CITY OF BALDWIN, GEORGIA
MINIMUM DEVELOPMENT STANDARDS ORDINANCE

July 1, 2020

FIRST READING 9/28/2020

PASSED 10/12/2020

AN ORDINANCE NO. 2020-0961

An Ordinance of the Mayor and City Council of the City of Baldwin, Georgia, Adopting the City of Baldwin, Georgia Minimum Development Standards Ordinance

WHEREAS, the City of Baldwin (hereinafter referred to as the "City") is a municipality duly formed and existing pursuant to Georgia Law; and

WHEREAS, the 1983 Constitution of the State of Georgia provides for the self-government of municipalities without the necessity of action by the General Assembly, and further provides specifically for the exercise of zoning power by a municipality; and

WHEREAS, the City of Baldwin, Georgia acknowledges and recognizes the requirement and need to follow those procedures promulgated by the Georgia General Assembly in O.C.G.A., Title 36, Chapter 66 in order to constitutionally exercise the planning and zoning authority of the municipality of the City of Baldwin; and

WHEREAS, toward this purpose, this document is identified as the "City of Baldwin, Georgia Minimum Development Standards Ordinance," attached hereto and incorporated herein by reference; and

WHEREAS, the governing authority of the City of Baldwin has read and considered the attached Ordinance; and

WHEREAS, it is the intention of the governing authority to accomplish an orderly and well planned development of the City of Baldwin with due consideration for the public health, safety, welfare, convenience, prosperity and morals of the community; lessening congestion in the streets; securing safety from fire, panic and dangers; providing adequate light and air; avoiding undue concentration of population; facilitating the adequate provision of transportation, water, sewerage, schools, parks and other public requirements; improving the aesthetic appearance of the municipality; protecting the tax base of the City of Baldwin and placing as much of the cost of development as possible on the user rather than on the taxpayers in general; and concerning the value of buildings and encouraging the most appropriate use of the land and buildings throughout the municipality.

NOW, THEREFORE, be it ordained by the Mayor and Council of the City of Baldwin, Georgia, by the lawful authority vested in them as follows:

SECTION 1. That the Ordinance, as may be amended from time to time in the future, is hereby adopted as the "City of Baldwin, Georgia Minimum Development Standards Ordinance," and is attached hereto as if fully set forth herein; and

SECTION 2. That the aforesaid "City of Baldwin, Georgia Minimum Development Standards Ordinance" shall now and hereafter be maintained for public inspection during normal business hours under the custody of the City Clerk of City of Baldwin, Georgia, and that this Ordinance shall be included in the Code of Ordinances of the City of Baldwin, Georgia; and

SECTION 3. All Ordinances or parts of Ordinances in conflict herewith, are to the extent of such conflict repealed.

SECTION 4. If any word, phrase, section, or other portion of this Ordinance is declared or adjudged to be invalid or unconstitutional by any court of competent jurisdiction, then such declaration or adjudication shall not affect the remaining words, phrases, sections, or other portions of this Ordinance, which shall remain of full force and effect as if such word, phrase, section, or other portion so declared or adjudged invalid or unconstitutional were not originally a part of this Ordinance. It is hereby declared to be the intent of the Mayor and Council of the City of Baldwin, Georgia, to provide for separate and divisible parts, and to this end, the provisions of this Ordinance are declared severable. Said Mayor and Council hereby declares that it would have still enacted the remaining words, phrases, sections, or other portions of this Ordinance that are not so declared or adjudged to be invalid or unconstitutional.

SECTION 5. This Ordinance shall become effective immediately upon adoption.

This Ordinance is adopted this 12th day of October 2020.

BALDWIN CITY COUNCIL

BY:

Mayor Joe Elam

Council Member Theron Ayers

Council Member Larry Lewallen

Council Member Alice Venter

Council Member Stephanie Almagno

Attest:

Emily Woodmaster, City Clerk

CITY OF BALDWIN, GEORGIA

MINIMUM DEVELOPMENT STANDARDS ORDINANCE

Excerpts from the Georgia Stormwater Management Manual, 2016 edition; Gwinnett County Unified Development Ordinance, Tenth Edition; Gwinnett County Retaining Walls Construction Code Compliance Guidelines; The Official Code of Hall County, Georgia; Jefferson, Georgia Land Use Management Code; The Code of Ordinances of Jackson County, Georgia; City of Cornelia Minimum Development Standards Ordinance; and Rules of Georgia Department of Community Affairs Developments of Regional Impact have been utilized in the formation of the City of Baldwin, Georgia Minimum Development Standards Ordinance.

1.0 General Provisions

1.1 Adoption of Ordinance
The compilation of ordinances and resolutions passed by the Baldwin City Council is adopted as "City of Baldwin, Georgia Minimum Development Standards Ordinance."

1.2 Incorporation of Ordinances and Resolutions
Any ordinance or resolution not currently included in the City of Baldwin, Georgia Minimum Development Standards Ordinance and passed following the preparation of said compilation is automatically included and incorporated herein by reference.

1.3 Designated Location of Ordinance and Method of Updates
A copy of the City of Baldwin, Georgia Minimum Development Standards Ordinance shall remain on file in the office of the City Clerk at City Hall. It shall be the responsibility of the Clerk or someone authorized by the Clerk to insert in their designated places all ordinances and resolutions that indicate the intent of the Baldwin City Council to make the same a part of the City of Baldwin, Georgia Minimum Development Standards Ordinance when the same have been printed or reprinted in page form, and to remove from the City of Baldwin, Georgia Minimum Development Standards Ordinance all provisions which may be from time to time repealed by the Baldwin City Council. This copy of the City of Baldwin, Georgia Minimum Development Standards Ordinance shall be available for all persons wanting to examine the compilation of ordinances and shall be considered the City of Baldwin, Georgia Minimum Development Standards Ordinance.

1.4 Alteration of Ordinance
It shall be unlawful for any person, firm, corporation, partnership, proprietorship, association, or entity to modify, by additions or deletions, any part or a portion of the City of Baldwin, Georgia Minimum Development Standards Ordinance or to alter the City of Baldwin, Georgia Minimum Development Standards Ordinance in any manner whatsoever which will cause the law of Baldwin, Georgia, to be misrepresented thereby. Any person, firm, corporation, partnership, proprietorship, association, or entity violating any provision of the City of Baldwin, Georgia Minimum Development Standards Ordinance as the same exists or as it may hereinafter be amended, or failing to meet the requirements of the City of Baldwin, Georgia Minimum Development Standards Ordinance as the same exists or as it may hereafter be amended, shall be guilty of a misdemeanor, amenable to the process of the City of Baldwin Municipal Court, and upon conviction, shall be punished as provided in the City of Baldwin, Georgia Minimum Development Standards Ordinance for each violation in the discretion of the court.

1.5 Definitions
For the purposes of this compilation of ordinances:
Administrator is the person employed by the city to fulfill the duties of City Administrator as then defined.
City is Baldwin, Georgia.
City's designee is an engineering professional designated by the City of Baldwin.

