Article 11. Erosion Control and Stormwater Management

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Article 11. Erosion Control and Stormwater Management

Sec. 1101. Purpose of Article 11.

This Article contains the requirements that relate to the impact of rainfall events on the natural and manmade environment, including the erosion and siltation effects of site grading and land disturbance activities, the control of stormwater flows and the potential damaging effects of flooding.

Sec. 1102. Standards incorporated by reference.

Sec. 1102.01. **Stormwater management.**

The design, construction, operation and maintenance of the stormwater system, including stormwater detention facilities and all conveyances whether piped or open, shall conform to the provisions of the ***Georgia Stormwater Management Manual,*** published August 2001 and as may be amended by local addenda of City of Bogart from time to time, or as periodically updated or expanded based on improvements in science, engineering, monitoring or local maintenance experience.

Sec. 1102.02. **Owner responsibilities.**

Any property where erosion problems are resulting in sedimentation or where sediment leaves the property is in violation of this Development Code, regardless of whether construction activity is occurring or whether a permit has been issued.

a. Proper notice shall be considered a notice of the violation mailed via certified mail to the property owner's address on record with the City of Bogart Tax Assessor's office on the date of the violation.

b. Once proper notice has been issued, the property owner shall have five days to correct this violation.

DIVISION I. SOIL EROSION, SEDIMENTATION AND POLLUTION CONTROL.

Sec. 1103. Purpose and intent.

The purpose of this Section is to control erosion and sedimentation by requiring proper provisions for storm water runoff and the protection of soil surfaces during and after any land disturbing activity so as to promote the safety, public health and general welfare of the people of the City.

Sec. 1104. Definitions related to erosion, sedimentation and pollution control.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Best Management Practices (BMP's)—Erosion and Sedimentation Control*:* These include sound conservation and engineering practices to prevent and minimize erosion and resultant sedimentation, which are consistent with, and no less stringent than, those practices contained in the Manual for Erosion and Sediment Control in Georgia published by the Commission as of January 1 of the year in which the land-disturbing activity was permitted.

Buffer*:* The area of land immediately adjacent to the banks of state waters in its natural state of vegetation, which facilitates the protection of water quality and aquatic habitat.

Board*:* The Board of Natural Resources.

Certified Personnel*:* A person who has successfully completed the appropriate certification course approved by the Georgia Soil and Water Conservation Commission (GSWCC).

***Commission**:* The Georgia Soil and Water Conservation Commission (GSWCC).

***CPESC**:* Certified Professional in Erosion and Sediment Control with current certification by EnviroCert, Inc., which is also referred to as CPESC or CPESC, Inc.

***Cut**:* A portion of land surface or area from which earth has been removed or will be removed by excavation; the depth below original ground surface to the excavated surface. Also known as "excavation."

***Department**:* The Georgia Department of Natural Resources (DNR).

***Design Professional**:* A Professional licensed by the State of Georgia in the field of: engineering, architecture, landscape architecture, forestry, geology, or land surveying; or a person that is a Certified Professional in Erosion and Sediment Control (CPESC) with a current certification by EnviroCert, Inc. Design Professionals shall practice in a manner that complies with applicable Georgia law governing professional licensure.

***Development Permit**:* The authorization necessary to initiate and conduct a land-disturbing activity and to carry out the planned development of land and structures.

***Director**:* The Director of the Environmental Protection Division or an authorized representative.

***District**:* The Oconee River Soil and Water Conservation District.

***Division**:* The Environmental Protection Division (EPD) of the Department of Natural Resources.

***Drainage Structure**:* A device composed of a virtually nonerodible material such as concrete, steel, plastic or other such material that conveys water from one place to another by intercepting the flow and carrying it to a release point for storm-water management, drainage control or flood control purposes.

***EPD**:* The Environmental Protection Division of the Georgia Department of Natural Resources.

***EPD Director**:* The Director of the Environmental Protection Division of the Georgia Department of Natural Resources.

***Erosion**:* The process by which land surface is worn away by the action of wind, water, ice, or gravity.

***Erosion, Sedimentation and Pollution Control Plan**:* A plan required by the Erosion and Sedimentation Act, O.C.G.A. chapter 12-7, that includes, as a minimum protections at least as stringent as the State General Permit, best management practices, and requirements in Sec. 1106 of this Code.

***Fill**:* A portion of land surface to which soil or other solid material has been added; the depth above the original ground surface or an excavation.

***Final Stabilization**:* All soil disturbing activities at the site have been completed, and that for unpaved areas and areas not covered by permanent structures and areas located outside the waste disposal limits of a landfill cell that has been certified by EPD for waste disposal, 100% of the soil surface is uniformly covered in permanent vegetation with a density of 70% or greater, or landscaped according to the Plan (uniformly covered with landscaping materials in planned landscape areas), or equivalent permanent stabilization measures as defined in the Manual (excluding a crop of annual vegetation and seeding of target crop perennials appropriate for the region). Final Stabilization applies to each phase of construction.

***Finished Grade**:* The final elevation and contour of the ground after cutting or filling and conforming to the proposed design.

***Grading**:* Altering the shape of ground surfaces to a predetermined condition; this includes stripping, cutting, filling, stockpiling and shaping, or any combination thereof, and shall include the land in its cut or filled condition.

***Ground Elevation**:* The original elevation of the ground surface prior to cutting or filling.

***Land-Disturbing Activity**:* Any activity that may result in soil erosion from water or wind and the movement of sediments into state waters or onto lands within the state, including, but not limited to, clearing, dredging, grading, excavating, transporting and filling of land but not including those practices that are exempt under the Soil Erosion and Sedimentation Control provisions of this Development Code.

***Larger Common Plan of Development or Sale**:* A contiguous area where multiple, separate and distinct construction activities are or may be occurring at different times on different schedules under one plan of development or sale. For purposes of this paragraph, "plan" means an announcement; piece of documentation such as a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, or computer design; or physical demarcation such as boundary signs, lot stakes, or surveyor markings, indicating that construction activities may occur on a specific plot.

***Local Issuing Authority**:* The governing authority of any City or municipality which is certified pursuant to subsection (a) O.C.G.A. 12-7-8.

***Metropolitan River Protection Act (MRPA)**:* A state law referenced as O.C.G.A. 12-5-440 *et seq*., which addresses environmental and developmental matters in certain metropolitan river corridors and their drainage basins.

***Natural Ground Surface**:* The ground surface in its original state before any grading, excavation or filling.

***Nephelometric Turbidity Units (NTU)**:* Numerical units of measure based upon photometric analytical techniques for measuring the light scattered by finely divided particles of a substance in suspension. This technique is used to estimate the extent of turbidity in water in which colloidally dispersed particles are present.

***NOI**:* A Notice of Intent form provided by EPD for coverage under the State General Permit.

***NOT**:* A Notice of Termination form provided by EPD to terminate coverage under the State General Permit.

***One-Hundred-Year Flood Plain**:* A land area subject to a 1 percent or greater statistical occurrence probability of flooding in any given year.

***Operator**:* The party or parties that have: 1) operational control of construction project plans and specifications, including the ability to make modifications to those plans and specifications; or 2) day-to-day operational control of those activities that are necessary to ensure compliance with an erosion, sedimentation and pollution control plan for the site or other permit conditions, such as a person authorized to direct workers at a site to carry out activities required by the erosion, sedimentation and pollution control plan or to comply with other permit conditions.

***Outfall**:* The location where storm water in a discernible, confined and discrete conveyance, leaves a facility or site or, if there is a receiving water on site, becomes a point source discharging into that receiving water.

***Permit**:* the authorization necessary to conduct a land-disturbing activity under the provisions of this ordinance.

***Person**:* Any individual, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, state agency, municipality or other political subdivision of the State, any interstate body or other legal entity.

***Phase or Phased**:* Sub-parts or segments of construction projects where the sub-part or segment is constructed and stabilized prior to completing construction activities on the entire construction site.

***Project**:* 1) The entire proposed development project regardless of the size of the area of land to be disturbed. 2) For stormwater management, see "Land Development Project."

***Properly Designed**:* Designed in accordance with the design requirements and specification contained in the Manual for Erosion and Sediment Control in Georgia (Manual) published

by the Georgia Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted and amendments to the Manual as approved by the Commission up until the date of NOI submittal.

***Qualified Personnel**:* Any person who meets or exceeds the education and training requirements of O.C.G.A. 12-7-19.

***Roadway Drainage Structure**:* A device such as a bridge, culvert or ditch, composed of a virtually non-erodible material such as concrete, steel, plastic or other such material that conveys water under a roadway by intercepting the flow on one side of a traveled way consisting of one or more defined lanes, with or without shoulder areas, and carrying water to a release point on the other side.

***Sediment**:* Solid material, both organic and inorganic, that is in suspension, is being transported or has been moved from its site of origin by wind, water, ice or gravity as a product of erosion.

***Sedimentation**:* The process by which eroded material is transported and deposited by the action of water, wind, ice, or gravity.

***Soil & Water Commission**:* The State Soil and Water Conservation Commission.

***Soil and Water Conservation District Approved Plan**:* An erosion, sedimentation and pollution control plan approved in writing by the Oconee River Soil and Water Conservation District.

***Soil & Water District**:* The Oconee River Soil and Water Conservation District.

***Stabilization**:* The process of establishing an enduring soil cover of vegetation by the installation of temporary or permanent structures for the purpose of reducing to a minimum the erosion process and the resultant transport of sediment by wind, water, ice or gravity.

***State General Permit**:* The National Pollution Discharge Elimination System general permit or permits for storm-water runoff from construction activities as is now in effect or as may be amended or reissued in the future pursuant to the State's authority to implement the same through federal delegation under the Federal Water Pollution Control Act, as amended, 33 U.S.C. Section 1251, et seq., and subsection (f) of O.C.G.A. 12-5-30.

***State Waters**:* Any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs, wells, and other bodies of subsurface water, natural or artificial, lying within or forming a part of the boundaries of Georgia which are not entirely confined and retained completely upon the property of a single individual, partnership, or corporation.

***Stream Buffer**:* See "Buffer, Stream."

***Structural Erosion and Sedimentation Control Measures**:* Practices for the stabilization of erodible or sediment-producing areas by utilizing the mechanical properties of matter for the purpose of either changing the surface of the land or storing, regulating or disposing of runoff to prevent excessive sediment loss. Examples of structural erosion and sedimentation control practices are riprap, sediment basins, dikes, level spreaders, waterways or outlets, diversions, grade stabilization structures, and sediment traps, etc. Such practices can be found in the publication *Manual for Erosion and Sediment Control in Georgia*.

***Trout Streams**:* All streams or portions of streams within the watershed as designated by the Wildlife Resources Division of the Georgia Department of Natural Resources under the provisions of O.C.G.A. 12-5-20 et. seq., in the rulesand regulations for Water Quality Control, Chapter 391-3-6 at www.epd.georgia.gov. Streams designated as primary trout waters are defined as supporting a self-sustaining population of rainbow, brown or brook trout. Streams designated as secondary trout waters are those in which there is no evidence of natural trout reproduction, but are capable of supporting trout throughout the year. First order trout waters are streams into which no other streams flow except springs.

***Vegetative Erosion and Sedimentation Control Measures**:* Measures for the stabilization of erodible or sediment-producing areas by covering the soil with:

1. Permanent seeding, sprigging or planting, producing long-term vegetative cover; or
2. Temporary seeding, producing short-term vegetative cover; or
3. Sodding, covering areas with a turf of perennial sod-forming grass.

Such measures can be found in the publication *Manual for Erosion and Sediment Control in Georgia*.

***Watercourse**:* Any natural or artificial watercourse, stream, river, creek, channel, ditch, canal, conduit, culvert, drain, waterway, gully, ravine, or wash in which water flows either continuously or intermittently and which has a definite channel, bed and banks, and including any area adjacent thereto subject to inundation by reason of overflow or floodwater.

***Wetlands**:* Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

Sec. 1105. Exemptions.

This Section shall apply to any land-disturbing activity undertaken by any person on any land except for the following:

a. Surface mining, as same is defined in O.C.G.A. 12-4-72, "The Georgia Surface Mining Act of 1968";

b. Granite quarrying and land clearing for such quarrying;

c. Such minor land-disturbing activities as home gardens and individual home landscaping, repairs, maintenance work, fences and other related activities, which result in minor soil erosion;

d. The construction of single-family residences, when such construction disturbs less than one acre and is not a part of a larger common development plan or sale with a planned disturbance of equal to or greater than one acre and not otherwise exempted under this section; provided however, that construction of any such residence shall conform to the minimum requirements as set forth in O.C.G.A 12-7-6 and this paragraph. For single-family residence construction covered by the provisions of this paragraph, there shall be a buffer zone between the residence and any state waters classified as trout streams pursuant to Article 2 of Chapter 5 of the Georgia Water Quality Control Act. In any such buffer zone, no land-disturbing activity shall occur between the residence and the point where vegetation has been wrested by normal stream flow or wave action from the banks of the trout waters. For primary trout waters, the buffer zone shall be at least 50 horizontal feet, and no variance to a smaller buffer shall be granted. For secondary trout waters, the buffer zone shall be at least 50 horizontal feet, but the EPD Director may grant variances to no less than 25 feet. Regardless of whether a trout stream is primary or secondary, for first order trout waters, which are streams into which no other streams flow except for springs, the buffer shall be at least 25 horizontal feet, and no variance to a smaller buffer shall be granted. The minimum requirements of subsection (b) of Code section 12-7-6 and the buffer zones provided by this paragraph shall be enforced by the issuing authority;

e. Agricultural operations as defined in O.C.G.A. 1-3-3, "Definitions," to include those raising, harvesting, or storing of products of the field or orchard; feeding, breeding or managing livestock or poultry; producing or storing feed for use in the production of livestock, including but not limited to cattle, calves, swine, hogs, goats, sheep, and rabbits or for use in the production of poultry, including but not limited to chickens, hens and turkeys; producing plants, trees, fowl, or animals; the production of aqua culture, horticultural, dairy, livestock, poultry, eggs and apiarian product; farm buildings and farm ponds;

f. Forestry land management practices, including harvesting; provided, however, that when such exempt forestry practices cause or result in land disturbing or other activities otherwise prohibited in a stream buffer, as established in paragraphs (15) and (16) of Sec. 1106.01.b, no other land disturbing activities, except for normal forest management practices, shall be allowed on the entire property upon which the forestry practices were conducted for a period of three years after completion of such forestry practices;

g. Any project carried out under the technical supervision of the Natural Resources Conservation Service of the United States Department of Agriculture;

h. Any project involving less than one acre of disturbed area; provided, however, that this exemption shall not apply to any land-disturbing activity within a larger common plan of development or sale with a planned disturbance of equal to or greater than one acre or within 200 feet of the bank of any state waters. For purposes of this paragraph, "State Waters" excludes channels and drainageways which have water in them only during and immediately after rainfall events and intermittent streams which do not have water in them year-round; provided, however, that any person responsible for a project which involves less than one acre, which involves land-disturbing activity and which is within 200 feet of any such excluded channel or drainageway, must prevent sediment from moving beyond the boundaries of the property on which such project is located and provided, further, that nothing contained herein shall prevent the regulation of any such project that is not specifically exempted by any Subsection of this Sec. 1105;

i. Construction or maintenance projects, or both, undertaken or financed in whole or in part, or both, by the Georgia Department of Transportation, the Georgia Highway Authority or the State Tollway Authority; or any road construction or maintenance project, or both, undertaken by any county or municipality; provided, however, that construction or maintenance projects of Department of Transportation or State Tollway Authority which disturb one or more contiguous acres of land shall be subject to provisions of O.C.G.A. 12-7-7.1; except where the Department of Transportation or the Georgia Road Authority or State Tollway Authority is a secondary permittee for a project located within a larger common development plan or sale under the state general permit, in which case a copy of the notice of intent under the state general permit shall be submitted to City of Bogart and City of Bogart will enforce compliance with the minimum requirements set forth in O.C.G.A. 12-7-6 as if a permit had been issued and violations shall be subject to the same penalties as violations by permit holders;

j. Any land-disturbing activities conducted by any electric membership corporation or municipal electrical system or any public utility under the regulatory jurisdiction of the Public Service Commission, any utility under the regulatory jurisdiction of the Federal Energy Regulatory Commission, any cable television system as defined in O.C.G.A. 36-18-1, or any agency or instrumentality of the United States engaged in the generation, transmission or distribution of power; except where and electric membership corporation or municipal electric system or any public utility under the regulatory jurisdiction of the Public Service Commission, any utility under the regulatory jurisdiction of the Federal Energy Regulatory Commission, any cable television system as defined in O.C.G.A. 36-18-1, or any agency or instrumentality of the United Stated engaged in the generation, transmission or distribution of power is a secondary permittee for a project located in a larger common plan of development or sale under the state general permit, in which case City of Bogart will enforce compliance with the minimum requirements set forth in O.C.G.A. 12-7-6 as if a permit had been issued and violations shall be subject to the same penalties as violations by permit holders; and

k. Any public water system reservoir.

Sec. 1106. Minimum requirements for erosion, sedimentation and pollution control using best management practices.

Sec. 1106.01. General Provisions.

Excessive soil erosion and resulting sedimentation can take place during land-disturbing activities if requirements of the ordinance and the NPDES General Permit are not met.

