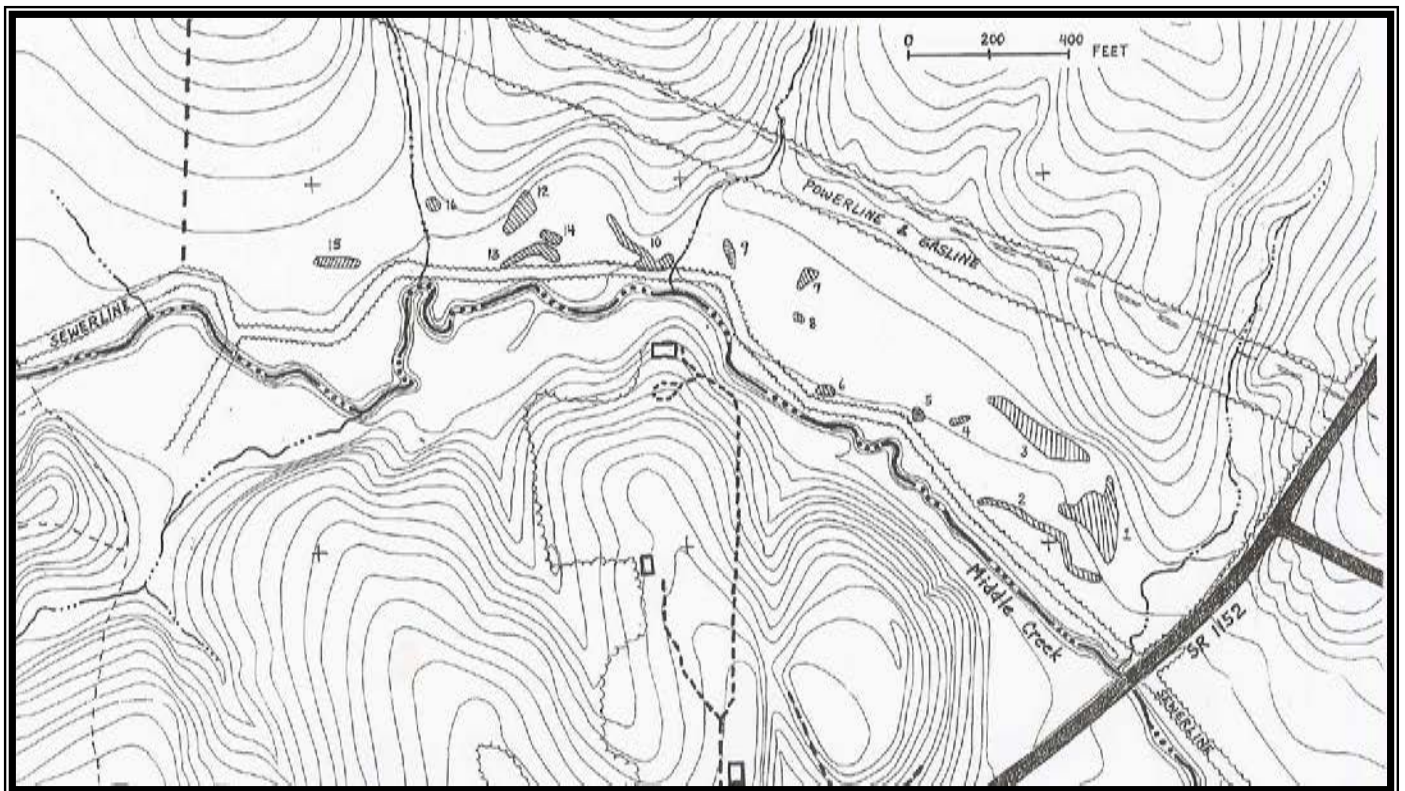


Figure B

10.06 RIPARIAN BUFFERS

All Land disturbance adjacent to perennial and intermittent streams must comply with both Town and State Riparian buffer regulations as contained in Section 7.06, D., 4., e. Environmental Buffer Areas and

Section 15A NCAC 02B.0233 Neuse River Basin: Nutrient Sensitive Waters Management Strategy: Protection and Maintenance of Existing Riparian Buffers. Tree protection strategies outlined in Section 10.02 of these standards must be utilized and the following items listed below may be required in the development process for development adjacent to the riparian areas.

A. Mitigation

Mitigation may be required by the Town for impact to those riparian buffer zones regulated by the Town, specifically NRB 3, CFB 1 and CFB 2 as described in the Table of Uses contained in Section 7.06D4e of the Unified Development Ordinance, or in conjunction with waivers approved by the Town of Holly Springs Town Council. Mitigation practices shall be in accordance with guidelines established by the North Carolina Department of Environment and Natural Resources, Division of Water Quality.

B. Diffuse Flow Requirements (stormwater BMP's)

Diffuse flow is required for water entering Zones CFB 2, NRB 2, and NRB 3. All devices shall be in accordance with design practices approved by the North Carolina Department of Environment and Natural Resources, Division of Water Quality.

10.07 TOWN OF HOLLY SPRINGS SECONDARY AND CUMULATIVE IMPACTS MASTER MANAGEMENT PLAN (SCIMMP)

A Certification by a registered professional engineer is required to be placed on the development plan to state that the project is in compliance with the most current version of the Town of Holly Springs SCIMMP. Additional design requirements or analysis may be required in areas identified to have significant secondary and cumulative impacts to the Town's natural resources.

END OF SECTION 10.00