Council is the Baldwin, Georgia City Council. "All its members" means the total number of council members holding office including the Mayor.
Law denotes applicable federal law, the constitution and statutes of the State of Georgia, the ordinance of the city, and, when applicable, any and all rules and regulations which may be promulgated thereunder.
May is permissive.
Must and *shall* are each mandatory.
Oath includes an affirmation or declaration in all cases in which, by law, an affirmation may be substituted for an oath, and in such cases the words "swear" and "sworn" shall be equivalent to the words "affirm" and "affirmed."
Owner, applied to a building or land, includes any part owner, joint owner, tenant in common, joint tenant, or tenant by the entirety, of the whole or a part of such building or land.
Person includes a natural person, joint venture, joint stock company, partnership, proprietorship, association, club, company, corporation, business, trust, organization, or the manager, lessee, agent, servant, officer or employee of any of them.
Personal property includes money, goods, belongings, things in action and evidences of debt.
Preceding and *following* mean next before and next after, respectively.
Property includes real and personal property.
Real property includes lands, tenements, and hereditaments.
Road or *street* includes all roads, streets, highways, avenues, lanes, alleys, courts, places, squares, curbs, or other public ways in the city of Baldwin which have been or may hereafter be dedicated and open to public use, or such other public property so designated in any law of this state.
Sidewalk is that portion of a right-of-way between the back of curb and the adjacent property line intended for pedestrian use.
State means the State of Georgia.
Tenant and *occupant,* applied to a building or land, include any person who occupies the whole or a part of such building or land, whether alone or with others.
Written includes printed, typewritten, mimeographed, multigraphed, or otherwise reproduced in permanent visible form.

1.6 References to Titles
Use of the title of any official, employee, department, or council member means that official, employee, department, or council member of the city.

1.7 Interpretation of Language
All words and phrases shall be interpreted according to the common and approved usage of the language, but technical words and phrases and such others as may have acquired an unusual and applicable meaning in the law shall be interpreted and understood according to such unusual and applicable meaning.

1.8 Grammatical Interpretation
The following grammatical rules shall apply in the ordinances and resolutions of the city unless it is apparent from the context that a different construction is intended:
A. *Gender.* Each gender includes the masculine and feminine genders.

B. *Singular and plural.* The singular number includes the plural and the plural includes the singular.
C. *Tenses.* Words used in the present tense include the past and the future tenses and vice versa, unless obviously inapplicable.

1.9 Acts by Agent
When an act is required by ordinance or resolution, the same being such that it may be done as well by an agent as by the principal, such requirement shall be interpreted to include all such acts performed by a designated agent.

1.10 Causing, Permitting, Abetting or Concealing Prohibited Act
Whenever in the ordinances or resolutions of the city any act or omission is made unlawful, it shall include causing, allowing, permitting, aiding, abetting, suffering, or concealing the fact of such act or omission.

1.11 Calculation of Time
Except when otherwise provided, the time within which an act is required to be done shall be calculated by excluding the first day and including the last day, unless the last day is Sunday or a holiday, in which case it shall also be excluded and the day following the Sunday or holiday shall be the last day.

1.12 Construction of Provisions
The provisions of the ordinances and resolutions of the city and all proceedings under them are to be interpreted with a view to achieve their objects and to promote justice.

1.13 Repeal Shall Not Revive Any Ordinances
The repeal of an ordinance shall not repeal the repealing clause of an ordinance or revive any ordinance which has been repealed thereby.

1.14 Penalty for Violations
Each and every city ordinance which has been or will be duly passed and enacted by the Baldwin City Council to protect and preserve the public health, safety and welfare, to provide traffic regulations, to regulate and control litter, or to provide for the implementation and enforcement of any power or duty vested in the city governing authority, shall, in the discretion of the court having jurisdiction over such violations of city resolutions, have a penalty or punishment up to the maximum penalty or punishment provided by the City of Baldwin, Georgia Minimum Development Standards Ordinance.

1.15 Penalties Imposed by City of Baldwin Municipal Court

1.15.1 Authority Granted to City of Baldwin Municipal Court
A. O.C.G.A. § 36-1-20 gives the governing authority of each city, for the purpose of protecting and preserving the public health, safety and welfare, authorization to adopt ordinances for the governing and policing of the incorporated areas of the city, violations of which ordinances may be punished by fine or imprisonment or both.

B. O.C.G.A. §§ 15-10-60 and 36-1-20 provide for the punishment that may be imposed by a court exercising jurisdiction over a city ordinance violation.
C. O.C.G.A. § 36-1-20 gives jurisdiction over violations of such city ordinances to the Municipal Court of the City. However, pursuant to O.C.G.A. § 36-1-20(c), jurisdiction over ordinances having to do with traffic offenses shall be in the court or courts having jurisdiction over state traffic offenses.

1.15.2 Maximum Punishment for Violation of Ordinances

A. Maximum sentence. By virtue of the authority of O.C.G.A. §§ 15-10-60 and 36-1-20, the maximum punishment for the violation of any ordinance previously passed by the Baldwin City Council shall be as follows: It shall be unlawful for any person to violate or fail to comply with any ordinance applicable to Baldwin, Georgia; and where no specific penalty is provided therefore or where there is a penalty that is less than a fine not exceeding $1,000.00 or imprisonment for a term not exceeding 60 days or both, the violation of any such provision shall be punished by a fine not exceeding $1,000.00 or imprisonment for a term not exceeding six months' imprisonment or both, provided the judge shall probate not less than 120 days of any sentence imposed, except as otherwise provided by general law. In the event a sentence is revoked, a defendant shall not serve more than 60 days in jail.
B. Suspended sentences. The trial court may suspend the service of the sentence imposed in the case upon such terms and conditions as it may prescribe for the payment of the fine, for performance of community service in lieu of a fine or incarceration, for the payment of restitution to a victim, or other condition relating to the underlying offense. Service of the sentence, when so suspended, shall not begin unless and until ordered by the court having jurisdiction thereof, after a hearing as in cases of revocation of probated sentences, because of the failure or refusal of the defendant to comply with the terms and conditions upon which service of a sentence was suspended.
C. Duration of conditions. Service of all or any part of any sentence suspended upon such conditions may be ordered to commence by the trial court any time before the expiration of one year from the date of the sentence after a hearing and a finding by the court that the defendant has failed or refused to comply with the terms and conditions upon which service of the sentence was suspended.
D. Violations per day. Each day any violation of any provision of this ordinance shall continue shall constitute a separate offense.
E. Misdemeanor punishment. Where in this ordinance any violation shall be deemed punishable as a "misdemeanor," "misdemeanor" shall be defined as an offense, the violation of which shall be punishable as specified for ordinance violations in this section.

1.15.3 Incorporation of O.C.G.A. § 36-1-20 into the City of Baldwin, Georgia Minimum Development Standards Ordinance

Official Code of Georgia Annotated O.C.G.A. §§ 15-10-60 and 36-1-20 shall be incorporated as a part of the City of Baldwin, Georgia Minimum Development Standards Ordinance.

2.0 Streets

2.1 Dedication of Street Right-of-Way

Right-of-way for all existing and proposed public streets within a project shall be dedicated to City of Baldwin.

2.2 Street Improvements

All streets and project access improvements, whether public or private, shall be constructed or improved to the standards as established in the City of Baldwin, Georgia Minimum Development Standards Ordinance. Roadway improvements shall be made in accordance with the details or as otherwise required by the City of Baldwin.

2.3 Minimum Right-of-Way and Street Improvements

A. New Residential Streets in Subdivisions
   1. The right-of-way width shall be a minimum of 50 feet for streets with curb and gutter.
   2. The right-of-way width shall be a minimum of 60 feet for streets without curb and gutter.
   3. Pavement width shall be a minimum of 22 feet (26 feet measured to back of curb).

B. New Streets Not in a Subdivision
   1. The right-of-way width shall be a minimum of 50 feet for streets with curb and gutter.
   2. The right-of-way width shall be a minimum of 60 feet for streets without curb and gutter.
   3. Pavement width shall be a minimum of 24 feet (28 feet measured to back of curb).

C. Standard Cul-de-sac
   1. The right-of-way shall extend to a minimum 60-foot radius measured from the center of the cul-de-sac.
   2. Pavement radius shall be a minimum of 40 feet measured from the center of the cul-de-sac.

D. Island cul-de-sac, option 1. The outside right-of-way shall be a minimum of 13 feet from the back of curb and the total width shall be evenly divisible by ten feet with a variable width taper. The land inside the cul-de-sac island will be entirely City right-of way.