Therefore, plans for those land-disturbing activities which are not exempted by this ordinance shall contain provisions for application of soil erosion, sedimentation and pollution control measures and practices. The provisions shall be incorporated into the erosion, sedimentation and pollution control plans. Soil erosion, sedimentation and pollution control measures and practices shall conform to the minimum requirements of this Section. The application of measures shall apply to all features of the site, including street and utility installations, drainage facilities and other temporary and permanent improvements. Measures shall be installed to prevent or control erosion, sedimentation and pollution during all stages of any land-disturbing activity in accordance with requirements of this ordinance and the NPDES General Permit.

a. Minimum requirements; best management practices.

(1) Best management practices, as set forth in Sec. 1106.01.a and Sec. 1106.01.b shall be required for all land-disturbing activities. Proper design, installation, and maintenance of best management practices shall constitute a complete defense to any action by City of Bogart or to any other allegation of noncompliance with this subsection or any substantially similar terms contained in a development permit for the discharge of stormwater issued pursuant to O.C.G.A. 12-5-30(f), the Georgia Water Quality Control Act. As used in this subsection, the terms "proper design" and "properly designed" mean designed in accordance with the hydraulic design specifications contained in the applicable *Manual for Erosion and Sediment Control in Georgia* specified in O.C.G.A. 12-7-6 subsection (b).

(2) A discharge of stormwater runoff from disturbed areas where best management practices have not been properly designed, installed and maintained shall constitute a separate violation of any land-disturbing permit issued by City of Bogart or of any state general permit for construction activities issued by EPD pursuant to O.C.G.A. 12-5-30(f), the Georgia Water Quality Control Act, for each day on which such discharge results in the turbidity of receiving waters being increased by more than 25 nephelometric turbidity units for waters supporting warm water fisheries or by more than 10 nephelometric turbidity units for waters classified as trout streams. The turbidity of the receiving waters shall be measured in accordance with guidelines issued by the EPD Director. This paragraph shall not apply to any land disturbance associated with the construction of single family homes which are not part of a larger common plan of development or sale unless the planned disturbance for such construction is equal to or greater than five acres.

(3) Failure to properly design, install or maintain best management practices shall constitute a violation of any development permit issued by City of Bogart or of any state general permit issued by EPD pursuant to O.C.G.A. 12-5-30(f), the Georgia Water Quality Control Act, for each day on which such failure occurs.

(4) The EPD Director may require, in accordance with regulations adopted by the Board of Natural Resources, reasonable and prudent monitoring of the turbidity level of receiving waters into which discharges from land-disturbing activities occur.

(5) The LIA may set more stringent buffer requirements than stated in Sec. 1106.01.b(15) & (16) in this Code, in light of O.C.G.A. 12-7-6 (c).

b. Minimum requirements for erosion, sedimentation and pollution and sedimentation control; specific.

The rules and regulations, ordinances adopted pursuant to O.C.G.A. 12-7-1 et. seq. for the purpose of governing land-disturbing activities shall require, as a minimum, protections at least as stringent as the State General Permit, and best management practices, including sound conservation and engineering practices to prevent and minimize erosion and resultant sedimentation, which are consistent with, and no less stringent than, those practices contained in the *Manual for Erosion and Sediment Control in Georgia* published by the Georgia Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted, as well as the following:

(1) Stripping of vegetation, re-grading and other development activities shall be conducted in a manner so as to minimize erosion.

(2) Cut-fill operations must be kept to a minimum.

(3) Development plans must conform to topography and soil type so as to create the lowest practical erosion potential.

(4) Whenever feasible, natural vegetation shall be retained, protected and supplemented.

(5) The disturbed area and the duration of exposure to erosive elements shall be kept to a practicable minimum.

(6) Disturbed soil shall be stabilized as quickly as practical.

(7) Temporary vegetation or mulching shall be employed to protect exposed critical areas during development.

(8) Permanent vegetation and structural erosion control measures shall be installed as soon as practical.

(9) To the extent necessary, sediment in run-off water must be trapped by the use of debris basins, sediment basins, silt traps or similar measures until the disturbed area is stabilized. As used in this paragraph, a disturbed area is stabilized when it is brought to a condition of continuous compliance with the requirements of O.C.G.A. 12-7-1 *et. seq*.

(10) Adequate provisions must be provided to minimize damage from surface water to the cut face of excavations or the sloping surface of fills.

(11) Cuts and fills may not endanger adjoining property.

(12) Fills may not encroach upon natural watercourses or constructed channels in a manner so as to adversely affect other property owners.

(13) Grading equipment must cross-flowing streams by means of bridges or culverts except when such methods are not feasible and provided, in any case, that such crossings are kept to a minimum.

(14) Land-disturbing activity plans for erosion, sedimentation and pollution control shall include provisions for treatment or control of any source of sediments and adequate sedimentation control facilities to retain sediments on-site or preclude sedimentation of adjacent waters by more than 25 nephelometric turbidity units for waters supporting warm water fisheries or by more than 10 nephelometric turbidity units for waters classified as trout streams.

(15) Except as provided in Sec. 1106.01.b paragraphs 15 and 16, and the Environmental Protection Article of this Code relating to stream buffers and conservation corridors, there is established a 25 foot stream buffer along the banks of all state waters, as measured horizontally from the point where vegetation has been wrested by normal stream flow or wave action except where the EPD Director determines to allow a variance that is at least as protective of natural resources and the environment, where otherwise allowed by the EPD Director pursuant to O.C.G.A. 12-2-8, or where a drainage structure or a roadway drainage structure must be constructed, provided that adequate erosion control measures are incorporated in the project plans and specifications, and are implemented; or along any ephemeral stream. As used in this provision, the term "ephemeral stream" means a stream: that under normal circumstances has water flowing only during and for a short duration after precipitation events; that has the channel located above the ground water table year round; for which ground water is not a source of water flow. Unless exempted as along an ephemeral stream, the buffers of at least 25 feet established pursuant to part 6 of Article 5, Chapter 5 of Title 12, the Georgia Water Quality Control Act, shall remain in force unless a variance is granted by the Director as provided in this paragraph. The following requirements shall apply to any such buffer:

(a) No land-disturbing activities shall be conducted within a stream buffer and a stream buffer shall remain in its natural, undisturbed state of vegetation until all land-disturbing activities on the construction site are completed. Once the final stabilization of the site is achieved, a buffer may be thinned or trimmed of vegetation as long as a protective vegetative cover remains to protect water quality and aquatic habitat and a natural canopy is left in sufficient quantity to keep shade on the stream bed; provided, however, that any person constructing a single-family residence, when such residence is constructed by or under contract with the owner for his or her own occupancy, may thin or trim vegetation in a buffer at any time as long as protective vegetative cover remains to protect water quality and aquatic habitat and a natural canopy is left in sufficient quantity to keep shade on the stream bed; and

(b) The stream buffer shall not apply to the following land-disturbing activities, provided that they occur at an angle, as measured from the point of crossing, within 25 degrees of perpendicular to the stream; cause a width of disturbance of not more than 50 feet within the buffer; and adequate erosion control measures are incorporated into the project plans and specifications and are implemented:

i. Stream crossings for water lines; or

ii. Stream crossings for sewer lines.

(16) There is established a 50 foot stream buffer as measured horizontally from the point where vegetation has been wrested by normal stream flow or wave action, along the banks of any state waters classified as "trout streams" pursuant to Article 2 of Chapter 5 of Title 12, the "Georgia Water Quality Control Act", except where a roadway drainage structure must be constructed; provided, however, that small springs and streams classified as trout streams which discharge an average annual flow of 25 gallons per minute or less shall have a 25 foot buffer or they may be piped, at the discretion of the landowner, pursuant to the terms of a rule providing for a general variance promulgated by the Board, so long as any such pipe stops short of the downstream landowner's property and the landowner complies with the buffer requirement for any adjacent trout streams. The Director may grant a variance from such buffer to allow land-disturbing activity, provided that adequate erosion control measures are incorporated in the project plans and specifications and are implemented. The following requirements shall apply to such buffer:

(a) No land-disturbing activities shall be conducted within a stream buffer and a stream buffer shall remain in its natural, undisturbed, state of vegetation until all land-disturbing activities on the construction site are completed. Once the final stabilization of the site is achieved, a buffer may be thinned or trimmed of vegetation as long as a protective vegetative cover remains to protect water quality and aquatic habitat and a natural canopy is left in sufficient quantity to keep shade on the stream bed: provided, however, that any person constructing a single–family residence, when such residence is constructed by or under contract with the owner for his or her own occupancy, may thin or trim vegetation in a buffer at any time as long as protective vegetative cover remains to protect water quality and aquatic habitat and a natural canopy is left in sufficient quantity to keep shade on the stream bed; and

(b) The stream buffer shall not apply to the following land-disturbing activities, provided that they occur at an angle, as measured from the point of crossing, within 25 degrees of perpendicular to the stream; cause a width of disturbance of not more than 50 feet within the buffer; and adequate erosion control measures are incorporated into the project plans and specifications and are implemented:

i. Stream crossings for water lines; or

ii. Stream crossings for sewer lines.

c. Nothing contained in O.C.G.A. 12-7-1 et. seq. shall prevent any Local Issuing Authority from adopting rules and regulations, ordinances, or resolutions which contain stream buffer requirements that exceed the minimum requirements in Sec. 1106.01.a and Sec. 1106.01.b of this Code.

d. The fact that land-disturbing activity for which a permit has been issued results in injury to the property of another shall neither constitute proof of nor create a presumption of a violation of the standards provided for in this ordinance or the terms of the permit.

Sec. 1107. Application/permit process.

Sec. 1107.01. General.

The property owner, developer and designated planners and engineers shall design and review before submittal the general development plans. The Local Issuing Authority shall review the tract to be developed and the area surrounding it. They shall consult this Development Code and other ordinances that regulate the development of land within the jurisdictional boundaries of the Local Issuing Authority. However, the operator is the only party who may obtain a permit.

Sec. 1107.02. Application requirements.

a. No person shall conduct any land-disturbing activity within the jurisdictional boundaries of the City of Bogart without first obtaining a permit from the Planning Department to perform such activity and providing a copy of Notice of Intent submitted to EPD if applicable.

b. The application for a permit shall be submitted to the Planning Department and must include the applicant's erosion, sedimentation and pollution control plan with supporting data, as necessary. Said plans shall include, as a minimum, the data specified in Sec. 1107.03 of this Article. Soil erosion, sedimentation and pollution control plans shall conform to the provisions of Sec. 1106.01.a and Sec. 1106.01.b of this Article. Applications for a permit will not be accepted unless accompanied by 3 three copies of the applicant's soil erosion, sedimentation and pollution control plans. All applications shall contain a certification stating that the plan preparer or the designee thereof visited the site prior to creation of the plan or that such a visit was not required in accordance with EPD Rule 391-3-7-10.

c. A fee, in the amount of $250 up to 50 lots, $350 from 51 up to 100 lots, $400 from 101 to 150 lots and $500 from 151 lots and up shall be charged for each acre or fraction thereof in the project area.

d. In addition to the local permitting fees, fees will also be assessed pursuant to paragraph (5) subsection (a) of O.C.G.A. 12-5-23, provided that such fees shall not exceed $80.00 per acre of land-disturbing activity, and these fees shall be calculated and paid by the primary permittee as defined in the state general permit for each acre of land-disturbing activity included in the planned development or each phase of development. All applicable fees shall be paid prior to issuance of the land disturbance permit. In a jurisdiction that is certified pursuant to subsection (a) of O.C.G.A. 12-7-8 half of such fees levied shall be submitted to the division; except that any and all fees due from an entity which is required to give notice pursuant to paragraph (9) or (10) of O.C.G.A. 12-7-17 shall be submitted in full to the division, regardless of the existence of a local issuing authority in the jurisdiction.

e. Immediately upon receipt of an application and plan for a permit, the Local Issuing Authority shall refer the application and plan to the Soil & Water District for its review and approval or disapproval concerning the adequacy of the erosion, sedimentation and pollution control plan. A Soil & Water District shall approve or disapprove a plan within 35 days of receipt. Failure of a Soil & Water District to act within 35 days shall be considered an approval of the pending plan. The results of the Soil & Water District review shall be forwarded to the Local Issuing Authority. No permit will be issued unless the plan has

been approved by the Soil & Water District, and any variances required by Sec. 1106.01.b paragraphs 15 and 16 are obtained, and bonding requirements, if necessary, as per Sec. 1107.02.g, have been met. Such review will not be required if the Local Issuing Authority and the Soil & Water District have entered into an agreement which allows the Local Issuing Authority to conduct such review and approval of the plan without referring the application and plan to the Soil & Water District.

f. If a permit applicant has had two or more violations of previous permits, this ordinance section, or the Erosion and Sedimentation Act, as amended, within three years prior to the date of filing of the application under consideration, the Local Issuing Authority may deny the permit application.

g. The Local Issuing Authority may require the permit applicant to post a bond in the form of government security, cash, irrevocable letter of credit, or any combination thereof up to, but not exceeding, $3,000.00 per acre or fraction thereof of the proposed land-disturbing activity, prior to issuing the permit. If the applicant does not comply with this Development Code or with the conditions of the permit after issuance, the Local Issuing Authority may call, the bond or any part thereof to be forfeited and may use the proceeds to hire a contractor to stabilize the site of the land-disturbing activity and bring it into compliance. These provisions shall not apply unless there is in effect an ordinance or statute specifically providing for hearing and judicial review of any determination or order of the Local Issuing Authority with respect to alleged permit violations.

Sec. 1107.03. **Plan requirements.**

a. Plans must be prepared to meet the minimum requirements as contained in Sec. 1106.01.a and Sec. 1106.01.b of this Article. Conformance with the minimum requirements may be attained through the use of design criteria in the current issue of the Manual for Erosion and Sediment Control in Georgia, published by the State Soil and Water Conservation Commission as a guide; or through the use of more stringent, alternate design criteria which conform to sound conservation and engineering practices. The Manual for Erosion and Sediment Control in Georgia is hereby incorporated by reference into this ordinance. The plan for the land-disturbing activity shall consider the interrelationship of the soil types, geological and hydrological characteristics, topography, watershed, vegetation, proposed permanent structures including roadways, constructed waterways, sediment control and storm water management facilities, local ordinances and State laws.

b. Data required for erosion, sedimentation and pollution control plan shall include all the information required from the appropriate Erosion, Sedimentation and Pollution Control Plan Review Checklist established by the Commission as of January 1 of the year in which the land disturbing activity was permitted.

Sec. 1107.04. **Permits.**

a. Permits shall be issued or denied as soon as practicable but in any event not later than 45 days after receipt by the Local Issuing Authority of a completed application, providing variances and bonding are obtained, where necessary and all applicable fees have been paid prior to permit issuance. The permit shall include conditions under which the activity may be undertaken.

b. No permit shall be issued by the Local Issuing Authority unless the erosion, sedimentation and pollution control plan has been approved by the Soil & Water District and the Local Issuing Authority has affirmatively determined that the plan is in compliance with this ordinance, any variances required by Sec. 1106.01.b paragraphs 15 and 16 are obtained, and bonding requirements, if necessary, as per Sec. 1107.02.g, are met. If the permit is denied, the reason for denial shall be furnished to the applicant.

c. Any land-disturbing activities by a local issuing authority shall be subject to the same requirements of this ordinance, and any other ordinances relating to land development, as are applied to private persons and the division shall enforce such requirements upon the local issuing authority.

d. If the tract is to be developed in phases, then a separate permit shall be required for each phase.

e. The permit may be suspended, revoked, or modified by the Local Issuing Authority, as to all or any portion of the land affected by the plan, upon finding that the holder or his successor in the title is not in compliance with the approved erosion and sedimentation control plan or that the holder or his successor in title is in violation of this Development Code. A holder of a permit shall notify any successor in title to him as to all or any portion of the land affected by the approved plan of the conditions contained in the permit.

f. The LIA may reject a permit application if the applicant has had two or more violations of previous permits or the Erosion and Sedimentation Act permit requirements within three years prior to the date of the application, in light of O.C.G.A. 12-7-7 (f) (1).

Sec. 1108. Inspection and enforcement.

a. The Planning Department will periodically inspect the sites of land-disturbing activities for which permits have been issued to determine if the activities are being conducted in accordance with the plan and if the measures required in the plan are effective in controlling erosion and sedimentation. Also, the Local Issuing Authority shall regulate primary, secondary, and tertiary permittees as such terms are defined in the state general permit. Primary permittees shall be responsible for installation and maintenance of best management practices where the primary permittee is conducting land-disturbing activities. Secondary permittees shall be responsible for installation and maintenance of best management practices where the secondary permittee is conducting land-disturbing activities. Tertiary permittees shall be responsible for installation and maintenance of best management practices where the tertiary permittee is conducting land-disturbing activities. If, through inspection, it is deemed that a person engaged in land-disturbing activities as defined herein has failed to comply with the approved plan, with permit conditions, or with the provisions of this ordinance, a written notice to comply shall be served upon that person. The notice shall set forth the measures necessary to achieve compliance and shall state the time within which such measures must be completed. If the person engaged in the land-disturbing activity fails to comply within the time specified, he shall be deemed in violation of this ordinance.

b. The Planning Department shall have the power to conduct such investigations as it may reasonably deem necessary to carry out duties as prescribed in this ordinance, and for this purpose to enter at reasonable times upon any property, public or private, for the purpose of investigation and inspecting the sites of land-disturbing activities.

c. No person shall refuse entry or access to any authorized representative or agent of the Local Issuing Authority, the Soil & Water Commission, the Soil & Water District, or Division who requests entry for the purposes of inspection, and who presents appropriate credentials, nor shall any person obstruct, hamper or interfere with any such representative while in the process of carrying out his official duties.

d. The Soil & Water Districts or the Soil & Water Commission or both shall periodically review the actions of counties and municipalities which have been certified as Local Issuing Authorities pursuant to O.C.G.A. 12-7-8 (a). The Soil & Water Districts or the Soil & Water Commission or both may provide technical assistance to any county or municipality for the purpose of improving the effectiveness of the county's or municipality's erosion and sedimentation control program. The Soil & Water Districts or the Soil & Water Commission shall notify the Division and request investigation by the Division if any deficient or ineffective local program is found.

e. The Board, on or before December 31, 2003, shall promulgate rules and regulations setting forth the requirements and standards for certification and the procedures for decertification of a local issuing authority. The Division may periodically review the actions of counties and municipalities which have been certified as Local Issuing Authorities pursuant to Code Section 12-7-8 (a). Such review may include, but shall not be limited to, review of the administration and enforcement of a governing authority's ordinance and review of conformance with an agreement, if any, between the Soil & Water District and

the governing authority. If such review indicates that the governing authority of any county or municipality certified pursuant to O.C.G.A. 12-7-8 (a) has not administered or enforced its ordinances or has not conducted the program in accordance with any agreement entered into pursuant to O.C.G.A. 12-7-7 (e), the Division shall notify the governing authority of the county or municipality in writing. The governing authority of any county or municipality so notified shall have 30 days within which to take the necessary corrective action to retain certification as a Local Issuing Authority. If the county or municipality does not take necessary corrective action within 30 days after notification by the division, the division may revoke the certification of the county or municipality as a Local Issuing Authority.