E. Island cul-de-sac, option 2. The right-of-way shall be a minimum of 13 feet from the back-of-curb and the total width shall be evenly divisible by ten feet with a variable width taper. The right-of-way will extend this distance outward from the outside curb and toward the center of the island as measured from the interior curb. The remaining land on the interior of the island will be "common land". "Common land" is land that is set aside for open space or recreational use for the owners of the residential lots in a subdivision, which land is conveyed by the Developer in fee simple absolute title by a warranty deed to trustees whose trust indenture provides that the common land be used for the sole benefit, use and enjoyment of the lot owners, present and future. No lot owner shall have the right to convey his interest in the common land except as an incident of the ownership of a regularly platted lot.

F. Roundabouts. The right-of-way shall extend to a minimum 80-foot radius measured from the center of the roundabout, and the total width shall be evenly divisible by ten feet.

G. Additional right-of-way shall be provided as required to accommodate additional travel lanes, sidewalks, medians, multi-use paths, and underground utilities. Pavement width of additional travel lanes shall be 12 feet.

2.4 Local Streets and Minor Collectors

A. The configuration of local streets shall discourage their use by through traffic. Minor collectors shall be provided to channel through traffic movements within a development as appropriate to the design and a major thoroughfare is not proposed. Minor collectors also may be provided as central routes within large residential subdivisions, as appropriate to the design, based on projected traffic demands exceeding 2,000 trips per day (ADT).
B. Eyebrow cul-de-sac (half cul-de-sacs) will be allowed only at right-angle intersections having an interior angle between 80 degrees and 100 degrees.

2.5 Continuation of Existing Streets

All proposed streets must connect to a City, County, or State maintained road, and have a uniform cross-section for the entire length of the proposed street. Existing streets shall be continued at the same cross-section as required by these regulations.

2.6 Substandard Streets and Road Improvements

In the event that a development has access to a substandard street (i.e., a dirt or gravel road, a road of insufficient width or base in accordance with City standards as specified in this chapter or in disrepair), the following project access improvements shall be required:

A. If the abutting substandard street provides access to the development and is dirt or gravel or of insufficient width or base or in disrepair, the street shall be upgraded to City standards by the Developer to a paved roadway of sufficient width and base from the project entrance to the nearest standard paved road along the route of access.
B. Off-site project access improvements required shall at a minimum, result in a full-section roadway meeting the requirements of a local residential street with drainage ditches as needed. Responsibilities shall be as follows:
    1. The Developer shall design the road and provide the labor, equipment, and materials required for roadway improvements and necessary drainage improvements.
    2. If the City of Baldwin desires the roadway to be improved to a standard greater than that for a local residential street, the City shall provide or pay the cost of the additional materials and labor.
    3. All right-of-way required for these off-site improvements shall be acquired by the Developer at no expense to the City.
    4. In the event that access to a new development is through an existing local City maintained road, the Developer and/or Builder is responsible for any and all damages to the existing road caused by construction traffic or construction activities. The Developer and/or Builder may be required to document existing conditions of this access road prior to any construction, may be required to post a bond or some form of guarantee and make necessary repairs as deemed appropriate by the City of Baldwin.

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

D. Improvements along State Highways
For any development which abuts a State highway or other right-of-way controlled by the State of Georgia, improvements to the roadway and the location and design of any street or driveway providing access from the state highway shall comply with the standards and requirements of the Georgia Department of Transportation. A permit for the proposed access or improvements shall be required to have been approved by the Georgia Department of Transportation and incorporated into the construction drawings for the project prior to issuance of a development permit by the City.

E. Improvements along County Roads
For any development which abuts a County road or other right-of-way controlled by the County, improvements to the roadway and the location and design of any street or driveway providing access from the County highway shall comply with the standards and requirements of the County. A permit for the proposed access or improvements shall be required to have been approved by the County and incorporated into the construction drawings for the project prior to issuance of a development permit by the City.

F. Improvements along City Roads
For any development which abuts a City road or other right-of-way controlled by the City, improvements to the roadway and the location and design of any street or driveway providing access from the City road shall comply with the standards and requirements of the City. A permit for the proposed access or improvements shall be required to have been approved by the City and incorporated into the construction drawings for the project prior to issuance of a development permit by the City of Baldwin.

G. Dead End Streets
   1. A dead end street shall be provided to the boundary of a subdivision where necessary to provide access to a landlocked abutting property, for planned continuity of future circulation, for improved access for public safety vehicles, or for the extension of public water or other utilities to neighboring lands. Such dead end streets shall be designed so as to allow their reasonable extension, and shall be located so as to be reasonably incorporated into a street design for the neighboring property.
   2. Dead end streets on abutting property shall be extended into a proposed subdivision and incorporated into the street design of the development. This requirement may be modified by the City of Baldwin in cases of serious topographical hardship or dissimilar zoning which would create unacceptable land use conflicts between the two developments. This modification may be conditioned on the provision of easements necessary for the extension of public utilities, the provision of cul-de-sac or other permanent turnaround on the dead end street, or the removal of the dead end street back to its nearest intersection.
   3. Where a dead end street (other than a cul-de-sac) serves more than three lots, the developer shall be required to provide a temporary cul-de-sac within the right-of-way. This requirement may be waived if extension of the dead end street is approved and under construction prior to its inclusion in a Final Plat.

4. Where a street dead ends at the property boundary and the street exceeds 1000 feet in length, a permanent cul-de-sac shall be required. Right-of-way to the property boundary shall be required, but the pavement shall not be extended to the property boundary beyond the edge of the paved cul-de-sac turnaround.
5. In residential subdivisions, a dead end ("stub") street required under this subsection to provide access to an abutting property may be exempted from construction of roadway improvements and public utilities under the following circumstances:
   a. No lot within the proposed subdivision will gain access from the "stub" street.
   b. A Concept Plan has not been submitted or approved on the neighboring tract.
   c. The "stub" street shall be fully designed as part of the Development Plans. However, the right-of-way shall only be cleared and rough graded in accordance with the approved plans, and all disturbed areas grassed.
   d. Connections for future extension of all public utilities shall be constructed as part of the subdivision. Curb returns shall be constructed as part of the subdivision. Curb returns shall be provided to the future "stub" street roadway location, and curb and gutter shall be installed across the roadway stub at the right-of-way line (extended).
   e. The right-of-way for the "stub" street shall be dedicated as part of the Final Plat. Slope easements or construction easements, if required by the street design, shall be shown on the Final Plat.

H. Service Roads

Where a development borders on or contains a railroad right-of-way, limited access highway right-of-way, or major thoroughfare, a public street may be required to be constructed and dedicated within the development approximately parallel to and on each side of such right-of-way. Consideration should be given for approach grades and future grade separations in determining distances. Subdivision lots shall not access expressways, freeways, or arterial streets, service roads, and only access an interior street, in which case the City of Baldwin may require double-frontage lots.

2.7 Connections with Future Subdivision Streets

Streets may be reserved at appropriate locations to provide future access to adjoining properties that may be subdivided in the future. Each reserved street connection shall intersect property lines at a 90-degree angle through the adjacent lot.

2.8 Street Names

Street names shall require the approval of the City of Baldwin. Streets that are a continuation of an existing named street or in alignment with an existing named street shall be given the same name as the existing street. Names of new streets shall not duplicate those of existing streets. The developer or builder, or both, shall also confirm the street name with 911 services in order to determine it does not conflict with an existing street name.

2.9 Reserve Strips

Land in private ownership adjacent to public rights-of-way which could control or are intended to control access to streets, alleys, or public lands shall not be permitted unless their control is

given to the City under ownership, dedication, or easement conditions approved by the City Attorney or acceptable to the City of Baldwin. No development shall deny access to abutting properties.

2.10 Additional Width on Existing Street

Subdivisions that abut existing streets or the continuation of existing streets shall dedicate additional right-of-way if necessary to meet the minimum street right-of-way width requirements set forth below:

A. The entire right-of-way shall be provided where any part of the subdivision is on both sides of the existing streets.
B. When the subdivision is located on only one side of an existing street, one-half of the required right-of-way, measured from the centerline of the existing roadway, shall be provided.

2.11 Street Jogs

Street jogs or centerline offsets in the horizontal alignment of streets across intersections of less than 200 feet shall not be allowed.

2.12 Angle of Intersection

Proposed streets shall be located to intersect as nearly as possible at right angles. No street shall intersect with any other street at an angle of less than 80 degrees or at a grade of greater than three percent. This angle and grade must be implemented for a distance of no less than 50 feet, measured from the edge of pavement of the intersecting road. The angle of intersection shall be measured at the intersection of street centerlines.

2.13 Intersection Sight Distance

The intersection sight distance is the sight distance presented to a stopped vehicle entering the intersecting roadway. The sight distance criteria are based on the time required for a vehicle to make a left turn from a stop controlled approach to the highway (AASHTO Case B1). The time to execute the maneuver is based on recommendations contained in NCHRP Report 383, Intersection Sight Distance. The sight distances, for a two-lane road, are the distances traveled at the arterial speed during 7.5 seconds. The time is increased by 0.5 seconds for each additional lane to be crossed. The sight distances given in the table below are for undivided highways. If the highway is divided, the effect of the median should be considered in determining the required sight distance. Based on the conditions, it may be feasible for the crossing maneuver to be done in two stages with a stop in the median. However, the intersection should only be treated in this manner if the signing and marking is accordingly provided. Otherwise, the sight distance requirements should be increased to account for the additional width that must be crossed. Where necessary, slopes shall be lessened and horizontal or vertical curves lengthened to provide the minimum required intersection sight distance. Intersection sight distance must meet current AASHTO design standards.

Intersection sight distance for a passenger vehicle is measured assuming a driver's eye height of 3.5 (three and one-half) feet above the roadway surface 14½ feet from the travel way to an object 3.5 (three and one-half) feet above the intersecting road surface in the approach lane. If there is no posted speed limit then the 85th percentile speed shall be used to determine the minimum intersection sight distance. See AASHTO Green Book, Chapter 9 Intersections, for adjustments due to grades greater than 3 percent and design vehicles other than passenger cars.

PASSENGER VEHICLE INTERSECTION SIGHT DISTANCE TABLE:

Posted Speed Limit (mph)	**Minimum Intersection Sight Distance (feet)**						
	2 lane	3 lanes		4 lanes		5 lanes	
	SDL=SDR	SDL	SDR	SDL	SDR	SDL	SDR
25	280	280	295	280	310	295	335
30	335	335	355	335	375	355	400
35	390	390	415	390	440	415	465
40	445	445	475	445	500	475	530
45	500	500	530	500	565	530	600
50	555	555	590	555	625	590	665
55	610	610	650	610	690	650	730

Where SDL is sight distance to the left and SDR is sight distance to the right.

2.14 Stopping Sight Distance

The stopping sight distance is the length of the roadway ahead that is visible to a driver and shall be sufficient to enable an approaching vehicle traveling at or near the design speed to stop before reaching a stationary object in its path. Minimum stopping sight distance shall be provided to account for vehicles waiting to turn from the existing roadway into the proposed roadway and along all portions of the proposed roadway. Stopping sight distance must meet current AASHTO design standards.

Stopping sight distance for a passenger vehicle is measured assuming the height of the driver's eye is 3.5 (three and one-half) feet and the height of an object to be seen by the driver is 2 (two) feet. If there is no posted speed limit then the 85th percentile speed shall be used to determine the minimum stopping sight distance.

STOPPING SIGHT DISTANCE TABLE:

Posted Speed Limit (mph)	Minimum Stopping Sight Distance (feet)
25	155
30	200
35	250
40	305
45	360
50	425
55	495

2.15 Obstructing Visibility at Intersections

No fence, wall, structure, shrubbery, or other obstruction to vision between the heights of 3 feet and 15 feet, except utility poles, light or street sign standards or tree trunks shall be permitted within 20 feet of the intersection of the right-of-way lines of streets, roads, highways, or railroads.

2.16 Property Lines at Intersections

Property lines at street intersections shall have a minimum radius of 30 feet or miter of not less than 30 feet from the corner of the intersecting right-of-way lines.

2.17 Temporary Dead-End Streets

Temporary dead-end streets shall be provided with a temporary cul-de-sac to turn around which shall meet the construction requirements for design, maintenance, and removal. Sidewalks and curb and gutter are not required. If the absence of curb and gutter on a temporary cul-de-sac creates a drainage issue, then the developer will be required to install appropriate stormwater conveyance system with approval from the City of Baldwin. No lots shall be subdivided off any radius of a temporary cul-de-sac. A performance bond is required and the cul-de-sac must either be removed or completed including curb and gutter and shoulder within the right-of-way prior to final plat approval.

2.18 Median Design

Median width and length proposed by the developer shall be to city specifications. Minimum curb radius shall be five feet. No median shall be approved which contains less than 100 square feet inside the back of curb. Median breaks shall be required at intervals specified by the City of Baldwin.

2.19 Minimum Sight Clearance

Median curb shall be not less than 14 feet from pavement or back of curb of an intersecting street. The median shall not encroach into right-of-way of an intersecting street.

2.20 Pavement Width
Pavement width at the median section shall be 14 feet for residential and commercial streets with 9 foot shoulders.

2.21 Street Tapering around Median
Pavement shall be tapered in accordance with the posted design speed and width of offset per Georgia Department of Transportation standard.

2.22 Structures over Street
Structures over the street are prohibited.

2.23 Planting Materials
Plants and shrubbery shall be low maintenance, disease-resistant materials with branching habits such that plants shall not interfere with vehicular movement and sight distance. Trees planted in medians, island cul-de-sacs, and street rights-of-way must be approved by the City of Baldwin prior to installation. The City of Baldwin may remove median plantings at any time if the plantings pose a traffic or safety problem.

2.24 Maintenance
Once the road, storm drain pipe, and ditches have been accepted by the City, maintenance within the right-of-way will become the responsibility of the City.

Maintenance of a common land median shall be the responsibility of the subdivider, developer, or a homeowners' association. The completed covenants for the subdivision and any documents establishing a property owners' association shall be submitted for review by the City. These documents shall include a provision that will assure maintenance of the median. These documents shall be recorded simultaneously with the final plat and/or prior to the sale of any lots within the subdivision. If the median ceases to be maintained for any reason, the City shall have the option of removing the median without notification if it poses a traffic or safety problem.

2.25 Design Standards for Streets

Design Standard Chart

Requirement	Residential	Nonresidential
Minimum right-of-way width (feet), curbed street	50	50
Minimum right-of-way width (feet), noncurbed street	60	60
Minimum pavement width	22	24
Maximum grade (percent)	15	10
Maximum grade turnaround (percent)	5	3
Maximum grade intersection (feet, measured 50 feet from edge of pavement of intersecting road)	3	3
Minimum grade (percent), curbed street	1.5	1.5
Minimum grade (percent), noncurbed street	1.5	1.5
Minimum curve radius (feet)	125	200
Minimum length, vertical curves (feet), see: Note 1.	120	150
Minimum length, tangents between reverse curves (feet)	50	100
Minimum intersection sight distance (feet)	See Section 2.13	See Section 2.13
Standard turnaround right-of- way diameter (feet)	120	120
Standard turnaround pavement diameter (feet) (Note: 84 feet or 104 feet back of curb to back of curb)	80	100
Minimum cul-de-sac length (feet) (centerline to center of turnaround)	150	150
Minimum pavement edge radius (feet)	30	40
Minimum design speed (mph)	25	See Note 2

Note 1: Sag vertical curves located at stop condition intersections may be as short as 65 feet with City of Baldwin approval for the purposes of minimizing cut.