Sec. 1109. Penalties and incentives.

Sec. 1109.01. **Failure to obtain a permit for land-disturbing activity.**

If any person commences any land-disturbing activity requiring a land-disturbing permit as prescribed in this ordinance without first obtaining said permit, the person shall be subject to revocation of his business license, work permit or other authorization for the conduct of a business and associated work activities within the jurisdictional boundaries of the Local Issuing Authority.

Sec. 1109.02. **Stop-work orders.**

a. For the first and second violations of the provisions of this ordinance, the Director or the Local Issuing Authority shall issue a written warning to the violator. The violator shall have five days to correct the violation. If the violation is not corrected within five days, the Director or the Local Issuing Authority shall issue a stop-work order requiring that land-disturbing activities be stopped until necessary corrective action or mitigation has occurred; provided, however, that, if the violation presents an imminent threat to public health or waters of the state or if the land-disturbing activities are conducted without obtaining the necessary permit, the Director or the Local Issuing Authority shall issue an immediate stop-work order in lieu of a warning;

b. For a third and each subsequent violation, the Director or the Local Issuing Authority shall issue an immediate stop-work order; and;

c. All stop-work orders shall be effective immediately upon issuance and shall be in effect until the necessary corrective action or mitigation has occurred;

d. When a violation in the form of taking action without a permit, failure to maintain a stream buffer, or significant amounts of sediment, as determined by the local issuing authority or by the Director or his or her Designee, have been or are being discharged into state waters and where best management practices have not been properly designed, installed, and maintained, a stop work order shall be issued by the local issuing authority or by the director or his or her designee. All such stop work orders shall be effective immediately upon issuance and shall be in effect until the necessary corrective action or mitigation has occurred. Such stop work orders shall apply to all land-disturbing activity on the site with the exception of the installation and maintenance of temporary or permanent erosion and sediment controls.

Sec. 1109.03. **Bond forfeiture.**

If, through inspection, it is determined that a person engaged in land-disturbing activities has failed to comply with the approved plan, a written notice to comply shall be served upon that person. The notice shall set forth the measures necessary to achieve compliance with the plan and shall state the time within which such measures must be completed. If the person engaged in the land-disturbing activity fails to comply within the time specified, he shall be deemed in violation of this ordinance and, in addition to other penalties, shall be deemed to have forfeited his performance bond, if required to post one under the provisions of Sec. 1107.02.g. The Local Issuing Authority may call the bond or any part thereof to be forfeited and may use the proceeds to hire a contractor to stabilize the site of the land-disturbing activity and bring it into compliance.

Sec. 1109.04. **Monetary penalties.**

Any person who violates any provisions of this ordinance, or any permit condition or limitation established pursuant to this ordinance, or who negligently or intentionally fails or refuses to comply with any final or emergency order of the Director issued as provided in this ordinance shall be liable for a civil penalty not to exceed $2,500.00 per day. For the purpose of enforcing the provisions of this ordinance, notwithstanding any provisions in any City charter to the contrary, municipal courts shall be authorized to impose penalty not to exceed $2,500.00 for each violation. Notwithstanding any limitation of law as to penalties which can be assessed for violations of City ordinances, any magistrate court or any other court of competent jurisdiction trying cases brought as violations of this ordinance under City ordinances approved under this ordinance shall be authorized to impose penalties for such violations not to exceed $2,500.00 for each violation. Each day during which violation or failure or refusal to comply continues shall be a separate violation.

Sec. 1110. Education and certification.

a. After December 31, 2006, all persons involved in land development design, review, permitting, construction, monitoring, or inspection or any land-disturbing activity shall meet the education and training certification requirements, dependent on their level of involvement with the process, as developed by the State Soil and Water Conservation Commission in consultation with the EPD and the Stakeholder Advisory Board created pursuant to O.C.G.A. 12-7-20.

b. For each site on which land-disturbing activity occurs, each entity or person acting as either a primary, secondary, or tertiary permittee, as defined in the state general permit, shall have as a minimum one person who is in responsible charge of erosion and sedimentation control activities on behalf of said entity or person and meets the applicable education or training certification requirements developed by the Commission present on site whenever land-disturbing activities are conducted on that site. A project site shall herein be defined as any land-disturbance site or multiple sites within a larger common plan of development or sale permitted by an owner or operator for compliance with the state general permit.

c. Persons or entities involved in projects not requiring a state general permit but otherwise requiring certified personnel on site may contract with certified persons to meet the requirements of this ordinance.

d. If a state general permittee who has operational control of land-disturbing activities for a site has met the certification requirements of paragraph (1) of subsection (b) of O.C.G.A. 12-7-19, then any person or entity involved in land-disturbing activity at that site and operating in a subcontractor capacity for such permittee shall meet those educational requirements specified in paragraph (4) of subsection (b) of O.C.G.A 12-7-19 and shall not be required to meet any educational requirements that exceed those specified in said paragraph.

DIVISION II. STORM DRAINAGE & STORMWATER MANAGEMENT.

Sec. 1111. Purpose and intent.

The purpose of this Division is to protect, maintain, and enhance the public health, safety, environment, and general welfare of the citizens of City of Bogart, Georgia by: the regulation of non-stormwater discharges to the storm drainage system to the maximum extent practicable as required by federal and state law; establishing minimum requirements and procedures to control the adverse effects of increased post-development stormwater runoff and nonpoint source pollution associated with new development and redevelopment; and establishing inspection and maintenance requirements for existing privately owned detention facilities in the area of the City regulated under the National Pollutant Discharge Elimination System (NPDES) Stormwater Phase II Permit. It has been determined that proper management of stormwater runoff will minimize damage to public and private property and infrastructure, safeguard the public health, safety, environment and general welfare of the public, and protect water and aquatic resources. The objectives of this Division are:

a. Regulate the contribution of pollutants to the City of Bogart separate storm sewer system by stormwater discharges by any user;

b. Prohibit illicit connections and discharges to the City of Bogart separate storm sewer system;

c. Require that drainage easements are maintained in a proper manner;

d. Establish design and application criteria for the construction and use of structural stormwater control facilities that can be used to meet the minimum post-development stormwater management standards;

e. Establish legal authority to carry out all inspection procedures necessary to ensure compliance with this Division.

f. Establish provisions for the long-term responsibility for and maintenance of structural stormwater control facilities and nonstructural stormwater management practices to ensure that they continue to function as designed, are maintained, and pose no threat to public safety.

g. In addition, for the area of the City regulated under the National Pollutant Discharge Elimination System (NPDES) Stormwater Phase II Permit and areas identified in Sec. 1113.d:

    (1) Establish decision-making processes surrounding land development activities that protect the integrity of the watershed and preserve the health of water resources;

    (2) Require that new development and redevelopment maintain the pre-development hydrologic response in their post-development state as nearly as practicable in order to reduce flooding, stream bank erosion, nonpoint source pollution and increases in stream temperature, and maintain the integrity of stream channels and aquatic habitats;

    (3) Establish minimum post-development stormwater management standards and design criteria for the regulation and control of stormwater runoff quantity and quality; and,

    (4) Encourage the use of nonstructural stormwater management and stormwater better site design practices, such as the preservation of greenspace and other conservation

h. To promote the natural beauty and aesthetic qualities of City of Bogart.

Sec. 1112. Definitions related to storm drainage and stormwater management.

For the purposes of this Division, the following shall mean:

Beneficial Owner(s): All property owners in a subdivision that derive benefit from a stormwater management facility, detention facility, retention facility, or drainage easement may be considered owners of that facility or easement.

Best Management Practices (BMPs)—Stormwater Management: Schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

Channel: A natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water.

Clean Water Act: The federal Water Pollution Control Act (33 U.S.C § 1251 et seq.), and any subsequent amendments thereto.

Construction Activity: Activities subject to the Georgia Erosion and Sedimentation Control Act or NPDES Construction Permits. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

Detention: The temporary storage of stormwater runoff in a stormwater management facility for the purpose of controlling the peak discharge.

Detention Facility: A basin or structure used for the temporary storage of stormwater runoff for the purpose of controlling the peak discharge and which is designed to completely drain after a specified period of time.

Developer: A person who undertakes land development activities.

Drainage Easement: An easement appurtenant or attached to a tract or parcel of land allowing the owner of adjacent tracts or other persons to discharge stormwater runoff onto the tract or parcel of land subject to the drainage easement.

Georgia D.O.T. Standards/Specifications: State of Georgia Standard Specifications – Construction of Transportation Systems, latest edition.

Georgia Stormwater Management Manual, Volume 2: Technical Handbook, produced as a result of a collaborative effort between the Atlanta Regional Commission (ARC), the Georgia Department of Natural Resources-Environmental Protection Division (EPD), and 35 cities and counties from across Georgia that provides guidance on the techniques and measures that can be implemented to meet a set of stormwater management minimum standards for new development and redevelopment, as amended from time to time.

Greenspace: Permanently protected areas of the site that are preserved in a natural state. See also under "Open Space."

Hazardous Materials: Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Hotspot: A land use or activity on a site that produces higher concentrations of trace materials, hydrocarbons or other pollutants than are normally found in urban stormwater runoff. Examples of hotspots include, but are not limited to: gas stations, vehicle service and maintenance areas, salvage yards, material storage sites, garbage transfer facilities, and commercial parking lots with high-intensity use.

Illegal Connection: An illegal connection is defined as either of the following:

1. Any pipe, open channel, drain or conveyance, whether on the surface or subsurface, which allows an illicit discharge to enter the storm drain system including but not limited to any conveyances which allow any non-stormwater discharge including sewage, process wastewater, and wash water, regardless of whether said drain or connection has been previously allowed, permitted, or approved by an authorized enforcement agency; or
2. Any pipe, open channel, drain or conveyance connected to the City of Bogart separate storm sewer system that has not been documented in plans, maps or equivalent records and approved by an authorized enforcement agency.

Illicit Discharge: Any direct or indirect non-stormwater discharge to the City of Bogart storm drain system, except as exempted in the Storm Drainage and Stormwater Management Division of the Erosion Control and Stormwater Management Article of this Development Code.

Impervious Cover: A surface composed of any material that significantly impedes or prevents the natural infiltration of water into soil. Impervious surfaces include, but are not limited to, rooftops, buildings, streets and roads, disturbed and compacted soil, and any concrete or asphalt surface.

Industrial Activity: Activities subject to NPDES Industrial Permits as defined in 40CFR, Section 122.26 (b) (14).

Inspection and Maintenance Agreement: A written agreement providing for the long-term inspection and maintenance of stormwater management facilities and practices on a site or with respect to a land development project, which when properly recorded in the deed records, constitutes a restriction on the title to a site or other land involved in a land development project.

Land Development: Any land change, including, but not limited to, clearing, digging, grubbing, stripping, removal of vegetation, dredging, grading, excavating, transporting and filling of land, construction, paving, and any other installation of impervious cover.

Land Development Activities: Those actions or activities that comprise, facilitate, or result in land development.

Land Development Project: A discrete land development undertaking.

National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit: A permit issued by Georgia EPD under authority delegated pursuant to 33 USC § 1342 (b) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

New Development: A land development activity on a previously undeveloped site.

Nonpoint Source Pollution: A form of water pollution that does not originate from a discrete point such as a sewage treatment plant or industrial discharge, but involves the transport of pollutants such a sediment, fertilizers, pesticides, heavy metals, oil, grease, bacteria, organic materials and other contaminants from land to surface water and groundwater via mechanisms such as precipitation, stormwater runoff, and leaching. Nonpoint source pollution is a by-product of land use practices such as agricultural, silvicultural, mining, construction, subsurface disposal and urban runoff sources.

Non-Stormwater Discharge: Any discharge to the storm drain system that is not composed entirely of stormwater.

Nonstructural Stormwater Management Practice or Nonstructural Practice: Any natural or planted vegetation or any other nonstructural component of the stormwater management plan that provides for or enhances stormwater quantity and/or quality control or other stormwater management benefits, and includes, but is not limited to, riparian buffers, open and greenspace areas, overland flow filtration areas, natural depressions, and vegetated channels.

Non-Urbanized Area: The area of the City of Bogart not regulated under the National Pollutant Discharge Elimination System (NPDES) Stormwater Phase II Permit.

City of Bogart Separate Storm Sewer System: Any facility, owned or maintained by the City, designed or used for collecting and/or conveying stormwater, including but not limited to roads with drainage systems, City of Bogart streets, curbs, gutters, inlets, catch basins, piped storm drains, pumping facilities, retention and detention basins, natural and man-made or altered drainage channels, reservoirs, and other drainage structures.

Pollutant: Anything that causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; petroleum hydrocarbons; automotive fluids; cooking grease; detergents (biodegradable or otherwise); degreasers; cleaning chemicals; non-hazardous liquid and solid wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; liquid and solid wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; concrete and cement; and noxious or offensive matter of any kind.

Pollution: Contamination or other alteration of any water's physical, chemical, or biological properties by addition of any constituent including but not limited to a change in temperature, taste, color, turbidity, or odor of such waters, or the discharge of any liquid, gaseous, solid, radioactive, or other substance into any such waters as will or is likely to create a nuisance or render such waters harmful, detrimental, or injurious to the public health, safety, welfare, or environment, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life.

Post-development: The time period, or the conditions that may reasonably be expected or anticipated to exist, after completion of the land development activity on a site as the context may require.

Pre-development: The time period, or the conditions that exist, on a site prior to the commencement of a land development project and at the time that plans for the land development of a site are approved by City of Bogart. Where phased development or plan approval occurs (preliminary grading, roads and utilities, etc.), the existing conditions at the time prior to the first element of construction and/or phase being approved or permitted shall establish pre-development conditions.

Premises: Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

Redevelopment: A land development project on a previously developed site, but excludes ordinary maintenance activities, remodeling of existing buildings, resurfacing of paved areas, and exterior changes or improvements which do not materially increase or concentrate stormwater runoff, or cause additional nonpoint source pollution.

Retention Facility: A basin or structure designed to contain a permanent pool of water with sufficient freeboard to provide for temporary storage and water quality treatment of stormwater runoff.

Site: The parcel of land being developed, or the portion thereof on which the land development project is located.

Stormwater: Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

Stormwater Better Site Design: Nonstructural site design approaches and techniques that can reduce a site's impact on the watershed and can provide for nonstructural stormwater management. Stormwater better site design includes conserving and protecting natural areas and greenspace, reducing impervious cover and using natural features for stormwater management.

Stormwater Discharge: The flow rate of surface water resulting from precipitation.

Stormwater Management: The collection, conveyance, storage, treatment and disposal of stormwater runoff in a manner intended to prevent increased flood damage, stream bank channel erosion, habitat degradation and water quality degradation, and to enhance and promote the public health, safety and general welfare.

Stormwater Management Facility: Any infrastructure that controls or conveys stormwater runoff.

Stormwater Management Measure: Any stormwater management facility, structure, or nonstructural stormwater management practice.

Stormwater Management Plan: A document describing how existing runoff characteristics will be affected by a land development project and containing measures for complying with the provisions of this Division.

Stormwater Management System: The entire set of structural and nonstructural stormwater management facilities and practices that are used to capture, convey, and control the quantity and quality of the stormwater runoff from a site.

Stormwater Management Retrofit: A stormwater management practice designed for a currently developed site that previously had either no stormwater management practice in place or a practice inadequate to meet the stormwater management requirements of the site.

Stormwater Runoff: The quantity of surface water resulting from precipitation.

Structural Stormwater Control: A structural stormwater management facility or device that controls stormwater runoff and changes the characteristics of that runoff including, but not limited to, the quantity and quality, the period of release, the velocity of flow, or the rate of discharge of such runoff.

Urbanized Area: The area of the City of Bogart regulated under the National Pollutant Discharge Elimination System (NPDES) Stormwater Phase II Permit.

Wastewater: Any water or other liquid discharged from a facility, that has been used, as for washing, flushing, or in a manufacturing process, and so contains waste products.