Note 2: Nonresidential design speed is to be determined by City of Baldwin.

2.26 Vertical Street Alignment

A. All changes in street profile grades having an algebraic difference greater than one percent shall be connected by a parabolic curve having a minimum length (L) equal to the product of the algebraic difference between the grades in percent (A) and the design constant (K) assigned to the street according to its category (i.e., L=KA).

B. Constant (K) values are shown in the table below for both desirable and minimum acceptable ("hardship") conditions. In all cases, the "desirable" value shall be used, unless it cannot be achieved due to topographic conditions beyond the developer's control. In such hardship situations, the City of Baldwin may approve a lesser value to the extent required by the hardship situation, but in no event less than the value shown in the table as "minimum."

Constant (K) Values for Vertical Curves

	Crest Curves		Sag Curves	
Street Type	**Minimum**	**Desirable**	**Minimum**	**Desirable**
Principal Arterial	151	320	136	155
Major Arterial	84	170	96	110
Minor Arterial	44	80	64	70
Major Collector	44	80	64	70
Minor Collector	19	30	37	37
Local	12	20	26	26

2.27 Horizontal Street Alignment

A. All new streets shall adhere to the standards governing horizontal curvature and superelevation as set forth in the table below:

Horizontal Curves

Street Type	Minimum Radius (ft)	Maximum Superelevation
Principal Arterial	1,333	0.06
Major Arterial	833	0.06
Minor Arterial	560	0.04
Major Collector	560	0.04
Minor Collector	300	0.04*
Local	181	0

* No superelevation is allowed on minor collectors internal to residential subdivisions.

B. Superelevation for horizontal curves shall be calculated utilizing the following formula:
R = minimum radius curve
v = vehicle design speed (MPH)
e = rate of superelevation (decimal of a foot rise per foot roadway)
f = side friction factor

$$R = \frac{v2}{15\,(e + f)}$$

Vehicle Design Speed (v)	30	40	50	60
Side Friction Factor (f)	.16	.15	.14	.12

C. Widening section along existing streets shall be designed reflecting existing curvature and superelevation, if any, unless the existing street has been included in a specific design by the city, county or Georgia Department of Transportation which calls for different standards, in which case the project will be coordinated with the overall design.

D. Superelevation runoff. Roadway edge curves shall be provided for tangent runout (bringing edge from a normal crown to centerline elevation) and superelevation runoff (from the end of

tangent runout to the point of design superelevation) in accordance with design standards of the Georgia Department of Transportation.

E. Tangents and compound curves

Between reverse horizontal curves there shall be not less than the minimum centerline tangents shown in the table below unless otherwise specified by the City. Compound radii curves are prohibited. At least the "desirable" length shall be provided unless hardship conditions of topography or property configuration will not allow lengths greater than those shown as "minimum." For compound circular curves, the ratio of the flatter radius to the sharper radius shall not exceed 1.5 to 1.

Tangents

Street Type	Minimum Tangent Length (ft)	Desirable Tangent Length (ft)
Principal Arterial	150	180
Major Arterial	125	150
Minor Arterial	100	120
Major Collector	100	120
Minor Collector	75	90
Local	50	60

Note: Minimum tangents are based on the distance traveled in 1.7 seconds at the design speed for each category of street. Desirable length is based on distance traveled in 2.0 seconds.

2.28 Horizontal and Vertical Clearances

A. Horizontal clearances

1. A shoulder of no less than 11 feet from the back of curb or edge of pavement, appropriately graded and having gentle slopes of not more than 0.5 inch per foot and rounded cross-sectional design shall be maintained along all streets. Beyond the shoulder but within the right-of-way, slopes shall not exceed 1 foot of rise for each 2 feet of horizontal distance on a cut slope, and 1 foot of fall for each 3 feet of horizontal distance on a fill slope.
2. Along all public streets, a clear zone shall be provided per current AASHTO standards wherein nothing may be located above ground level except traffic/street signs, public utility structures, driveways, and mail boxes.
3. At selected locations, such as the outside of a sharp curve a wider clear zone with greater horizontal clearances provided to any roadside obstruction may be required.
4. The Department of Transportation, in accordance with O.C.G.A. § 32-6-51, is authorized to remove or direct the removal of any sign, signal, device, or other structure erected, placed, or maintained on the right-of-way of a public road which because of its nature, construction, or operation constitutes a danger to or interferes with the vision of drivers of motor vehicles.

B. Vertical clearances

Vertical clearance at underpasses shall be at least 14.5 feet over the entire roadway width.

2.29 Island Cul-de-Sac

A. Island cul-de-sac designs may be acceptable with approval from City of Baldwin. Sufficient data must be provided to City of Baldwin to demonstrate that emergency vehicles, school buses, and other vehicular traffic can safely navigate the cul-de-sac. City of Baldwin will also review drainage, sight distance, and other engineering aspects of the island cul-de-sac prior to permitting.
B. Islands inside the perimeter of the cul-de-sac may contain appropriate plantings, landscape berms, and sidewalks, provided all are shown on the preliminary subdivision plans for approval. Stormwater management facilities, such as constructed wetlands or ponds, may be located in the islands, provided the facility offers an aesthetic or recreational benefit to the community. No structures may be located on the island without prior approval by City of Baldwin.
C. The maintenance of the land inside an island cul-de-sac (including stormwater management facilities) shall be the responsibility of the subdivider, developer, homeowner's association, or property owners.

2.30 Roundabouts

Roundabout designs are acceptable, with approval from City of Baldwin. Sufficient data must be provided to City of Baldwin to show that all vehicular traffic up to and including design vehicle WB-67 can navigate the roundabout. City of Baldwin will also review drainage, sight distance, and other engineering aspects of the roundabout prior to permitting.

2.31 Utilities

2.31.1 General Requirements

Applicants may locate all utility facilities underground throughout the subdivision. All existing and proposed utility easements outside of road rights-of-way shall be shown on the preliminary and final plats.

2.31.2 Location

All utilities shall be located in accordance with the standard detail drawing for utility location within the right-of-way of subdivisions and shall be shown on the typical roadway section of the preliminary plans. City of Baldwin requires the utilization of a joint trench for the telephone, fiber optic, and cable lines. No power lines or cables are allowed within the same trench as water and sanitary sewer lines.

2.31.3 Width of Easements along Rear and Side Lot Lines

Utility easements for sanitary sewer lines, water lines, or other such utilities located along rear lot lines or side lot lines or passing through a lot shall be at least 20 feet wide, ten feet on each lot, and wider if necessary.

2.32 Streets to Connect to Publicly Maintained Road

All subdivision streets must connect to a City, State or County maintained public road.

2.33 Dams

The following regulations apply to dams and streets constructed on or near dams:

A. The City will not accept into the City road maintenance system any portion or entire street in which a section of the street crosses over a dam.
B. No street shall be designed or constructed downstream of any dam within the breach floodway of the dam.
C. All dam design plans must be approved by the City of Baldwin and the Department of Natural Resources in accordance with the Safe Dam Act.
D. The City will not accept any dam as an improvement to be maintained by the City. The developer shall provide a maintenance plan for any dam.

2.34 One-Way Streets

A. One-way streets are allowed provided the centerline length is no greater than 400 feet and curve radii are no less than 82 feet. The one-way street must be constructed as a loop road that commences and terminates on the same road.
B. Islands inside the perimeter of the one-way loop road may contain appropriate plantings, landscape berms, and sidewalks, provided all are shown on the preliminary subdivision plans for approval. Stormwater management facilities, such as constructed wetlands or ponds, may be located in the islands, provided the facility offers an aesthetic or recreational benefit to the community. No structures may be located on the island without the prior approval by City of Baldwin.
C. The maintenance of the land inside the one-way loop road shall be the responsibility of the subdivider, homeowner's association, or property owners.

2.35 Property Monuments

All property monuments along the street right-of-way shall be set with a tolerance of 1.0 feet from the constructed street center line.

2.36 Utility Easement Required along Streets

A ten-foot (10 foot) perpetual utility easement for City owned utilities shall be provided on both sides of residential streets and turnarounds where the right-of-way is 50 feet.

2.37 Project Access Improvements

A. Project access improvements for single-family detached, single-family attached, and duplex residential subdivisions.
    1. When property that abuts upon an existing or proposed City road is to be developed or redeveloped as a single-family detached, attached, or duplex subdivision and the City street will provide access to the property, project access improvements to the City road (deceleration lanes, turn lanes, etc.) shall be provided by the Developer as required herein.

2. A deceleration lane shall be required to be provided at each project driveway or subdivision street entrance that is providing street access to a minor collector street or major thoroughfare. In the event a street has an existing or proposed median, and the Developer desires to construct a median break to serve the subdivision, a left turn lane leading to the median break shall be required to be provided by the developer if approved by the City of Baldwin and shall meet the standards contained herein. The preferred spacing for median breaks shall be 2,000 feet between the centerlines of the openings, and the minimum spacing for median breaks shall be 1,000 feet between centerlines of the openings. Other factors will also be considered, such as distance to other median openings, adjacent land use, expected traffic volumes, and the resulting volume of U-turns that are likely to occur without the median opening. Meeting the spacing criteria is not, in itself, an indication that median openings will be allowed.
3. Deceleration lanes shall have a length of 200 feet, with an additional 50 foot taper length, a pavement width of 12 feet (excluding of curb and gutter) and shall be provided with curb and gutter. Additional right-of-way to accommodate the deceleration lane and an 11 foot shoulder measured from back of curb shall be dedicated by the Developer to the City of Baldwin at no cost. Associated stormwater infrastructure as deemed necessary by the construction of the deceleration lane shall also be required.
4. A left turn lane shall be provided into each project driveway or subdivision street that accesses a minor collector or major thoroughfare.
5. Other project access improvements may be required by the City of Baldwin in order to ensure adequate site access, pedestrian access, convenience and safety to the motoring public.
6. The Developer shall be responsible for the relocation of public or private utilities and stormwater infrastructure, as may be occasioned by the required Project Access Improvements.
7. Subdivisions with greater than 24 lots will be required to have a deceleration lane constructed in accordance with current City of Baldwin specifications. The City of Baldwin may waive or require the installation of a deceleration lane for subdivisions regardless of lot number based upon traffic and safety considerations.
8. Left-turn lanes will be constructed in accordance with current City of Baldwin specifications when warranted by the following table:

Average Daily Traffic (ADT)	**Number of Lots** (equal to or greater than the following)
>6,000	100
4,001—6,000	125
2,001—4,000	150
1,000—2,000	175
<1,000	200

B. Project Access Improvements for Multifamily and Non-residential Developments
1. When property that abuts upon an existing or proposed City road is to be developed or redeveloped for multifamily or non-residential uses and the City road will provide access

to the property, project access improvements to the City road (deceleration lanes, turn lanes, etc.) shall be provided by the developer.

2. A deceleration lane shall be required to be provided at each project driveway or subdivision street entrance, as applicable, that is provided street access to a Minor Collector Street or Major Thoroughfare. In the event a street has an existing or proposed median, and the developer desires to construct a median break to serve the project, a left turn lane leading to the median break shall be required to be provided by the developer if approved by the Department of Transportation and shall meet the standards contained herein. The preferred spacing for median breaks shall be 2000 feet between the centerlines of the openings, and the minimum spacing for median breaks shall be 1000 feet between centerlines of the openings. Other factors will also be considered, such as distance to other median openings, adjacent land use, expected traffic volumes, and the resulting volume of U-turns that are likely to occur without the median opening. Meeting the spacing criteria is not, in itself, an indication that median opening will be allowed.
3. Deceleration lanes shall have a length of 200 feet, with an additional 50 foot taper length, pavement width of 12 feet (excluding curb and gutter) and shall be provided with curb and gutter. Additional right-of-way to accommodate the deceleration lane and an 11 foot shoulder shall be dedicated by the developer to City of Baldwin at no cost. Associated drainage improvements as deemed necessary by the construction of the deceleration lane shall also be required.
4. A left turn lane shall be provided into each project driveway or subdivision street that accesses a Minor Collector or Major Thoroughfare in accordance with the Department of Transportation's "Criteria and Guidelines for Left Turn Lanes."

C. Other project access improvements may be required by the city upon the recommendation of the Department of Transportation in order to ensure adequate site access, pedestrian access, convenience and safety to the motoring public.
D. The developer shall be responsible for the relocation of public or private utilities and stormwater infrastructure, as may be occasioned by the required Project Access Improvements.
E. The City of Baldwin may waive or require the installation of a left-turn lane, regardless of average daily traffic (ADT) or number of lots, based upon traffic and safety considerations.
F. For those developments that a turn lane is required and the development is proposed in phases, construction of the turn lane is required prior to platting 100 lots or more.
G. Additional right-of-way and/or easements necessary for the installation of deceleration and/or left-turn lanes will be acquired by and will be the financial responsibility of the developer.
H. A signed and recorded frontage and/or radius encroachment agreement with applicable property owners will be required if any portion of the access extends beyond the development's road frontage.

2.38 Street Construction Standards and Specifications

2.38.1 Specifications

Unless otherwise specifically set forth herein, all of the materials, methods of construction, and workmanship for street construction shall conform to the latest specifications of the Georgia Department of Transportation.

2.38.2 Subgrade Preparation for All Streets

A. Subgrade preparation shall be in accordance with Georgia Department of Transportation specifications.

B. Removal of unsuitable material
If any sections of the subgrade are composed of topsoil, organic, or other unsuitable or unstable material, such material shall be removed and replaced with suitable material and then thoroughly compacted as specified for fill or stabilized.

C. Compaction
Fill shall be placed in uniform, horizontal layers not more than 8 inch thick (loose measurement). Moisture content shall be adjusted as necessary to compact material to 95 percent of maximum dry density except for the top 12 inches which shall be compacted to 100 percent of maximum dry density.

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

E. Utility trenches to be compacted
All utility crossings within the right-of-way must be installed prior to subgrade approval. All manhole covers must be flush with top of intermediate course if there is a delay in applying the final surface course for new roadway pavement. Manhole covers will be required to be adjusted flush when the final surface course is installed. Utility trenches cut in the subgrade shall be backfilled as specified herein. Compaction tests at the rate of 1 per 150 feet of trench shall be provided to verify compaction.

F. Proof roll testing required
The subgrade must pass proof roll testing prior to placement of the base material. The proof roll test of the subgrade and base material shall be observed and approved by a City Inspector or his designee prior to paving.

G. Temporary traffic surface
When the street is to be used for construction traffic before the paving work is completed, a layer of stone (except crusher run) shall be laid as a traffic surface. This material shall not be used as a part of the base material. It may be worked into the subgrade or it shall be removed before the base course is set up for paving.

H. Provisions to drain low points
Provisions shall be made to drain low points in the road construction when the final paving is delayed. A break in the berm section is required when the curbing has not been constructed. Drainage under the curb to side slopes after installation is required, using minimum four inch diameter pipe sections. Vegetated or stabilized swales shall be considered for managing road

construction runoff. Swales shall be constructed in accordance with the City of Baldwin specifications.