Sec. 1113. Applicability.

a. Sec. 1114 of this Division shall be applicable to all portions of the City.

b. Sec. 1115 of this Division shall be applicable to owners of all stormwater structures or facilities existing at the date of this Division, regardless of their previous practices, in the area of the City, and for the activities, regulated under the NPDES Stormwater Phase II Permit.

c. Stormwater management in the urbanized area:

(1) Sec. 1116 of this Division shall be applicable to all land development in the area of the City regulated under the NPDES Stormwater Phase II Permit, including, but not limited to, site plan development applications, subdivision development applications, and grading permit applications, unless exempted pursuant to Sec. 1113.c(2) below. These standards apply to any new development or redevelopment site that meets one or more of the following criteria:

(a) New development that involves the creation of 5,000 square feet or more of impervious cover, or that involves other land development activities that result in the disturbance of land of one acre or more;

(b) Redevelopment that includes the creation, addition or replacement of 5,000 square feet or more of impervious cover, or that involves other land development activity that results in the disturbance of land of one acre or more;

(c) Any new development or redevelopment, regardless of size, that is defined by the City to be a hotspot land use; or,

(d) Land development activities that are smaller than the minimum applicability criteria set forth in Sec. 1113.c(1)(a) and Sec. 1113.c(1)(b) above if such activities are part of a larger common plan of development, even though multiple, separate and distinct land development activities may take place at different times on different schedules.

(2) The following activities are exempt from Sec. 1116 of this Division:

(a) Individual single-family or duplex residential lots that are not part of a subdivision or phased development project;

(b) Additions or modifications to existing single-family or duplex residential structures;

(c) Agricultural or silvicultural land management activities and agritourism activities within areas zoned for these activities; and,

(d) Repairs to any stormwater management facility or maintenance practice deemed necessary by the City Engineer/ Public Works Director.

d. Stormwater management in the non-urbanized area.

Sec. 1116 of this Division shall apply to areas not within the area of the City regulated under the NPDES Stormwater Phase II Permit in the following circumstances: any residential development containing lot sizes of three (3) acres or less and having 6 or more lots, all major subdivisions, all non-residential development, any development with size, configuration, and/or density that would lend itself to be considered an urbanized area, or if the site is designated a hotspot for stormwater pollution by the City Engineer/ Public Works Department. Sec. 1117 of this Division shall apply only to those areas not governed by Sec. 1116.

Sec. 1114. Illicit non-stormwater discharges and illegal connection.

Sec. 1114.01. Prohibitions.

a. Prohibition of illicit discharges.

No person shall throw, drain, or otherwise discharge, cause or allow others under their control to throw, drain, or otherwise discharge into the City of Bogart separate storm sewer system or watercourses any materials, including but not limited to any pollutants or waters containing any pollutants, other than stormwater.

The commencement, conduct or continuance of any illicit discharge to the storm drain system is prohibited except as described as follows:

(1) Water line flushing performed by a government agency, other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising ground water, ground water infiltration to storm drains, uncontaminated pumped ground water, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, natural riparian habitat or wetland flows, and any other water source not containing pollutants;

(2) Discharges or flows from fire fighting, and other discharges specified in writing by the City of Bogart as being necessary to protect public health and safety;

(3) Dye testing is an allowable discharge, but requires a verbal notification to the City of Bogart Planning Department prior to the time of the test;

(4) Any non-stormwater discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for an discharge to the City of Bogart separate storm sewer system.

b. Control of construction site debris and wastes.

All owners, applicants, contractors and developers shall control wastes such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste on construction sites and shall keep streets, gutters, ditches, and storm drains clear of all sediment and debris from the site.

c. Prohibition of illegal connections.

The construction, connection, use, maintenance or continued existence of any illegal connection to the City of Bogart separate storm sewer system is prohibited.

(1) This prohibition expressly includes, without limitation, illegal connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

(2) A person violates this Division if the person connects a line conveying sewage to the City of Bogart separate storm sewer system, or allows such a connection to continue.

(3) Improper connections in violation of this Division must be disconnected and redirected, if necessary, to an approved onsite wastewater management system or the sanitary sewer system upon approval of the City.

(4) Any drain or conveyance that has not been documented in plans, maps or equivalent, and which may be connected to the storm sewer system, shall be located by the owner or occupant of that property upon receipt of written notice of violation from the City requiring that such locating be completed. Such notice will specify a reasonable time period within which the location of the drain or conveyance is to be completed, that the drain or conveyance be identified as storm sewer, sanitary sewer or other, and that the outfall location or point of connection to the storm sewer system, sanitary sewer system or other discharge point be identified. Results of these investigations are to be documented and provided to the City Engineer/ Public Works Department.

Sec. 1114.02. **Industrial or construction activity discharges.**

Any person subject to an industrial or construction activity NPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the City Engineer/ Public Works Department prior to allowing discharges to the City of Bogart separate storm sewer system.

Sec. 1114.03. **Access and inspection of properties and facilities.**

The City, or its agent, shall be permitted to enter and inspect properties and facilities subject to regulation under this Division as often as may be necessary to determine compliance.

a. If a property or facility has security measures in force that require proper identification and clearance before entry into its premises, the owner or operator shall make the necessary arrangement to allow access to the City, or its agent.

b. The owner or operator shall allow the City, or its agent, ready access to all parts of the premises for the purposes of inspection, sampling, photography, videotaping, examination and copying of any records that are required under the conditions of an NPDES permit to discharge stormwater, and the performance of any additional duties as defined by state and federal law.

c. The City, or its agent, shall have the right to set up on any property or facility such devises as are necessary in the opinion of the City to conduct monitoring and/or sampling of the facility's stormwater discharge.

d. The City may require the owner or operator to install monitoring equipment and perform monitoring as necessary, and make the monitoring data available to the City. This sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the owner or operator at his/her own expense. All devises used to measure flow and quality shall be calibrated to ensure their accuracy.

e. Any temporary or permanent obstruction that inhibits access to the property or facility to be inspected and/or sampled shall be promptly removed by the owner or operator at the written or oral request of the City and shall not be replaced. The costs of clearing such access shall be borne by the owner or operator.

f. If the City, or its agent, has been refused access to any part of the premises from which stormwater is discharged, and the City is able to demonstrate probable cause to believe that there may be a violation of this Division, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this Division or any order issued hereunder, or to protect the overall public health, safety, environment and welfare of the community, then the City may seek issuance of a search warrant from any court of competent jurisdiction.

g. In the event a discharge constitutes an immediate danger to public health or public safety, the City, or its agent, is authorized to enter upon the subject private property, without giving prior notice, to take any and all measures necessary to abate the violation and/or restore the property. The City is authorized to seek costs of the abatement as outlined in "Costs of Abatement of the Violation" section below.

Sec. 1114.04. **Notification of spills and accidental discharges.**

a. Notwithstanding other requirements of law, as soon as any person responsible for a facility, activity or operation, or responsible for emergency response for a facility, activity or operation has information of any known or suspected release of pollutants or non-stormwater discharges from that facility, activity, or operation which are resulting or may result in illicit discharges or pollutants discharging into stormwater, the City of Bogart separate storm sewer system, State Waters, or Waters of the U.S., said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release so as to minimize the effects of the discharge.

b. In the event of such a release of hazardous materials, said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services.

c. In the event of a release of non-hazardous materials, said person shall notify the City Engineer/ Public Works Department in person or by phone no later than the next business day, including the nature, quantity and time of occurrence of the discharge. Notifications in person or by phone shall be confirmed by written notice, via certified mail return receipt requested addressed to the City Engineer/ Public Works Department within 3 business days of the initial notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

Sec. 1115. Maintenance of existing stormwater facilities.

Sec. 1115.01. **Responsibility for maintenance.**

The owners of private stormwater management facilities, detention facilities, and/or retention facilities shall be responsible for maintenance of those facilities. The owners shall be required to:

a. Maintain the proper operational characteristics of the facility; and,

b. Maintain the facility free of obstruction, silt or debris.

Sec. 1115.02. **Maintenance requirement.**

a. When the City determines that deficiencies exist in a private stormwater management system, the City shall notify the owner and the beneficial owners in writing of the deficiencies, describe the required corrective action, and the time period to have the deficiencies corrected.

b. If the owners fail to correct the deficiencies within the specified time frame, the City, or its agent, may enter the property and make, at the owners' expense, the necessary repairs or corrections to the system.

c. In the event deficiencies constitute an immediate danger to public health or public safety, the City, or its agent, is authorized to enter upon the subject private property, without giving prior notice, to take any and all measures necessary to abate the violation and/or restore the function of the stormwater system at the owners' expense.

Sec. 1115.03. **Easements.**

The owner of property containing a drainage easement shall not allow or cause to be deposited any material which causes a physical obstruction, including, but not limited to: structures; landscaping; fences; yard waste such as grass clippings, tree trimmings, and leaves; impervious cover; or any other material that may block the flow of water or otherwise disrupt proper function of the stormwater management system unless approved by the City Engineer/ Public Works Director. All drainage easements shall be kept clear of obstructions along the entire length of the easement whether it be a buried pipe, ditch, or other facility contained within the easement. The property owner shall remove any such materials existing prior to, or installed after, the effective date of this Division.

Sec. 1115.04. **Access and inspection of properties and facilities.**

a. The owners of property containing private stormwater management facilities, detention facilities, or retention facilities shall allow unimpeded access for the City to conduct inspections of the facilities. Inspections may be conducted by the City Engineer/ Public Works Department at any time for any reasonable basis, including, but not limited to: routine inspections, random inspections, inspections based upon complaints or other notice of possible violations, and joint inspections with other agencies inspecting under environmental or safety laws.

b. Any temporary or permanent obstruction that inhibits access to the property or facility to be inspected shall be promptly removed at the written or oral request of the City and shall not be replaced. The costs of clearing such access shall be borne by the owner or operator.

Sec. 1116. Stormwater management in the urbanized area.

Sec. 1116.01. **General.**

Whenever and wherever conditions, as are caused or aggravated by reason of the subdivision of land hereunder, adversely affect the proper use or drainage of streets, highways, pedestrian ways, slopes or natural watercourses, or adversely affect the public health, safety, or welfare, the following improvements may be required to be provided and installed by the subdivider:

a. On-tract and/or off-tract drainage or drainage structures necessary for the proper use and drainage of slopes, streets, highways and pedestrian ways, or for public safety.

b. Erosion control planting and/or structural controls.

Sec. 1116.02. **Stormwater application and permit.**

a. All persons proposing development and/or construction in City of Bogart shall submit a stormwater management plan to the City for approval. This plan shall comply with the requirements set forth in Sec. 1116.03 below.

b. The plan shall be prepared by a Registered Professional Engineer or Georgia Registered Landscape Architect to ensure compliance with all regulations.

c. A stormwater management plan incorporated into the approved construction plans shall constitute a permit that will satisfy the requirements of this Section.

Sec. 1116.03. **Standards for stormwater management.**

a. All development and/or construction within urbanized area of City of Bogart shall meet requirements of the *Georgia Stormwater Management Manual, Vol. 2*, unless otherwise specified in this Division.

b. Facilities for the management of stormwater discharges shall be designed and constructed in a manner that enhances and protects the natural beauty and aesthetic qualities of City of Bogart as follows:

(1) Any required retention and/or detention areas shall not be developed.

(2) Any required retention and/or detention areas shall be incorporated into the common areas of the residential development or incorporated into individual lots.

(3) The local government maintains the right, but not the responsibility, to access retention and/or detention areas for purposes of maintenance and inspection

(4) Appropriate vegetation shall be planted in all retention and/or detention areas.

(5) Where fencing is required under Section 1116.03.c, evergreen vegetative screening shall be provided with a minimum height of 3 feet at time of planting. Plant materials used for such screening must be in compliance with Table 8.2 of this Development Code.

c. Fences a minimum of 4 feet in height with a minimum 8 foot wide gate will be required on all detention ponds where:

(1) The sides of the pond have a slope greater than 3 horizontal to 1 vertical, or

(2) The depth of water in the pond is greater than 3 feet at one hour after the duration of any storm event up to the 50-year event.

d. Drainage easement requirements.

(1) The minimum easement width for an open ditch where a pipe is feeding into the ditch will be determined as follows:

Table 11.1: Drainage Ditch Easement Widths

Pipe Size Feeding Into Ditch	Minimum Easement Width
15 to 30 inches	20 feet
36 to 66 inches	30 feet
72 inches and greater	40 feet

(2) Where a subdivision is traversed by a watercourse, drainage way or stream, there shall be a drainage and access easement conforming substantially with the lines of such watercourse, and such further width as will be adequate for the purpose of drainage and maintenance, taking into account possible future development of higher land in the same drainage area, in accordance with Table 11.1 above, or bank plus 20 feet. Such drainage way shall be piped when the City Engineer/ Public Works Director shall find that it is a hazard or that a continual maintenance problem might exist.

(3) If the drainage way is totally piped, the easement width shall be based on the associated pipe size above.

e. If any stormwater management system proposes to utilize the roadway embankment for the temporary impoundment (detention) of stormwater then additional engineering analysis and approved mitigation measures as determined on a case-by-case basis by the City Engineer/ Public Works Director will be required to ensure the protection of the roadway system during all storm events in order to qualify for the exemption contained in the Private Bridges and Dams on Roadways Section of the Project Design and Construction Standards Article of this Development Code.

Said analysis and mitigation measures shall include but are not limited to;

(1) No impounded surface water elevation shall encroach into any portion of the public right-of-way, any utility easement/corridor, or any utility easement/corridor on private street easements

(2) The 100-year water surface elevation must maintain a minimum of 3 vertical feet of freeboard from the lowest roadway elevation traversing the embankment.

(3) The roadway embankment must be protected from seepage, erosion, and under-mining from any impoundment of water. Examples of protection measures may include but are not limited to anti-seep collars, special engineered embankment construction, and embankment armoring. At a minimum, embankment armoring protection measures shall be incorporated beginning at the highest water surface elevation calculated at 4.0 hours after the beginning of the storm event for all analyzed return frequencies including the 100 year event. The embankment armoring shall extend to the bottom of the impoundment facility. The City Engineer/ Public Works Director may require additional protection measures based on maintenance needs or critical infrastructure protection needs.

Sec. 1116.04. **Stormwater collection and transport system design considerations.**

An adequate system based upon at least a 25-year storm event shall be provided for the proper drainage of all surface water originating in or affecting the subdivision.

a. Stormwater inlets shall be designed and located so as not to exceed a maximum gutter spread width of half the travel size based on flow data calculations for the 10-year storm event.

b. The drainage system shall conform to any City storm drainage master plan that may be adopted and shall include necessary curbing, pipes, culverts, headwalls, drop inlets, bridges, swale ditches or any other type of drainage facility needed to control the flow of water in, around or through the subdivision.

c. Pipe size will be determined by utilizing the Rational Method or the Soil Conservation Service Method (TR-55) to compute peak runoff. A 25-year storm event will be used to determine all pipe sizes. Hydraulic grade line shall not exceed 90% of the diameter of the pipe. All cross drains and culverts under roadways shall be sized based on a 50-year storm event. All proposed piping within a FEMA identified floodplain shall be sized to adequately convey the 100-year frequency storm event.

d. Manning's equation shall be used to evaluate hydraulic capacity and velocity of flow within the storm drainage system. Required storm pipes shall be designed to maintain a water flow velocity greater than or equal to 3 feet per second. The hydraulic analysis of culverts shall be based on Federal Highway Administration engineering practice and take into account the inlet geometry, slope, size, roughness, and approach or tailwater conditions. Stormwater inlets shall be designed in accordance with Federal Highway Administration engineering practice and constructed in compliance with Georgia D.O.T. construction standards and shall be Georgia D.O.T. Standard 1033, 1034, and 1019. Drainage calculation and design data are required for all stormwater conveyance systems and structures. All drainage structures shall be constructed of reinforced precast concrete, four 4 diameter or larger. All 1033D and 1034D drainage structures shall require a reinforced precast "Round to Square" adapter for additional throat support. All junction boxes shall include precast adapters and heavy duty traffic rated ring and covers. All manholes shall include approved steps, spaced 12 inches on center vertically, to allow safe access by maintenance personnel. All structures shall have paved inverts.

e. In certain instances where rolled or "Hollywood" curb is utilized, the City Engineer/ Public Works Director may require the use of 1033F and 1034F catch basins.

f. Energy dissipation devices, such as splash pads, rip rap, stilling basins, etc., shall be provided at the outlet of every culvert and piped discharge system. The size and type of energy dissipation device to be used shall be designed in accordance with sound engineering practices and this Division.

g. All drainage ditches that are between building lots shall be piped to the rear property line. This shall be done at the expense of the developer.

h. Any routed stormwater shall attain sheet flow by the property line.

i. Discharge structures that are within close proximity to adjoining properties or the public right-of-way shall be screened from view.

Sec. 1116.05. **Natural drainage.**

a. Natural drainage channels, ditches, swales and drainage patterns existing within a subdivision shall be retained and improved by the subdivider unless otherwise approved by the City Engineer/ Public Works Director.

b. Off-site drainage shall be adequately transported through the proposed development.

Sec. 1116.06. **Drainage system construction.**

All pipe sizes shall be approved by the City Engineer/ Public Works Director to meet the drainage conditions of the watershed and area of the potential runoff, per current design standards and requirements.

a. The minimum cross drain diameter shall be 18 inches.

b. Minimum cover shall be 24 inches.

c. In all instances, depth requirements shall meet or exceed manufacturer's guidelines.

Sec. 1116.07. **Materials and installation.**

a. Pipes.

(1) Pipe material shall be determined based on type of installation, as set forth in Table 11.2: Selection Guidelines for Storm Sewer Piping. All pipes shall be new and unused.