I. Sections wider than 4 feet in width
For sections 4 feet or greater in width, the section shall comply with the construction standards for new streets. The base course must pass roll testing prior to paving. If a delay is expected, then the base must be sealed and retested prior to paving.

J. Sections less than 4 feet in width
For sections less than 4 feet in width, 6 inches of class "A" concrete shall be poured flush with the adjacent pavement surface and dyed black. A minimum of 8 inches of graded aggregate base shall be provided below the widening section.

2.38.3 New Local and Minor Collector Streets

A. The following standards shall apply to new local and minor collector streets in residential subdivision and non-residential projects.
   1. The base course shall consist of at least 8 inches of graded aggregate base. After being thoroughly compacted and brought to proper section, an intermediate course of 2 inches of 19 mm Superpave shall be applied.
   2. The final asphaltic surface course of 1.5 inches of 9.5 mm Superpave Type II shall be applied.
   3. If a delay in paving is anticipated, then the base course shall be primed the same day it is compacted and cured in accordance to Georgia DOT standards.
   4. Upon the final acceptance of the final surface course, a maintenance bond for a period not to exceed 18 months following the date of approval shall be required.

B. Local streets
Where allowed, local streets may be installed without curb and gutter. In such cases, the road base shall be extended 2 feet beyond the edge of pavement and the shoulders shall extend eight feet from the edge of pavement to a standard ditch section on each side.

2.38.4 New Roads

New roads shall be constructed in accordance with the following standards:

A. Industrial Traffic and Heavy Commercial Traffic Typical Section:
   1. 10 inches GAB (placed in 2 separate courses of equal thickness)
   2. 4 inches of 25mm Superpave
   3. 2 inches of 19mm Superpave
   4. 2 inches of 12.5mm Superpave

B. Light Commercial Traffic Typical Section:
   1. 8 inches GAB
   2. 4 inches of 19mm Superpave (placed in 2 separate lifts of equal thickness)
   3. 2 inches of 9.5mm Type II Superpave (volumes less than 10,000 ADT) or;
   4. 2 inches of 12.5mm Superpave (volumes greater than 10,000 ADT)

C. Residential Typical Section:
   1. 6 inches GAB
   2. 2 inches of 19mm Superpave

3. 1.5 inches of 9.5mm Type II Superpave

2.39 Curb and Gutter

All gutters shall drain smoothly with no areas of ponding.

All curb and gutter shall meet the following requirements:

A. Concrete shall be Class "B" (as defined by Georgia Department of Transportation) and have a minimum strength of 3,000 PSI at 28 days.
B. Typical minimum section shall be 6" x 24" X 12".
C. All curb shall be vertical. No exceptions.
D. Construction Methods
    1. Curb and gutter shall be set true to line and grade, be field staked, and finished to the section shown on the plans.
    2. Line and grade shall be field staked for grades less than two percent and grades over 12 percent, and within 100 feet in both directions from all low points.
    3. One-half inch expansion joints or premolded bituminous expansion joint material shall be provided at all structures and radius points and at intervals not to exceed 250 feet in the remainder of the curb and gutter.
    4. Inferior workmanship or unprofessional construction methods resulting in unacceptable curb and gutter will be cause for rejection of the finished work.
    5. Disturbed areas along all curbing shall be backfilled, stabilized, and grassed.

2.40 Striping

A. All striping shall be thermoplastic and meet the requirements of the Georgia Department of Transportation specifications, latest edition.
B. All striping shall be located in accordance with the Manual on Uniform Traffic Control Devices, latest revision.
C. All pedestrian crosswalks shall be striped and have signs requiring vehicular traffic to stop prior to the crosswalk including crosswalks not located at intersections.
D. All intersections where vehicular traffic must stop shall have 24-inch wide stop bars in conjunction with stop signs.
E. All centerline and edgeline striping shall be 5-inches wide.

3.0 Driveways

The safe operating of motor vehicles and the need to minimize potential nuisance factors resulting from conflicts between commercial or industrial traffic utilizing streets designed for residential traffic are issues which directly relate to the public health, safety, and welfare of residents in the city. The appropriate design and location of driveways can significantly lessen the adverse effects related to these issues. The establishment of reasonable design standards and administrative procedures included herein shall aid in protecting the health, safety, and welfare of the residents of the city.

3.1 Purpose of Design Standards

The purpose of this section is:

A. To ensure that vehicles leave or join the roadway traffic at a proper angle and in conformity with the rules of the road.
B. To reduce hazard to vehicles by reducing areas of conflict and points of conflict between vehicles.
C. To increase the capacity of roads and intersections by reducing areas of conflict between vehicles.
D. To provide sufficient space for the installation of traffic control devices, utilities and crosswalks.
E. To reduce hazard to pedestrians by reducing areas of possible conflict between pedestrians and vehicles, and to define such areas.
F. To provide reasonable assurance against the hazardous and indiscriminate use of highway right-of-way through encroachment.
G. To provide a maximum practical sight distance, especially at intersections.
H. To provide uniform and impartial consideration in all cases where access is required by abutting property owners.
I. To reduce the possibility of conflicts between commercial/industrial traffic generators and residential areas.

3.2 Application for Permit

Application for a permit to construct or alter a driveway or curb cut occurring on or abutting a city road right-of-way shall be made to the City of Baldwin under the following circumstances:

A. When such driveway(s) or curb cut(s) are incidental to the development of a new structure or the development of previously undeveloped property, the driveway permit shall constitute a part of the building permit.
B. When such driveway or curb cut construction constitutes a separate action apart from any other construction on the same site, a driveway permit shall be secured from the City of Baldwin.
C. When property abutting a city road right-of-way changes from one use to another and driveways and/or curb cuts have previously been extended across or to a city road right-of-way, or when the type of use or the volume of use of an existing and/or previously approved driveway is substantially changed, application for review shall be submitted and a driveway

permit secured from the City of Baldwin. The occupancy permit may be withheld until such driveway improvements have been approved.

3.3 Issuance or Denial of Permit; Appeals

Upon reviewing an application for a driveway permit in any of the aforementioned circumstances, the City of Baldwin shall take one of the following courses of action:

A. Issue the permit if the standards correspond with the requirements as outlined in the regulations.
B. Submit the application to the Public Works Director for review, such review is not to exceed ten working days. The Public Works Director shall:
    1. Recommend approval of the permit to the City of Baldwin;
    2. Recommend disapproval of the permit unless certain modifications are made which they shall delineate in writing to the City of Baldwin.
C. Issue the permit if the applicant agrees to follow the recommendations of the Public Works Director.
D. Deny the permit application.
E. If the driveway permit is denied by the City of Baldwin, the applicant can appeal the City of Baldwin's decision to the city council, who shall hear testimony from the applicant. The city council may either approve or deny the application.

3.4 General Design Standards

The location, design and construction of the driveway shall be in accordance with the following standards. These standards are in no case to be modified unless specifically authorized by the City of Baldwin:

A. A driveway shall be located and restricted as to width as necessary driveway and its appurtenances are contained within the frontage along the highway of the property served. At public highway intersections a driveway shall not provide direct ingress or egress to or from the public highway intersection area and shall not encroach on or occupy areas of the roadway or right-of-way deemed necessary for effective traffic control or for highway signs or signals. A driveway shall be so located and constructed that vehicles approaching or using it will have adequate sight distance in both directions along the highway.
B. The number of driveways permitted serving a single property frontage shall be a maximum of two if both driveways meet the requirements of this section. Additional driveway(s) may be deemed necessary by the Public Works Director for reasonable service to the property without undue impairment of safety, convenience, and utility of the highway.
C. If the property has frontage on more than one street, and a driveway permit is requested, the City of Baldwin may request a recommendation from the Public Works Director or the Baldwin City Council as to the potential adverse effects which may result. If it is determined that it would cause a nuisance to the surrounding area, or a traffic hazard, or unduly congest traffic, then the permit may be denied.
D. The island area on the right-of-way between successive driveways or adjoining a driveway and between the highway shoulder and right-of-way line shall remain unimproved for

vehicular travel or parking. Such areas shall be considered as restricted and may be filled in or graded down only as hereinafter provided in subsection H. of this section.