(2) The gauge or class of pipe used shall be determined by acceptable methods using H-20 highway loading, and shall meet Georgia D.O.T. Specifications. The City Engineer/ Public Works Director, or his/her duly appointed representative, shall inspect the pipe before installation to assure that it is free of cracks or damage. All damaged, used, or "second" quality pipe shall be refused and immediately removed from the job site.

b. Joints and installation.

(1) Reinforced concrete pipe joints must be properly constructed to prevent exfiltration.

(2) The use of O-rings or sealants may be required, depending on pipe design.

(3) All storm sewer piping shall be constructed in a linear approach with no vertical or horizontal variance from the approved design.

(4) High density polyethylene (HDPE) and corrugated metal pipe (CMP) shall be joined by manufacturer's recommended pipe banding materials. All trench lines shall be thoroughly compacted prior to pipe installation. HDPE pipe will require special bedding and installation in strict accordance with manufacturer's specifications and as directed by the City Engineer/ Public Works Director.

Table 11.2: Selection Guidelines for Storm Sewer Piping

Type of Pipe Installation	Reinforced Concrete Pipe (RCP)	Corrugated Steel AASHTO M-36		Corrugated Aluminum AASHTO M-196	Plastic AASHTO M-294	Reinforced Concrete Box Culvert
		Aluminized Type II CMP	Bituminous Coated CMP	Aluminum Alloy CMP	Corrugated HDPE Smooth Lined	Per GDOT Standards
Longitudinal Grade Less Than 10%	Yes	Yes	Yes	Yes	Yes (1)	---
Longitudinal Grade Over 10%	No	Yes	Yes	Yes	Yes (1)	---
Cross Drain Less Than 250 ADT	Yes	Yes	Yes	Yes	Yes (1)	---
Cross Drain Greater Than 250 ADT	Yes	No	No	No	No	---
Cross Drain Flowing Stream Application	Yes	(3)	No	Yes	Yes (1) (4)	---
Cross Drain 25 Yr Flow > 200 CFS *or* Fill Depth > 18 ft	(2)	No	No	No	No	Yes

Conditional Uses:

(1) Corrugated high density polyethylene pipe smooth lined type "S" must be manufactured and installed in strict compliance with the manufacturer's recommendation. Special backfill and bedding are required per the direction of the City Engineer/ Public Works Director. Prior approval of the City Engineer/ Public Works Director is required.

(2) Reinforced concrete box culverts are required under excessive flow and/or fill depth conditions. Approved pipe materials may be utilized in some instances based on the City Engineer/ Public Works Director's assessment of existing conditions and future maintenance requirements.

(3) The addition of a type "A" full bituminous coating with paved invert is required for this application. (AASHTO M-190)

(4) Requires approval of City Engineer/ Public Works Director based on assessment of existing conditions and future maintenance requirements.

c. Only reinforced concrete pipe shall be used within street right-of-way on arterial roads. Reinforced concrete pipe shall be used on all cross drains crossing under the roadway for major and minor collectors. Concrete pipe shall not be used on grades exceeding 10%. Metal pipe may be used within the rights-of-way of local streets and for driveway culverts. Metal pipe shall either be corrugated steel (AASHTO M-36) with aluminized Type II or bituminous coating or corrugated aluminum alloy pipe (AASHTO M-196).

d. Unless otherwise specifically set forth in this code, all of the materials, methods of construction, and workmanship for the work covered in reference to stormwater drainage construction shall conform to the latest standard specific specifications of the Georgia Department of Transportation.

e. Pipe installation shall conform to Georgia D.O.T. Standard Specifications for construction of roads and bridges. Before any traffic over a storm drain is allowed, the developer shall provide an adequate depth and width of compacted backfill to protect the structure from damage or displacement. The developer shall remove any debris or silt that constricts the flow through a pipe as of as necessary to maintain drainage. All pipe structures shall be cleaned before the work is accepted. Any damage or displacement that may occur due to traffic or erosion shall be repaired or corrected at the developer's expense.

f. Trench construction for storm drainage pipe shall be in accordance with State Highway Standard 1030D (or most current) or as directed by the City Engineer/ Public Works Director.

g. Storm drainage pipe shall be bedded in Type 57 gravel where wet conditions are encountered.

h. Backfilling of trenches shall be accomplished immediately after the pipe is laid. The fill around the pipe shall be placed in layers not to exceed 6 inches with each layer being thoroughly compacted. All material shall have an in place density of 98% modified proctor to a depth of 6 inches below the finished grade, and 95% modified proctor at depth greater than 6 inches below the finished grade. Compaction requirements shall be attained by the use of mechanical methods. Each layer of backfill shall be placed loosely and thoroughly compacted in place.

i. All backfill shall be non-plastic in nature, free from roots, vegetative matter, waste, construction material or other objectionable material. Said material shall be capable of being compacted by mechanical means and shall have no tendency to flow or behave in a plastic manner under the tamping blows.

j. Material deemed by the City Engineer/ Public Works Director as unsuitable for backfill purposes shall be removed and replaced with selected backfill material.

k. Water shall not be permitted to rise in trenches that are not backfilled after the pipe has been placed.

Sec. 1116.08. **Field changes.**

Minor changes to approved construction plans because of field conditions shall be documented as revisions to the approved development plans and correctly shown on the as-built drawings. Discrepancies between the as-built drawings and the approved development plans may result in delays in approving final plans or certificates of occupancy until the discrepancies are resolved. See the Field Changes Division of the Procedures and Permits Article of this Development Code.

Sec. 1116.09. **Endwalls.**

All culverts shall have endwalls or flared end sections constructed in accordance with Georgia D.O.T. Specifications and Georgia D.O.T. Manual on Drainage Design for Highways. All flared end sections under or adjacent to roadways with a posted speed in excess of 25 mph shall be safety end sections per Georgia D.O.T. standards.

Sec. 1116.10. **Catch basins and storm sewer structures.**

a. All catch basins and storm sewer structures shall be designed and constructed in compliance with Georgia D.O.T. Specifications and shall be Georgia D.O.T. Standard 1033D, 1034D, or 1019.

b. The use of a Standard 1019 shall be excluded from turnarounds and the low point of sag vertical curves draining more than 300 feet of gutter. Drainage calculations and design data are required for the use of a Standard 1019.

c. All drainage structures shall be constructed of reinforced precast concrete, 4 foot diameter or larger.

d. All 1033D and 1034D drainage structures shall require a reinforced precast "Round to Square" adapter for additional throat support.

e. All junction boxes shall include precast adapters and heavy duty traffic rated ring and covers. All junction boxes shall include approved steps, spaced 12 inches on center vertically, to allow safe access by maintenance personnel.

f. All storm sewer structures shall be reinforced precast or poured in place reinforced concrete. Masonry structures are not allowed unless authorized in writing by the City Engineer/ Public Works Director.

g. No length of pipe shall exceed 200 feet without intermediate structures.

h. In certain instances where rolled or "Hollywood" curb is utilized, the City Engineer/ Public Works Director may require the use of 1033F and 1034F catch basins.

i. All structures shall have poured inverts to minimize accumulation of water and sediment in the structure.

j. All structure covers shall be cast to read "City of Bogart Storm Sewer, Dump No Waste – Drains to Stream".

Sec. 1116.11. **Timing of installation.**

Construction of the stormwater system shall be initiated as part of the grading of the site. Stormwater detention facilities shall be constructed prior to the installation of any other site improvements, and may be utilized under proper design as sedimentation basins during development. Installation of all other storm drainage pipes, culverts, headwalls, and ditches shall be coordinated with the construction of streets and other site improvements, as appropriate, in accordance with an approved Stormwater Management Plan.

Sec. 1116.12. **Maintenance responsibilities.**

a. The developer shall be responsible for removing temporary structures or facilities at the completion of the construction.

b. It shall be the responsibility of the developer to maintain all facilities required by the Stormwater Management Plan during construction and for a maintenance period following approval of the final subdivision plat or issuance of a certificate of occupancy, as applicable. The maintenance period shall coincide with the continuing maintenance period required under the Required Improvements Section of the Project Design and Construction Standards Article of this Development Code regarding streets and drainage.

c. Should an owner or developer, whichever is the responsible party, fail to maintain the stormwater management facilities in a state of service intended by the Stormwater Management Plan, then the City shall notify the responsible party in writing of the deficiencies and specific minimum maintenance requirements to remedy such deficiencies.

Sec. 1116.13. **Stormwater discharge management.**

a. Stormwater design manual.

The City Engineer/ Public Works Department will utilize the policy, criteria and information including technical specifications and standards in the latest edition of the *Georgia Stormwater Management Manual, Volume 2,* and any relevant local addenda, for the proper implementation of the requirements of this Division, except that structural stormwater controls shall require prior approval of the City Engineer/ Public Works Department as described below. The manual may be updated and expanded periodically, based on improvements in science, engineering, monitoring and local maintenance experience.

b. Minimum Stormwater Management Standards.

The Minimum Stormwater Management Standards identified in the *Georgia Stormwater Management Manual, Volume 2* shall be the required minimum stormwater management performance criteria for new development or redevelopment sites unless otherwise provided for in this Division. In addition, the Overbank Flood Protection standard shall include control of the post development discharge rates to the predevelopment rates for

the 2, 5, 10, 25 and 50-year storm events. If hydrologic or topographic conditions, or land use activities warrant greater control than that provided by the minimum control requirements, the City Engineer/ Public Works Department may impose additional requirements deemed necessary to protect upstream and downstream properties and aquatic resources from damage due to increased volume, frequency, rate of stormwater runoff, the nature of the post development discharge, or increased nonpoint source pollution loads created on the site in question

(1) Structural stormwater controls.

(a) All structural stormwater controls shall be submitted to the City Engineer/ Public Works Department for review and approval before being included in the design of a stormwater management system. The intent of the approval process is to review independent third-party scientific verification of the structural controls performance and ability to meet water quality treatment objectives, verify the proven record of longevity in the field, verify the ability to function in Georgia conditions, and evaluate the operation and maintenance costs as compared to other alternatives.

(b) Applicants shall consult the *Georgia Stormwater Management Manual, Volume 2* for guidance on the factors that determine site design feasibility when selecting and locating a structural stormwater control.

(2) Stormwater Credits for Nonstructural Measures.

The use of one or more site design measures by the applicant may allow for a reduction in the water quality treatment volume required under Water Quality section above. The applicant may, if approved by the City Engineer/ Public Works Department, take credit for the use of stormwater better site design practices and reduce the water quality volume requirement. For each potential credit, there is a minimum set of criteria and requirements which identify the conditions or circumstances under which the credit may be applied. The site design practices that qualify for this credit and the criteria and procedures for applying and calculating the credits are included in the *Georgia Stormwater Management Manual, Volume 2*.

c. Stormwater Management Inspection and Maintenance Agreements.

The applicant or owner of the site must execute an inspection and maintenance agreement, which shall be binding on all subsequent owners of the site, for any land development activity requiring a stormwater management facility or practice hereunder and for which the City requires ongoing maintenance.

(1) Prior to the submission of the final plat for approval, or request for a Certificate of Occupancy where a final plat is not required, the owner shall record the inspection and maintenance agreement in the deed records of the Clerk of Court. The owner shall provide a copy of the recorded agreement to the City Engineer/ Public Works Department with the final plat, or request for Certificate of Occupancy where a final plat is not required. The final plat shall have a notation referencing the deed book number and page of the recorded inspection and maintenance agreement indicating that individual lot owners are subject to the terms and conditions of said agreement.

(2) The inspection and maintenance agreement be binding on all affected property, shall run with the land, and shall identify by name or official title the person(s) responsible for carrying out the inspection and maintenance. Responsibility for the operation and maintenance of the stormwater management facility or practice shall remain with the property owner and shall pass to any successor owner. If portions of the land are sold or otherwise transferred, legally binding arrangements shall be made to pass the inspection and maintenance responsibility to the appropriate successors in title. These arrangements shall designate, for each portion of the site, the person to be permanently responsible for its inspection and maintenance.

(3) As part of the inspection and maintenance agreement, a schedule shall be developed for when and how often routine inspection and maintenance will occur to ensure proper function of the stormwater management facility or practice. The agreement shall also include plans for annual inspections to ensure proper performance of the facility between scheduled maintenance activities and shall also include remedies for the default thereof.

d. Long-Term Inspection and Maintenance of Stormwater Facilities and Practices.

(1) Stormwater management facilities and practices which are subject to an inspection and maintenance agreement shall be inspected and maintained on a routine basis by the responsible person in accordance with the approved inspection and maintenance agreement. Parties responsible for the operation and maintenance of a stormwater management facility shall maintain records of all maintenance and repairs, and provide copies of said records to the City Engineer/ Public Works Department.

(2) In the event that the stormwater management facility has not been maintained, the City shall notify the responsible person in writing of the deficiencies, describe the required corrective action, and the time period to have the deficiencies corrected.

(3) If the responsible person fails to correct the deficiencies within the specified time frame, the City, or its agent, may enter upon the property and make, at the owners' expense, the necessary repairs or corrections to the system.

(4) In the event deficiencies constitute an imminent danger to public health or public safety, or threatens downstream water resources, the City, or its agent, is authorized to enter upon the subject private property, without giving prior notice, to take any and all measures necessary to abate the violation and/or restore the function of the stormwater facilities at the owners' expense.

e. Access and Inspection of Properties and Facilities.

(1) The owners of property containing stormwater management facilities, detention facilities, or retention facilities shall allow unimpeded access for the City to conduct inspections of the facilities. Inspections may be conducted by the City Engineer/ Public Works Department at any time for any reasonable basis, including, but not limited to: routine inspections, random inspections, inspections based upon complaints or other notice of possible violations, and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; measurement of discharges, location measurements, surveying, sampling of surface and ground waters; and evaluations of the condition of stormwater management facilities and practices.

(2) Any temporary or permanent obstruction that inhibits access to the property or facility to be inspected shall be promptly removed at the written or oral request of the City and shall not be replaced. The costs of clearing such access shall be borne by the owner or operator.

f. Easements.

The owner of property containing a drainage easement shall not allow or cause to be deposited any material which causes a physical obstruction in the easement, including, tree trimmings, and leaves; impervious cover; or any other material that may block the flow of water or otherwise disrupt proper function of the stormwater management system. All drainage easements shall be kept clear of obstructions along the entire length of the easement whether it be a buried pipe, ditch or other facility contained within the easement. The property owner shall remove any such materials existing prior to, or installed after, the effective date of this Division.

Sec. 1117. Stormwater management in the non-urbanized area.

Sec. 1117.01. **General.**

Whenever and wherever conditions, as are caused or aggravated by reason of the subdivision of land hereunder, adversely affect the proper use or drainage of streets, highways, pedestrian ways, slopes or natural watercourses, or adversely affect the public health, safety, or welfare, the following improvements may be required to be provided and installed by the subdivider:

a. On-tract and/or off-tract drainage or drainage structures necessary for the proper use and drainage of slopes, streets, highways and pedestrian ways, or for public safety.

b. Erosion control planting and/or structural controls.

Sec. 1117.02. **Stormwater application and permit.**

a. All persons proposing development and/or construction in City of Bogart shall submit a stormwater management plan to the City for approval. This plan shall comply with the requirements set forth in Sec. 1117.03 below.

b. The plan shall be prepared by a Registered Professional Engineer or Georgia Registered Landscape Architect to ensure compliance with all regulations.

c. A stormwater management plan incorporated into the approved construction plans shall constitute a permit that will satisfy the requirements of this Section.

Sec. 1117.03. **Standards for stormwater management.**

a. A combination of storage and controlled release of stormwater runoff on-site detention or retention shall be required when the proposed development shall increase the peak rate of runoff by more than 1 cubic feet per second (CFS) for a 10-year frequency storm. The Rational Method or the Soil Conservation Method shall be used to determine the runoff rate in accordance with sound engineering practice and shall be acceptable to the City Engineer/ Public Works Director and Planning Director. Developments may be exempt from this provision if the design professional can demonstrate that the runoff can be adequately transmitted through existing downstream storm drain structures and will not result in increased flood heights or additional threats to public safety, and will not adversely affect downstream properties, and compliance with Sec. 1117.04 is demonstrated.

b. Should on-site retention or detention be required, the outlet device(s) of the retention/detention facility shall be designed to limit post-development runoff rates to less than or equal to the pre-development rates for the 2, 5, 10, 25, and 50 year storm event.

c. The retention or detention storage volume to be provided shall be calculated on the basis of the appropriate return frequency rainfall, as published by the National Weather Service or other acceptable service for the affected site. The retention or detention volume required shall be calculated based on the DeKalb hydrograph for inflow and standard reservoir routing at the approved release rates as specified above. However, the design calculation shall include the routing of the 100-year frequency storm event through the retention/detention facility. Said calculations shall indicate that the 100-year frequency storm event can be safely routed through the facility.

d. Applicants in non-urbanized areas that choose to handle stormwater management using the standards of urbanized areas may do so as long as all aspects of stormwater management meet the urbanized standards.

e. The storm drainage system shall be designed in accordance with Sec. 1117.04 of this Ordinance. At a minimum, the storm drainage system shall be sized to adequately convey the runoff from the 25-year frequency storm event to the retention/detention facility.

f. Facilities for the management of stormwater discharges shall be designed and constructed in a manner that enhances and protects the natural beauty and aesthetic qualities of City of Bogart as follows:

(1) Any required retention and/or detention areas shall not be developed.

(2) Any required retention and/or detention areas shall be incorporated into the common areas of the residential development or incorporated into individual lots.

(3) The local government maintains the right, but not the responsibility, to access retention and/or detention areas for purposes of maintenance and inspection.

(4) Appropriate vegetation shall be planted in all retention and/or detention areas.

(5) Where fencing is required under Section 1117.03.g, evergreen vegetative screening shall be provided with a minimum height of 3 feet at time of planting. Plant materials used for such screening must be in compliance with Table 8.2 of this Development Code.

g. Fences a minimum of 4 feet in height with a minimum 8 foot wide gate will be required on all detention ponds where:

(1) The sides of the pond have a slope greater than 3 horizontal to 1 vertical, or

(2) The depth of water in the pond is greater than 3 feet at one hour after the duration of any storm event up to the 50-year event.

h. Drainage easement requirements.

(1) The minimum easement width for open ditch where pipe is feeding into the ditch will be determined as follows:

Table 11.3: Drainage Ditch Easement Widths

Pipe Size Feeding Into Ditch	Minimum Easement Width
15 to 30 inches	20 feet
36 to 66 inches	30 feet
72 inches and greater	40 feet

(2) Where a subdivision is traversed by a watercourse, drainage way or stream, there shall be a drainage and access easement conforming substantially with the lines of such watercourse, and such further width as will be adequate for the purpose of drainage and maintenance, taking into account possible future development of higher land in the same drainage area, in accordance with Table 11.3 above, or bank plus 20 feet. Such drainage way shall be piped when the City Engineer/ Public Works Director shall find that it is a hazard or that a continual maintenance problem might exist.

(3) If the drainage way is totally piped, the easement width shall be based on the associated pipe size above.

i. If any stormwater management system proposes to utilize the roadway embankment for the temporary impoundment (detention) of stormwater then additional engineering analysis and approved mitigation measures as determined on a case-by-case basis by the City Engineer/ Public Works Director will be required to ensure the protection of the roadway system during all storm events in order to qualify for the exemption contained in the Private Bridges and Dams on Roadways Section of the Project Design and Construction Standards Article of this Development Code.

Said analysis and mitigation measures shall include but are not limited to;

(1) No impounded surface water elevation shall encroach into any portion of the public right-of-way, any utility easement/corridor, or any utility easement/corridor on private street easements

(2) The 100-year water surface elevation must maintain a minimum of 3 vertical feet of freeboard from the lowest roadway elevation traversing the embankment.

(3) The roadway embankment must be protected from seepage, erosion, and undermining from any impoundment of water. Examples of protection measures may include but are not limited to anti-seep collars, special engineered embankment construction, and embankment armoring. At a minimum, embankment armoring protection measures shall be incorporated beginning at the highest water surface elevation calculated at 4.0 hours after the beginning of the storm event for all analyzed return frequencies including the 100 year event. The embankment armoring shall extend to the bottom of the impoundment facility. The City Engineer/ Public Works Director may require additional protection measures based on maintenance needs or critical infrastructure protection needs.

Sec. 1117.04. **Storm drainage design considerations.**

An adequate system based upon at least a 25-year storm event shall be provided for the proper drainage of all surface water originating in or affecting the subdivision.

a. Stormwater inlets shall be designed and located so as not to exceed a maximum gutter spread width of half the travel lane based on flow data calculations for the 10-year storm event.

b. The drainage system shall conform to any City storm drainage master plan which may be adopted and shall include necessary curbing, pipes, culverts, headwalls, drop inlets, bridges, swale ditches, or any other type of drainage facility needed to control the flow of water in, around, or through the subdivision.

c. Pipe size will be determined by utilizing the Rational Method or the Soil Conservation Service Method (TR-55) to compute peak runoff. A 25-year storm event will be used to determine all pipe sizes. Hydraulic grade line shall not exceed 90% of the diameter of the pipe. All cross drains and culverts under roadways shall be sized based on a 50-year storm event. All proposed piping within a FEMA identified floodplain shall be sized to adequately convey the 100-year frequency storm event.

d. Manning's equation shall be used to evaluate hydraulic capacity and velocity of flow within the storm drainage system. Required storm pipes shall be designed to maintain a water flow velocity greater than or equal to 3 feet per second. The hydraulic analysis of culverts shall be based on Federal Highway Administration engineering practice and take into account the inlet geometry, slope, size, roughness, and approach or tailwater conditions. Stormwater inlets shall be designed in accordance with Federal Highway Administration engineering practice and constructed in compliance with Georgia D.O.T. construction standards and shall be Georgia D.O.T. Standard 1033, 1034, and 1019. Drainage calculation and design data are required for all stormwater conveyance systems and structures. All drainage structures shall be constructed of reinforced precast concrete, 4 foot diameter or larger. All 1033D and 1034D drainage structures shall require a reinforced precast "Round to Square" adapter for additional throat support. All junction boxes shall include precast adapters and heavy duty traffic rated ring and covers. All manholes shall include approved steps, spaced 12 inches on center vertically, to allow safe access by maintenance personnel. All structures shall have paved inverts.

e. In certain instances where rolled or "Hollywood" curb is utilized, the City Engineer/ Public Works Director may require the use of 1033F and 1034F catch basins.

f. Energy dissipation devices, such as splash pads, rip rap, stilling basins, etc., shall be provided at the outlet of every culvert and piped discharge system. The size and type of energy dissipation device to be used shall be designed in accordance with sound engineering practices and this Division.

g. All drainage ditches that are between building lots shall be piped to the rear property line. This shall be done at the expense of the developer.

h. Any routed stormwater shall attain sheet flow by the property line.

i. Discharge structures that are within close proximity to adjoining properties or the public right-of-way shall be screened from view.

Sec. 1117.05. **Natural drainage.**

a. Natural drainage channels, ditches, swales and drainage patterns existing within a subdivision shall be retained and improved by the subdivider unless otherwise approved by the City Engineer/ Public Works Director.

b. Off-site drainage shall be adequately transported through the proposed development. Post-development stormwater runoff shall not exceed pre-development conditions for the 2, 5, 10, 25 and 50-year storm events.

c. The applicant must demonstrate adequate protection of the water quality by use of filter berms, stilling basins, velocity control and other approved methods. Such demonstration shall include supporting data that definitely indicates that adequate protection of the water quality is provided.

Sec. 1117.06. **Drainage system construction.**

All pipe sizes shall be approved by the City Engineer/ Public Works Director to meet the drainage conditions of the watershed and area of the potential runoff, per current design standards and requirements.

a. The minimum cross drain diameter shall be 18 inches.

b. Minimum cover shall be 24 inches.

c. In all instances, depth requirements shall meet or exceed manufacturer's guidelines.

Sec. 1117.07. **Materials and installation.**

a. Pipes.

(1) Pipe material shall be determines based on type of installation, as set forth in Table 11.4: Selection Guidelines for Storm Sewer Piping. All pipes shall be new and unused.

(2) The gauge or class of pipe used shall be determined by acceptable methods using H-20 highway loading, and shall meet Georgia D.O.T. Specifications. The City Engineer/ Public Works Director, or his/her duly appointed representative, shall inspect the pipe before installation to assure that it is free of cracks or damage. All damaged, used, or "second" quality pipe shall be refused and immediately removed from the job site.

b. Joints and installation.

(1) Reinforced concrete pipe joints must be properly constructed to prevent exfiltration.

(2) The use of O-rings or sealants may be required, depending on pipe design.

(3) All storm sewer piping shall be constructed in a linear approach with no vertical or horizontal variance from the approved design.

(4) High density polyethylene (HDPE) and corrugated metal pipe (CMP) shall be joined by manufacturer's recommended pipe banding materials. All trench lines shall be thoroughly compacted prior to pipe installation. HDPE pipe will require special bedding and installation in accordance with manufacturer's specifications and as directed by the City Engineer/ Public Works Director.

Table 11.4: Selection Guidelines for Storm Sewer Piping

Type of Pipe Installation	Reinforced Concrete Pipe (RCP)	Corrugated Steel AASHTO M-36		Corrugated Aluminum AASHTO M-196	Plastic AASHTO M-294	Reinforced Concrete Box Culvert
		Aluminized Type II CMP	Bituminous Coated CMP	Aluminum Alloy CMP	Corrugated HDPE Smooth Lined	Per GDOT Standards
Longitudinal Grade Less Than 10%	Yes	Yes	Yes	Yes	Yes (1)	---
Longitudinal Grade Over 10%	No	Yes	Yes	Yes	Yes (1)	---
Cross Drain Less Than 250 ADT	Yes	Yes	Yes	Yes	Yes (1)	---
Cross Drain Greater Than 250 ADT	Yes	No	No	No	No	---
Cross Drain Flowing Stream Application	Yes	(3)	No	Yes	Yes (1) (4)	---
Cross Drain 25 Yr Flow > 200 CFS *or* Fill Depth > 18 ft	(2)	No	No	No	No	Yes

Conditional Uses:

(1) Corrugated high density polyethylene pipe smooth lined type "S" must be manufactured and installed in strict compliance with the manufacturer's recommendation. Special backfill and bedding are required per the direction of the City Engineer/ Public Works Director. Prior approval of the City Engineer/ Public Works Director is required.

(2) Reinforced concrete box culverts are required under excessive flow and/or fill depth conditions. Approved pipe materials may be utilized in some instances based on the City Engineer/ Public Works Director's assessment of existing conditions and future maintenance requirements.

(3) The addition of a type "A" full bituminous coating with paved invert is required for this application. (AASHTO M-190)

(4) Requires approval of City Engineer/ Public Works Director based on assessment of existing conditions and future maintenance requirements.

c. Only reinforce concrete pipe shall be used within street right-of way on arterial roads. Reinforced concrete pipe shall be used on all cross drains crossing under the roadway for major and minor collectors. Concrete pipe shall not be used on grades exceeding 10%. Metal pipe may be used within the rights-of way of local streets and for driveway culverts. Metal pipe shall either be corrugated steel (AASHTO M-36) with aluminized Type II or bituminous coating or corrugated aluminum alloy pipe (AASHTO M-196).

d. Unless otherwise specifically set forth in this code, all of the materials, methods of construction, and workmanship for the work covered in reference to stormwater drainage construction shall conform to the latest standard specific specifications of the Georgia Department of Transportation.

e. Pipe installation shall conform to Georgia D.O.T. Standard Specifications for construction of roads and bridges. Before any traffic over a storm drain is allowed, the developer shall provide an adequate depth and width of compacted backfill to protect the structure from damage or displacement. The developer shall remove any debris or silt that constricts the flow through a pipe as of as necessary to maintain drainage. All pipe structures shall be cleaned before the work is accepted. Any damage or displacement that may occur due to traffic or erosion shall be repaired or corrected at the developer's expense.

f. Trench construction for storm drainage pipe shall be in accordance with State Highway Standard 1030D (or most current) or as directed by the City Engineer/ Public Works Director.

g. Storm drainage pipe shall be bedded in Type 57 gravel where wet conditions are encountered.

h. Backfilling of trenches shall be accomplished immediately after the pipe is laid. The fill around the pipe shall be placed in layers not to exceed 6 inches with each layer being thoroughly compacted. All material shall have an in place density of 98% modified proctor to a depth of 6 inches below the finished grade, and 95% modified proctor at depth greater than 6 inches below the finished grade. Compaction requirements shall be attained by the use of mechanical methods. Each layer of backfill shall be placed loosely and thoroughly compacted in place.

i. All backfill shall be non-plastic in nature, free from roots, vegetative matter, waste, construction material or other objectionable material. Said material shall be capable of being compacted by mechanical means and shall have no tendency to flow or behave in a plastic manner under the tamping blows.

j. Material deemed by the City Engineer/ Public Works Director as unsuitable for backfill purposes shall be removed and replaced with selected backfill material.

k. Water shall not be permitted to rise in trenches that are not backfilled after the pipe has been placed.

Sec. 1117.08. **Field changes.**

Minor changes to approved construction plans because of field conditions shall be documented as revisions to the approved development plans and correctly shown on the as-built drawings. Discrepancies between the as-built drawings and the approved development plans may result in delays in approving final plans or certificates of occupancy until the discrepancies are resolved. See the Field Changes Division of the Procedures and Permits Article of this Development Code.

Sec. 1117.09. **Endwalls.**

All culverts shall have endwalls or flared end sections constructed in accordance with Georgia D.O.T. Specifications and Georgia D.O.T. Manual on Drainage Design for Highways. All flared end sections under or adjacent to roadways with a posted speed in excess of 25 mph shall be safety end sections per Georgia D.O.T. standards.

Sec. 1117.10. **Catch basins and storm sewer structures.**

a. All catch basins and storm sewer structures shall be designed and constructed in compliance with Georgia D.O.T. Specifications and shall be Georgia D.O.T. Standard 1033D, 1034D, or 1019.

b. The use of a Standard 1019 shall be excluded from turnarounds and the low point of sag vertical curves draining more than 300 feet of gutter. Drainage calculations and design data are required for the use of a Standard 1019.

c. All drainage structures shall be constructed of reinforced precast concrete, 4-foot diameter or larger.

d. All 1033D and 1034D drainage structures shall require a reinforced precast "Round to Square" adapter for additional throat support.

e. All junction boxes shall include precast adapters and heavy duty traffic rated ring and covers. All junction boxes shall include approved steps, spaced 12 inches on center vertically, to allow safe access by maintenance personnel.

f. All storm sewer structures shall be reinforced precast or poured in place reinforced concrete. Masonry structures are not allowed unless authorized in writing by the City Engineer/ Public Works Director.

g. No length of pipe shall exceed 200 feet without intermediate structures.

h. In certain instances where rolled or "Hollywood" curb is utilized, the City Engineer/ Public Works Director may require the use of 1033F and 1034F catch basins.

i. All structures shall have poured inverts to minimize accumulation of water and sediment in the structure.

j. All structure covers shall be cast to read "City of Bogart Storm Sewer, Dump No Waste – Drains to Stream".

Sec. 1117.11. **Timing of installation.**

Construction of the stormwater system shall be initiated as part of the grading of the site. Stormwater detention facilities shall be constructed prior to the installation of any other site improvements, and may be utilized under proper design as sedimentation basins during development. Installation of all other storm drainage pipes, culverts, headwalls, and ditches shall be coordinated with the construction of streets and other site improvements, as appropriate, in accordance with an approved Stormwater Management Plan.

Sec. 1117.12. **Maintenance responsibilities.**

a. The developer shall be responsible for removing temporary structures or facilities at the completion of the construction.

b. It shall be the responsibility of the developer to maintain all facilities required by the Stormwater Management Plan during construction and for a maintenance period following approval of the final subdivision plat or issuance of a certificate of occupancy, as applicable. The maintenance period shall coincide with the maintenance period required under the Required Improvements Section of the Project Design and Construction Standards Article of this Development Code regarding streets and drainage.

c. Should an owner or developer, whichever is the responsible party, fail to maintain the stormwater management facilities in a state of service intended by the Stormwater Management Plan, then the City shall notify the responsible party in writing of the deficiencies and specific minimum maintenance requirements to remedy such deficiencies.

Sec. 1117.13. **Stormwater discharge management.**

a. Stormwater management inspection and maintenance agreements.

The applicant or owner of the site must execute an inspection and maintenance agreement, which shall be binding on all subsequent owners of the site, for any land development activity requiring a stormwater management facility or practice hereunder and for which the City requires ongoing maintenance.

(1) Prior to the submission of the final plat for approval, or request for a Certificate of Occupancy where a final plat is not required, the owner shall record the inspection and maintenance agreement in the deed records of the Clerk of Court. The owner shall provide a copy of the recorded agreement to the City Engineer/ Public Works Department with the final plat, or request for Certificate of Occupancy where a final plat is not required. The final plat shall have a notation referencing the deed book number and page of the recorded inspection and maintenance agreement indicating that individual lot owners are subject to the terms and conditions of said agreement.

(2) The inspection and maintenance agreement be binding on all affected property, shall run with the land, and shall identify by name or official title the person(s) responsible for carrying out the inspection and maintenance. Responsibility for the operation and maintenance of the stormwater management facility or practice shall remain with the property owner and shall pass to any successor owner. If portions of the land are sold or otherwise transferred, legally binding arrangements shall be made to pass the inspection and maintenance responsibility to the appropriate successors in title. These arrangements shall designate, for each portion of the site, the person to be permanently responsible for its inspection and maintenance.

(3) As part of the inspection and maintenance agreement, a schedule shall be developed for when and how often routine inspection and maintenance will occur to ensure proper function of the stormwater management facility or practice. The agreement shall also include plans for annual inspections to ensure proper performance of the facility between scheduled maintenance activities and shall also include remedies for the default thereof.

b. Long-term inspection and maintenance of stormwater facilities and practices.

(1) Stormwater management facilities and practices which are subject to an inspection and maintenance agreement shall be inspected and maintained on a routine basis by the responsible person in accordance with the approved inspection and maintenance agreement. Parties responsible for the operation and maintenance of a stormwater management facility shall maintain records of all maintenance and repairs, and provide copies of said records to the City Engineer/ Public Works Department.

(2) In the event that the stormwater management facility has not been maintained, the City shall notify the responsible person in writing of the deficiencies, describe the required corrective action, and the time period to have the deficiencies corrected.

(3) If the responsible person fails to correct the deficiencies within the specified time frame, the City, or its agent, may enter upon the property and make, at the owners' expense, the necessary repairs or corrections to the system.

(4) In the event deficiencies constitute an imminent danger to public health or public safety, or threatens downstream water resources, the City, or its agent, is authorized to enter upon the subject private property, without giving prior notice, to take any and all measures necessary to abate the violation and/or restore the function of the stormwater facilities at the owners' expense.

c. Access and inspection of properties and facilities.

(1) The owners of property containing stormwater management facilities, detention facilities, or retention facilities shall allow unimpeded access for the City to conduct inspections of the facilities. Inspections may be conducted by the City Engineer/ Public Works Department at any time for any reasonable basis, including, but not limited to: routine inspections, random inspections, inspections based upon complaints or other notice of possible violations, and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; measurement of discharges, location measurements, surveying, sampling of surface and ground waters; and evaluations of the condition of stormwater management facilities and practices.

(2) Any temporary or permanent obstruction that inhibits access to the property or facility to be inspected shall be promptly removed at the written or oral request of the City and shall not be replaced. The costs of clearing such access shall be borne by the owner or operator.

d. Easements.

The owner of property containing a drainage easement shall not allow or cause to be deposited any material which causes a physical obstruction in the easement, including, tree trimmings, and leaves; impervious cover; or any other material that may block the flow of water or otherwise disrupt proper function of the stormwater management system. All drainage easements shall be kept clear of obstructions along the entire length of the easement whether it be a buried pipe, ditch or other facility contained within the easement. The property owner shall remove any such materials existing prior to, or installed after, the effective date of this Division.

Sec. 1118. Violations, enforcement and penalties.

Sec. 1118.01. **Violations.**

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this Division. Any person who has violated or continues to violate the provisions of this Division, may be subject to the enforcement actions outlined in this section or may be restrained by injunction or otherwise abated in a manner provided by law. Each act of violation and each day during which violation or failure or refusal to comply continues shall be a separate violation. Unreasonable delays in allowing the City, or its agent, access to the property is a violation of this Division.

Sec. 1118.02. **Notice of violation.**

Whenever the City finds that a violation of this Division has occurred, the City may order compliance by written notice of violation.

a. The notice of violation shall contain:

   (1) The name and address of the alleged violator;

   (2) The address when available or a description of the building, structure or land upon which the violation is occurring, or has occurred;

   (3) A statement specifying the nature of the violation;

   (4) A description of the remedial measures necessary to restore compliance with this Division and a time schedule for the completion of such remedial action;

   (5) A statement advising that if the violator fails to remediate or restore the affected property within the established deadline, the work will be done by the City or a contractor and the expense thereof shall be charged to the violator; and

   (6) A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed.

b. Such notice may require without limitation:

   (1) The performance of monitoring, analyses, and reporting;

   (2) The elimination of illicit discharges and illegal connections;

   (3) That violating discharges, practices, or operations shall cease and desist;

   (4) The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;

   (5) Payment of costs to cover administrative and abatement costs; and,

   (6) The implementation of pollution prevention practices.

Sec. 1118.03. **Costs of abatement of the violation.**

a. If the violator fails to correct the violation within the specified time frame, the City, or its agent, may enter the property and take, at the violator's expense, any and all measures necessary to abate the violation and/or restore the property.

b. Following completion of corrective action, the City shall send to the violator an invoice for the costs incurred to correct the violation and/or restore the property. If the amount due

is not paid within 30 days, the charges shall become a special assessment against the property, and shall constitute a lien on the property for the amount of the assessment.

Sec. 1118.04. **Civil penalties.**

A person who has violated, or continues to violate, any provisions of this Division shall be liable to the City for a maximum penalty of $1,000 per violation, per day.

Sec. 1118.05. **Remedies not exclusive.**

a. The remedies listed in this Division are not exclusive of any other remedies available under any applicable Federal, State or local law and the City may seek cumulative remedies.

b. The City may recover all attorneys' fees, court costs and other expenses associate with enforcement of this Division, including sampling and monitoring expenses.

DIVISION III. GRADING AND DRAINING OF INDIVIDUAL BUILDING SITES.

Sec. 1119. Authority and responsibility.

The City of Bogart hereby sets forth the minimum standards for establishing proper drainage during the development of property situated within the areas of the City of Bogart, Georgia. Matters set forth herein shall be considered supplementary of the existing building codes adopted in City of Bogart, Georgia, and to the extent there is any conflict with the provisions hereof and the provisions of any such building code, the stricter standards shall apply.

Sec. 1120. Definitions relating to grading and draining of individual building sites.

Unless specifically defined below, a word or phrase used in this 0 shall be interpreted so as to give it the meaning in common usage and to give this 0 its most reasonable application.

Driveway Grade: The grade of the centerline of driveway measured at its steepest point.

Easement: A grant by a property owner of the use of land for a specific purpose or purposes by the general public, or a corporation or a certain person or persons.

Gradient: Slope.

Gradient Formula: d = gxl/100 where d is vertical difference in elevation in feet; l is horizontal distance in feet; and g is slope or gradient expressed as a percent.

Infiltration: 1) The use of pervious surfaces to allow rainfall to soak into the ground on site. 2) The process of percolating stormwater runoff into the subsoil.

Intensity of Rainfall Event: The rate at which rain is falling at any given instant during the life of a rainfall event expressed in inches per hour.

Parcel: See "Lot of Record."

Return Frequency Storm: The statistically expected time interval between recurrences of a storm of an equal or greater intensity for a given duration.

Private Walkway: That portion of "on-site" development that provides pedestrian access through the site to a building or other destination.

Surface Water: The surface drainage of water, its management, control, transportation, storage, and disposal.

Swale: A shallow lineal depression with a parabolic cross-section and gently sloped sides.

Public Utilities: Water, gas, sanitary and storm sewer, electrical and communications lines and facilities, and improved drainage facilities.

Sec. 1121. Objective.

a. Drainage of surface water should be provided away from all sides of all buildings and off the lot in a manner that will:

   (1) Minimize the possibility of dampness in basements and crawl spaces;

   (2) Prevent adverse supporting soil behavior;

   (3) Prevent soil erosion; and

   (4) Prevent standing (or ponding) of water on site.

b. Walks, driveways, retaining walls and other improvements should be constructed so as not to interfere with drainage. Required walks should not be used as drainage channels.

   Site grading and drainage should:

   (1) Provide suitable access from the abutting street to the dwelling and any accessory buildings;

(2) Provide immediate diversion of water away from buildings and off the site;

(3) Avoid concentrating runoff onto neighboring properties where erosion or other damage may be caused;

(4) Provide usable outdoor space for occupants; and

(5) Minimize erosion.

The Georgia Erosion and Sedimentation Act of 1975, (O.C.G.A. 12-7-1 *et seq*., as amended, where applicable, applies.

Sec. 1122. Finished grading.

a. All unpaved lot areas, except those preserved in an appropriate natural condition, should be fine graded to provide smooth even surfaces conforming to the elevations specified below. All debris should be removed prior to fine grading.

b. Minimum protective slope. All walls and foundations of buildings and any water-supply well should be provided with protective slopes to assure immediate drainage and diversion of surface water away from these structures and off the site.

c. The finish grading should:

(1) Provide a minimum fall of 6 inches away from the structure in 10 feet, except as restricted by side lot lines or other major considerations, without regard to soil type or ground frost conditions. The horizontal length of such slopes may be reduced as necessary at building corners and side yards.

(2) Provide at least 6 inches in 25 feet (2% gradient) in all other unpaved areas, subject to ground frost, expansive soils, or collapsible soils, or at least 3 inches in 25 feet (1% gradient) in unpaved areas not subject to such conditions.

(3) If minimum slopes cannot be attained, paved gutters or other drainage structures may be installed as required by the inspection office.

(4) All unpaved areas should slope continuously at the above gradients to lower elevations off site, or to a drainage structure on the lot.

(5) Drainage swales or valleys formed by intersecting slopes should have adequate depth, width and longitudinal gradient to carry away the maximum predictable volume of storm water runoff based on a one hundred year return frequency. In no instance shall swales be positioned over sewage infiltration fields.

(a) Gradients of unpaved swales should not be less than required above for other unpaved areas.

(b) Surface erosion protection should be in place to prevent accumulation of water in critical drainage swales.

(6) Where catch basins or inlets are installed, other than at required basements areaways, finish grade elevations of adjoining areas should provide for emergency surface overflow so that, in event of failure of catch basins or inlets, buildings and window wells (or areaways) will be protected against flooding.

(7) Areaways for basement windows, entrances, and garage entrances should be provided with effective drainage facilities. Catchment areas should be as small as possible and must be protected from overflow of stormwater from adjacent areas.

(8) Roof drainage should discharge at least 5 feet away from building walls when expansive, collapsible or erodable soils are present.

d. Height and steepness of slopes and maximum gradients of unpayed drainage channels should be such as can be satisfactorily maintained without erosion or land slippage and should provide reasonable access to and around the structure.

(1) For access around buildings and for maintenance of building and lot improvements, an area generally at least 4 feet wide with a gradient away from the building no steeper than 1 in 10 (10% gradient), should be provided.

(2) Where considered necessary by the inspection office, precautionary measures should be taken to stabilize the soil (e.g., retaining walls, sodding or planting).

e. Suitable drainage structures, such as paved gutters, drain inlets and subsurface drain lines, should be installed, where necessary, to protect against dampness, flooding, erosion or other damage by surface water or ground water.

(1) Drainage structures should be properly connected to adequate outlets that are protected by recorded permanent easements, if required.

(2) Perimeter foundation drains are necessary on all houses with basements or potentially habitable living space below finish exterior earth grade or in other situations where water and/or soil conditions warrant their use. Outlets must not permit backflow into subsurface drains.

Sec. 1123. Walks, steps and driveways.

a. A walk and any necessary step(s) should provide safe and convenient use from a dwelling directly to the street or to a driveway connected to street. Walk and step construction should be of durable and appropriate material, on stable adequately-drained subgrade or bed.

b. Walk design.

(1) The gradient should not be steeper than 1 in 20 (5%) in areas subject to frequent freezing or 1 in 10 (10%) in other areas.

(2) Cross-slope should be adequate for immediate drainage of surface water off the walk; required walk must not be used as a drainage channel.

(3) Walk surfaces should be at or below adjacent ground elevations. .

c. Step design.

(1) Width of steps should not be less than the width of the walk that is served.

(2) A single step in a walk and any flight of steps of more than 5 feet total rise should be avoided wherever practicable; a substantial handrail of durable construction must be provided if there is more than a 30-inch rise in a single flight.

d. Driveways.

Driveways should be provided from the street to the garage or carport, if any; if no garage or carport, a. Driveway will generally extend to the rear line of the dwelling. In case of unusual difficulty or hardship, other parking space acceptable to the inspection .office may be provided. Construction should be with suitable subgrade, base, drainage and surfacing so as to be durable under the use and maintenance contemplated.

(1) The longitudinal gradient of the driveway should not be less than 1 percent, nor steeper than permitted for walks if the driveway is also used as a required walk and, if used only as a driveway, no less than 1 percent and no steeper than 14 percent. Maximum gradient shall be determined at the steepest point. Crown, or cross slope, should not be greater than 5 percent.

(2) Grade transitions should be provided at top and bottom of steep driveways to prevent dragging of vehicle undercarriages or bumper guards.

(3) The gradient of a required parking space should not be steeper than 5 percent nor less than 1 percent.

(4) Driveway culvert piping shall be a minimum of 15 inches in diameter installed with an absolute minimum of 1¼ feet of cover. The minimum slope shall be 1 percent. Said pipe shall extend a minimum distance of 4 feet to each side of the area

serviced. Rip-rap of number one stone shall be installed at the out invert of said pipe for a distance of 3 linear feet, where required.

Sec. 1124. Access to buildings and non-dwelling facilities.

a. Each dwelling shall have safe and convenient pedestrian access from street to the dwelling.

b. Each dwelling shall have convenient access for service and the provision of utilities.

Sec. 1125. Ground water.

Buildings, structures, paved areas, driveways, and utilities shall be located on the site in such a way as to reasonably minimize ground water hazards.

Sec. 1126. Drainage and flood hazard exposure.

a. The minimum grades at buildings and at openings into basements shall be at elevations which prevent adverse effects by water or water entering basements from flood levels.

b. Protection shall be equivalent to a 50-year return frequency after full development. The floor elevations of all habitable space shall be above runoff and flood levels equivalent to a 100-year return frequency after full development and as specified in the Flood Damage Prevention regulations of this Article.

Sec. 1127. Special conditions.

When special conditions exist or arise during construction that were unforeseen and that necessitate precautionary or hazard mitigating measures, the inspection office shall require corrective work to mitigate potential adverse effects from the special conditions as may be necessary. Special conditions include rock formations, unstable soils or slopes, high ground water levels, springs, or other conditions that may adversely affect a property. It shall be the property owner's responsibility to assure proper design, construction and satisfactory performance where such are present.

DIVISION IV. FLOOD DAMAGE PREVENTION.

Sec. 1128. Purpose and Intent.

Sec. 1128.01. **Findings of fact.**

a. The flood hazard areas of the City are subject to periodic inundation that results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.

b. These flood losses are caused by the occupancy in flood hazard areas by uses vulnerable to floods, which are inadequately elevated, flood-proofed or otherwise protected from flood damages, and by the cumulative effect of obstructions in floodplains causing increases in flood heights and velocities.

Sec. 1128.02. **Statement of purpose.**

It is the purpose of this Section to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

a. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;

b. Restrict or prohibit uses which are dangerous to health, safety and property due to water or erosion hazards, which result in damaging increases in erosion or in flood heights or velocities;

c. Control filling, grading, dredging and other development which may increase erosion or flood damage; and

d. Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands.

e. Control the alteration of natural floodplains, stream channels and natural protective barriers which are involved in the accommodation of floodwaters;

Sec. 1128.03. **Objectives.**

The objectives of this Section are to:

a. Protect human life and health;

b. Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines and bridges located in floodplains;

c. Help maintain a stable tax base by providing for sound use and development of flood prone areas in such a manner as to minimize future flood blight areas; and

d. Minimize expenditure of public money for costly flood control projects;

e. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;

f. Minimize prolonged business interruptions;

g. Ensure that potential homebuyers are notified that property is in a flood area.

Sec. 1129. Definitions related to flood damage prevention.

Addition to an Existing Building: Any walled and roofed expansion to the perimeter of a building in which the addition is connected by a common load bearing wall other than a firewall. Any walled and roofed addition, which is connected by a firewall or is separated by independent perimeter load bearing walls, is new construction.

Area of Shallow Flooding: A designated AO or AH zone on the flood insurance rate map (FIRM) with base flood depths from one to three feet, or where a clearly deemed channel does

not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

Area of Special Flood Hazard: The land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year.

Base Flood: The flood having a one percent chance of being equaled or exceeded in any given year (i.e., 100-year flood).

Base Flood Elevation: The elevation shown on the Flood Insurance Rate Map for Zones AE, AH, A1-A30, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO, V1-V30, and VE that indicates the water surface elevation resulting from a flood that has a one percent chance of equaling or exceeding that level in any given year.

Basement: Any area of the building having its floor subgrade (below ground level) on all sides.

Critical Facility: Any public or private facility, which, if flooded, would create an added dimension to the disaster or would increase the hazard to life and health. Critical facilities include:

a. structures or facilities that produce, use, or store highly volatile, flammable, explosive, toxic, or water-reactive materials;

b. hospitals and nursing homes, and housing for the elderly, which are likely to contain occupants who may not be sufficiently mobile to avoid the loss of life or injury during flood and storm events

c. emergency operation centers or data storage centers which contain records or services that may become lost or inoperative during flood and storm events; and

d. generating plants, and other principal points of utility lines.

Development: Any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavating, drilling operations, and storage of materials or equipment.

Elevated Building: A non-basement building built to have the lowest floor of the lowest enclosed area elevated above the ground level by means of solid foundation perimeter walls, pilings, columns, piers, or shear walls adequately anchored so as not to impair the structural integrity of the building during a base flood event.

Existing Construction: For the purposes of flood damage prevention requirements, any structure for which the start of construction commenced before adoption of the first flood damage prevention ordinance or regulation in the county (July 17, 1989).

Existing Manufactured Home Park or Subdivision: A manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum the installation of utilities, the construction of streets, and final site grading or the pouring of concrete pads) is completed before July 17, 1989.

Expansion to an Existing Manufactured Home Park or Subdivision: The preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed, including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads.

Flood and Flooding: A general and temporary condition of partial or complete inundation of normally dry land areas from: (1) the overflow of inland or tidal waters; or (2) the unusual and rapid accumulation or runoff of surface waters from any source.

Flood Hazard Boundary Map (*FHBM):* The official map issued by the Federal Emergency Management Agency where the areas of special flood hazard have been designated as Zone A.

Flood Insurance Rate Map (*FIRM):* The official map of a community on which the Federal Emergency Management Agency has delineated both the areas of special flood hazard and the risk premium zones applicable to the community.

Flood Insurance Study: The official report provided by the Federal Emergency Management Agency evaluating flood hazards and containing flood profiles and water surface elevations of the base flood.

Flood Plain: Any land area susceptible to flooding.

Flood Proofing: Any combination of structural and non-structural additions, changes, or adjustments to structures, which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

Floodway: The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.

Freeboard: A factor of safety usually expressed in feet above a flood level for purposes of floodplain management. "Freeboard" tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization of the watershed.

Functionally Dependent Use: A use that cannot perform its intended purpose unless it is located or carried out in close proximity to water.

Highest Adjacent Grade: The highest natural elevation of the ground surface, prior to construction, next to the proposed foundation of a building.

Historic Structure: Any structure that is:

1. Listed individually in the National Register of Historic Places (a listing maintained by the U.S. Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register:

2. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district:

3. Individually listed on a state inventory of historic places and determined as eligible by states with historic preservation programs which have been approved by the Secretary of the Interior; or

4. Individually listed on a local inventory of historic places and determined as eligible by communities with historic preservation programs that have been certified either: a) By an approved state program as determined by the Secretary of the Interior, or b) Directly by the Secretary of the Interior in states without approved programs.

Lowest Floor: The lowest floor of the lowest enclosed area, including a basement. An unfinished or flood resistant enclosure, used solely for parking of vehicles, building access, or storage, in an area other than a basement, is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of other provisions of this code.

Manufactured Home: A building, transportable in one or more sections, built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. The term also includes park trailers, travel trailers, and similar transportable structures placed on a site for 180 consecutive days or longer and intended to be improved property.

Manufactured Home Park or Subdivision: A parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

Mean Sea Level: The average height of the sea for all stages of the tide. It is used as a reference for establishing various elevations within the floodplain. For purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929 or other datum, to which base flood elevations shown on a community's Flood Insurance Rate Map are referenced.

National Geodetic Vertical Datum (NGVD): As corrected in 1929, is a vertical control used as a reference for establishing varying elevations within the flood plain.

New Construction: Structures for which the "start of construction" commenced after April 17. 1995 and includes any subsequent improvements to such structures. For floodplain management purposes, "new construction" means structures for which the "start of construction" commenced after July 17, 1989, and includes any subsequent improvements to such structures.

New Manufactured Home Park or Subdivision: A manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after adoption of the first flood damage prevention ordinance or regulation in the City (July 17, 1989).

Recreational Vehicle: A vehicle, which is: built on a single chassis; 320 square feet or less when measured at the largest horizontal projection; designed to be self-propelled or permanently towable by a light duty truck; and designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

Start of Construction: The initiation of new construction or a substantial improvement, as follows: (1) **For New Construction**: The date the development permit was issued, provided the actual start of construction, repair, reconstruction or improvement was within 180 days of the permit date. The actual start of construction means the first placement of permanent construction of a building, including a manufactured home, on a site, such as the pouring of slabs or footings, installation of piles, construction of columns, or any work beyond the stage of excavation or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling, nor does it include the installation of streets or walkways; the excavation for a basement, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main building. (Note: accessory structures are not exempt.) (2) **For a Substantial Improvement**: The date the building permit was issued provided the actual start of construction was within 180 days of the permit date. The actual start of construction means the first alteration of any wall, ceiling, floor or other structural parts of a building, whether or not that alteration affects the external dimensions of the building.

Structure: A walled and roofed building that is principally above ground, a manufactured home, a gas or liquid storage tank.

Substantial Damage: Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before damage occurred.

Substantial Improvement: Any combination of repairs, reconstruction, rehabilitation, alteration, or improvements to a building, taking place during a 5-year period, in which the cumulative cost equals or exceeds 50 percent of the market value of the building prior to the start of construction of the improvement. The market value of the building should be: (1) The appraised value of the building prior to the start of the initial repair or improvement; or (2) In the case of damage, the value of the building prior to the damage occurring. This term includes structures that have incurred "substantial damage," regardless of the actual amount of the actual repair work performed. The term does not, however, include (1) those improvements of a building required to comply with existing violations of state or local health, sanitary or safety code specifications which are solely necessary to assure safe living conditions, which have been pre-identified by the Code Enforcement official through enforcement of this Development Code and not solely triggered by an improvement or repair project, or (2) any alteration of a "historic structure" provided that the alteration will not preclude the structure's continued designation as a "historic structure" .

Substantially Improved Existing Manufactured Home Parks or Subdivisions: is where the repair, reconstruction, rehabilitation or improvement of the streets, utilities and pads equals or exceeds 50 percent of the value of the streets, utilities and pads before the repair, reconstruction or improvement commenced.

Violation: The failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, or other certifications, or other evidence of compliance required by this ordinance is presumed to be in violation until such time as that documentation is provided.

Sec. 1130. Basis for establishing areas of special flood hazard.

Sec. 1130.01. Official sources of data.

The areas of special flood hazard identified by the Federal Emergency Management Agency in recent Flood Insurance Study (FIS), dated September 2, 2009, with accompanying maps and other supporting data, and any revision thereto, are adopted by reference and declared to be a part of this Development Code.

Areas of special flood hazard may also include those areas known to have flooded historically or defined through standard engineering analysis by governmental agencies or private parties but not yet incorporated in a FIS.

For those land areas acquired by a municipality through annexation, the current effective FIS dated September 2, 2009, with accompanying maps and other supporting data and any revision thereto, for City of Bogart are hereby adopted by reference.

The Repository for public inspection of the Flood Insurance Study (FIS), accompanying maps and other supporting data is located in the City of Bogart Planning Department.

Sec. 1130.02. Warning and disclaimer of liability.

The degree of flood protection required by this Section is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by manmade or natural causes. This Section does not imply that land outside the areas of special flood hazard or uses permitted within such areas will be free from flooding or flood damages. This Section shall not create liability on the part of the City or by any officer or employee thereof for any flood damages that result from reliance on this Section or any administrative decision lawfully made hereunder.

Sec. 1131. Requirement for development permit.

A Development Permit shall be required in conformance with the provisions of this Section prior to the commencement of any development activities within an area of special flood hazard. See the Procedures and Permits Article of this Development Code for application and approval requirements.

Sec. 1132. Administration.

Sec. 1132.01. Planning Director; designated as administrator.

The Planning Director is hereby appointed to administer and implement the provisions of this Section.

Sec. 1132.02. Planning Director; duties and responsibilities.

The duties of the Planning Director regarding any land within an area of special flood hazard shall include, but not be limited to:

a. Review all Development Permits and proposed developments to assure that the permit requirements of this Section have been satisfied.

b. Review proposed development to assure that all necessary permits have been received from governmental agencies from which approval is required by Federal or State law,

including section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334. Require that copies of such permits be provided and maintained on file.

c. Review all permit applications to determine whether proposed building sites will be reasonably safe from flooding.

d. When Base Flood Elevation data or floodway data have not been provided in accordance with Sec. 1130, then the Planning Director shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a Federal, State or other sources in order to administer the provisions of Sec. 1133.

e. Review and record the actual elevation in relation to mean sea level (or highest adjacent grade) of the lowest floor, including basement, of all new or substantially improved structures in accordance with Sec. 1133.

f. Review and record the actual elevation, in relation to mean sea level to which any new or substantially improved structures have been flood-proofed, in accordance with Sec. 1133.

g. When floodproofing is utilized for a structure, the Planning Director shall obtain certification of design criteria from a registered professional engineer or architect in accordance with Sec. 1133 and 1133.02.b.

h. Make substantial damage determinations following a flood event or any other event that causes damage to structures in flood hazard areas.

i. Notify adjacent communities and the Georgia Department of Natural Resources prior to any alteration or relocation of a watercourse and submit evidence of such notification to the Federal Emergency Management Agency (FEMA).

j. For any altered or relocated watercourse, submit engineering data/analysis within six (6) months to the FEMA to ensure accuracy of community flood maps through the Letter of Map Revision process. Assure flood carrying capacity of any altered or relocated watercourse is maintained.

k. Where interpretation is needed as to the exact location of boundaries of the areas of special flood hazard (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), the Planning Director shall make the necessary interpretation based on available engineering data or expert advice. Any person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this Development Code. Such interpretation, once approved, shall be filed as a Letter of Map Revision (LOMR) by the Planning Director with FEMA.

l. All records pertaining to the provisions of this Section shall be maintained in the office of the Planning Director and shall be open for public inspection.

Sec. 1133. Provisions for flood hazard reduction.

Sec. 1133.01. General standards.

In all areas of special flood hazard the following provisions are required:

a. New construction and substantial improvements of existing structures shall be anchored to prevent flotation, collapse or lateral movement of the structure.

b. New construction and substantial improvements of existing structures shall be constructed with materials and utility equipment resistant to flood damage.

c. New construction or substantial improvements of existing structures shall be constructed by methods and practices that minimize flood damage.

d. Elevated buildings.

All new construction or substantial improvements of existing structures that include any fully enclosed areas formed by foundation and other exterior walls below the base flood elevation shall be designed to preclude finished living space and designed to allow for the

entry and exit of floodwaters to automatically equalize hydrostatic flood forces on exterior walls.

(1) Designs for complying with this requirement must either be certified by a professional engineer or architect or meet the following minimum criteria:

(a) Provide a minimum of two openings having a total net area of not less than 1 square inch for every square foot of enclosed area subject to flooding.

(b) The bottom of all openings shall be no higher than 1 foot above grade.

(c) Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwaters in both directions.

(2) Electrical, plumbing, and other utility connections are prohibited below the base flood elevation.

(3) Access to the enclosed area shall be the minimum necessary to allow for parking vehicles (garage door) or limited storage of maintenance equipment used in connection with the premises (standard exterior door) or entry to the living area (stairway or elevator).

(4) The interior portion of such enclosed area shall not be partitioned or finished into separate rooms.

e. All electrical, heating, ventilation, plumbing, air conditioning equipment and other service facilities shall be designed and located so as to prevent water from entering or accumulating within the components during conditions of flooding.

f. Manufactured homes shall be anchored to prevent flotation, collapse or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This standard shall be in addition to and consistent with applicable State requirements for resisting wind forces.

g. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system.

h. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters.

i. On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.

j. Any alteration, repair, reconstruction or improvement to a structure that does not comply with the provisions of this Section shall be undertaken only if such non-conformity is not furthered, extended or replaced.

Sec. 1133.02. **Specific standards.**

In all areas of special flood hazard, the following provisions are required.

a. New construction or substantial improvement.

Where base flood elevation data are provided, new construction and/or substantial improvement of any structure (or manufactured home) shall have the lowest floor, including basement, elevated no lower than 1 foot above the base flood elevation. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the equalization of the flood hydrostatic forces on both sides of the exterior walls shall be provided in accordance with Sec. 1133.01.d, standards for elevated buildings, above.

(1) All heating and air conditioning equipment and components (including ductwork), all electrical, ventilation, plumbing, and other service facilities shall be elevated at or above one foot above the base flood elevation.

b. Nonresidential construction.

New construction or the substantial improvement of any structure located in A1-30, AE, or AH zones, may be flood-proofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be water tight to 1 foot above the base flood elevation, with walls substantially impermeable to the passage of water, and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above, and shall provide such certification to the Planning Director as set forth above and in Sec. 1132.02.f.

c. Standards for manufactured homes and recreational vehicles.

Where base flood elevation data are available:

(1) All manufactured homes placed or substantially improved on: 1) individual lots or parcels, 2) in new or substantially improved manufactured home parks or subdivisions, 3) in expansions to existing manufactured home parks or subdivisions, or 4) on a site in an existing manufactured home park or subdivision where a manufactured home has incurred "substantial damage" as the result of a flood, must have the lowest floor including basement, elevated no lower than one feet above the base flood elevation.

(2) Manufactured homes placed or substantially improved in an existing manufactured home park or subdivision may be elevated so that either:

(a) The lowest floor of the manufactured home is elevated no lower than one foot above the level of the base flood elevation, or

(b) The manufactured home chassis is elevated and supported by reinforced piers (or other foundation elements of at least an equivalent strength) of no less than 36 inches in height above grade.

(3) All manufactured homes must be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement. See Sec. 1133.01.f.

(4) All recreational vehicles placed on sites must either:

(a) Be fully licensed and ready for highway use, (a recreational vehicle is ready for highway use if it is licensed, on its wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached structures or additions); or

(b) The recreational vehicle must meet all the requirements for "New Construction," including the anchoring and elevation requirements of Sec. 1133.01.f; or

(c) Be on the site fewer than 180 consecutive days.

d. Floodway.

Located within areas of special flood hazard are areas designated as floodway. A floodway may be an extremely hazardous area due to velocity flood waters, debris or erosion potential. In addition, the area must remain free of encroachment in order to allow for the discharge of the base flood without increased flood heights. Therefore, the following provisions shall apply:

(1) Encroachments are prohibited, including earthen fill, new construction, substantial improvements or other development within the regulatory floodway. Development may be permitted however, provided it is demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the encroachment shall not result in any increase in flood levels or floodway widths during a base flood discharge. A registered professional engineer must provide supporting technical data and certification thereof.

(2) ONLY if Sec. 1133.02.d(1) above is satisfied, then any new construction or substantial improvement shall comply with all other applicable flood hazard reduction provisions of this ordinance.

Sec. 1133.03. **Building standards for streams without established base flood elevation and/or floodways (A zones).**

a. Located within the areas of special flood hazard, where streams exist but where no base flood elevation and floodway data has been provided or otherwise obtained from any official source, the following provisions apply:

(1) When base flood elevation and floodway data has not been provided or cannot be obtained from any official source, then the Code Enforcement Director shall obtain, review and reasonably utilize any scientific or historic base flood elevation data available from a federal, state or other source, whether public or private, in order to administer the provisions of this Section.

(2) If base flood elevation data can be determined under Sec. 1133.03.a, the provisions of Sec. 1133.02 shall apply. If such data are not available, then:

(a) No encroachments, including fill material or structures, shall be located within an area equal to the width of the stream or 20 feet, whichever is greater, measured from the top of the stream bank, unless certification by a registered professional engineer is provided demonstrating that such encroachment shall not result in any increase in flood levels during the occurrence of the base flood discharge.

(b) In special flood hazard areas without base flood elevation data, new construction or substantial improvements of existing structures shall have the lowest floor of the lowest enclosed area (including basement) elevated no less than 3 feet above the highest adjacent grade at the building site. Openings sufficient to facilitate the unimpeded movements of floodwaters shall be provided in accordance with the standards for elevated buildings, above.

i. All heating and air conditioning equipment and components (including ductwork), all electrical, ventilation, plumbing, and other service facilities shall be elevated no less than three feet above the highest adjacent grade at the building site.

b. Located within the areas of special flood hazard, where base flood data has been provided without floodways, the following provisions apply:

(1) When floodway data has not been provided or cannot be obtained from any official source, then the Code Enforcement Director shall obtain, review and reasonably utilize any scientific or historic floodway data available from a federal, state or other source, whether public or private, in order to administer the provisions of this Section.

(2) In addition to Sec. 1133.02, the following shall apply:

(a) No encroachments, including fill material or structures, shall be located within an area equal to the width of the stream or twenty (20) feet, whichever is greater, measured from the top of the stream bank, unless certification by a registered professional engineer is provided demonstrating that such encroachment shall not result in any increase in flood levels during the occurrence of the base flood discharge.

(b) No encroachments, including fill material or structures, shall be located within the remaining area of special flood hazard area beyond the limits of the area delineated in 1133.03.b(2)(a) unless certification by a registered professional engineer is provided demonstrating that such encroachment, when combined with all other existing and anticipated development, shall not

result in more than a one (1) foot increase in flood levels at any point in the community during the occurrence of the base flood discharge.

Sec. 1133.04. **Standards for areas of shallow flooding (AO zones).**

Located within areas of special flood hazard are areas designated as shallow flooding areas. These areas have special flood hazards associated with base flood depths of one to three feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate. The following provisions apply in these areas:

a. New construction and substantial improvements.

All new construction and substantial improvements of residential and nonresidential structures shall have the lowest floor, including basement, elevated to the depth number specified on the flood insurance rate map, in feet, above the highest adjacent grade. If no flood depth number is specified, the lowest floor, including basement, shall be elevated at least 3 feet above the highest adjacent grade. Openings sufficient to facilitate the unimpeded movements of floodwaters shall be provided in accordance with the standards for elevated buildings, above.

A registered professional engineer shall certify the lowest floor elevation level and the record shall become a permanent part of the permit file.

b. Nonresidential buildings.

All new construction and substantial improvements of nonresidential structures may be flood-proofed. The structures, together with attendant utility and sanitary facilities, must be designed to be watertight to the specified FIRM flood level plus 1 foot, above highest adjacent grade, with walls substantially impermeable to the passage of water, and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy. A registered professional engineer or architect shall certify in writing to the Code Enforcement Director that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above.

c. Drainage paths.

Drainage paths shall be provided to guide floodwater around and away from any proposed structure.

Sec. 1133.05. **Standards for subdivisions.**

a. All subdivision and/or development proposals shall be consistent with the need to minimize flood damage and shall be reasonably safe from flooding.

b. All subdivision and/or development proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.

c. All subdivision and/or development proposals shall have adequate drainage provided to reduce exposure to flood hazards.

d. For subdivisions and/or developments greater than fifty lots or five acres, whichever is less, base flood elevation data shall be provided for subdivision and all other proposed development, including manufactured home parks and subdivisions. Any changes or revisions to the flood data adopted herein and shown on the FIRM shall be submitted to FEMA for review as a Conditional Letter of Map Revision (CLOMR) or Conditional Letter of Map Amendment (CLOMA), whichever is applicable. Upon completion of the project, the developer is responsible for submitting the "as-built" data to FEMA in order to obtain the final LOMR.

Sec. 1133.06. **Standards for critical facilities.**

a. Critical facilities shall not be located in the 100-year floodplain or the 500-year floodplain.

b. All ingress and egress from any critical facility must be protected to the 500-year flood elevation.

Sec. 1134. Variance procedures.

a. For procedures and standards for the granting of a variance from the provisions of this section, Flood Damage Prevention, see the Appeals Article of this Development Code.

b. For procedures for correcting an error in the Flood Hazard Boundary Map, see the Flood Prone Overlay District Section of the Use of Land and Structures Article of this Development Code.