E. The surface of the driveway connecting with rural type highway sections shall slope down and away from the highway shoulder a sufficient amount and distance to preclude ordinary surface water drainage from the driveway area flooding onto the highway roadbed.

F. The driveway shall not obstruct or impair drainage in side ditches or roadside areas. Driveway culverts, where necessary, shall be adequate for surface water drainage along the roadway and in no case less than the equivalent of 18-inch diameter pipe. The distance between culverts under successive driveways shall be not less than ten feet except as such restricted area is permitted to be filled in under the provisions of subsection H. of this section. A minimum of one foot of cover is required over the driveway culvert with additional cover required over HDPE pipe for driveways subjected to heavier loads. All driveway culverts shall be constructed of the following materials and meet Georgia Department of Transportation specifications:
   1. Reinforced concrete pipe (RCP), G.D.O.T. approved Class III or better.
   2. High density polyethylene (HDPE) pipe, G.D.O.T. approved, dual walled.

G. Driveways connecting to curb and gutter must be constructed by removing the curb and gutter and pouring a valley gutter. When curb and gutter is removed for constructing a driveway, the new connections shall be of equivalent acceptable material and curb returns shall be provided or restored in a neat, workmanlike manner. The driveway or valley gutter surface shall connect with the highway pavement and sidewalks, if any, in a neat workmanlike manner. In no case shall the driveway construction impair the flow of water in the gutter.

H. Any activities that impair the flow of water in a curb and gutter are prohibited. These prohibited activities include, but are not limited to: The filling in of curb and gutter with concrete or asphalt, or the removal of curb and gutter without providing an acceptable valley gutter as described above.

I. The restricted area between successive driveways may be filled in or graded down only when the following requirements are fully complied with:
   1. The filling or grading down shall be to grades approved by the City of Baldwin; and, except where drainage is by means of curb and gutter, water drainage of the area shall be directed away from the highway roadbed in a suitable manner.
   2. Culvert extension under the restricted area shall be of like size and equivalent acceptable material of the driveway culvert, and intermediate manholes adequate for clean-out purposes may be required where the total culvert length exceeds 100 feet.
   3. Where no side ditch separates the restricted area from the roadbed, permanent provision may be required to separate the areas from the highway roadbed, to prevent its use for driveway or parking purposes, by construction of a border, curb, rail or posts deemed adequate by the City of Baldwin.

3.5 Specific Design Standards

The following specific design standards shall apply to driveways requiring permits as set forth in these regulations. The items are driveway width, angle of entry and exit, return radius of curb,

maximum percent of frontage for driveway use, distance to side property lines, island areas, intersection clearance, parking and storage areas and driveway grade.

3.6 Driveway Widths

Measured parallel to the roadway, driveway widths shall be as follows:

	Minimum	Maximum
Residential	10′	15′
Residential-duplex	10′	22′
Apartments	28′	30′
Commercial:		
One-way	15′	25′
Two-way	28′	30′
Industrial	32′	40′

3.7 Return Radius of Curb

Return radius of curbs shall be as follows:

	Minimum	Maximum
Residential	5′	15′
Apartment	5′	20′
Commercial:		
Urban	10′	20′
Suburban	15′	25′
Rural	15′	35′
Industrial:		
Urban	15′	25′
Rural	25′	40′

3.8 Angle and Improvements

Driveways shall generally intersect streets at right angles. The portion of a driveway located within a public right-of-way shall be paved. Driveways providing access to parking lots which contain five or more spaces shall be paved.

3.9 Driveway Design Standards

Driveways serving single-family detached or duplex residences may be no less than 10 feet wide at the right-of-way line and shall provide a radius to the back of curb or edge of pavement of the roadway of no less than 5 feet. All other driveway curb cuts on public streets shall conform to the following:

A. Driveway Detail 1 (32 foot Width, 25 foot Radius) for:
   1. Commercial and Retail Uses (over 80,000 Square Feet).
   2. Office/Institutional/Cultural Uses (Over 100,000 Square Feet).
   3. Multifamily Residential Developments (Over 200 Units).

4. Mobile or Manufactured Home Developments (Over 200 Lots).
5. Service Stations.

B. Driveway Detail 2 (28 foot Width, 25 foot Radius) for:
1. Commercial and Retail Use Sites (80,000 Square Feet or Less).
2. Office/Institutional/Cultural Use Complexes (100,000 Square Feet or Less).
3. Multifamily Residential Developments (200 Units or Fewer).
4. Mobile or Manufactured Home Developments (200 Lots or Fewer).

C. Driveway Detail 3 (32 foot Width, 40 foot Radius) for:
1. Industrial Sites.

D. Driveway Detail 4 (Optional Design with Island) for:
1. Private Commercial/Office Street Entrances.
2. Private Entrances to Multifamily Residential Developments (Over 200 Units).
3. Private Entrances to Mobile or Manufactured Home Developments (Over 200 Lots).
4. All driveways and driveway curb cuts on State highways shall conform to Georgia Department of Transportation standards.
5. All driveways and driveway curb cuts on county highways shall conform to county standards.

3.10 Maximum Percentage of Frontage for Driveway Use

A. Each single driveway shall have a maximum width of 30 percent of the property frontage. Where two or more driveways are permitted, no more than 60 percent of property frontage shall be used as driveways.

B. No approval for a curb cut will be given where it is apparent that the intent is not to provide access but to provide parking only. A driveway approach must provide access to something definite on private property such as a parking area considerably greater in extent than the width of the driveway, or provide access to a driveway, or to a door at least eight feet wide intended for the entrance of vehicles, etc. (not applicable for residential driveways).

3.11 Distance to Side Property Lines

A. The area within five feet of a frontage boundary line shall be a restricted area on which no driveway may be developed on public right-of-way.

B. A minimum of 1½ feet of pavement edge or curb shall be left undisturbed adjacent to each frontage boundary line to serve as an island area. This distance shall be measured between the front boundary line and the point of tangency of the driveway radius and the edge of the pavement measured along the edge of the pavement.

C. Subsection A. or B. of this section shall apply, whichever is more restrictive.

D. These requirements may be waived when a single driveway is approved to serve two adjacent lots.

3.12 Island Areas

A. Minimum Island Dimensions
1. Distance between double driveways is ten feet minimum at narrowest point;
2. Minimum island depth, four feet where parking abuts street right-of-way line.

B. Treatment of island or buffer area. In the development of private property and the construction of driveways thereto, it may be necessary to regrade the buffer area by cutting or filling. Such work shall be done in a manner to insure adequate sight distance for traffic operations, proper drainage, suitable slopes for maintenance operations, and good appearance. The buffer area outside the driveways shall be treated to prevent use by vehicles. This may be accomplished by grading, or use of curbs, rails, guide posts, low walls, low shrubs, etc., in a manner which will not impair clear sight across the area.

C. Visibility clearance. No landscaping, fences, terraces, or other natural or artificial features adjacent to any street shall be of a nature impairing visibility from or of approaching vehicular traffic where such visibility is important to safety, nor shall such features in any way create potential hazards to pedestrians. In particular, at vehicular entrances and exits, no off-street parking, landscaping, or other material impediment to visibility between the height of three feet and ten feet, measured from the roadway level, shall be permitted within triangular areas defined by lines connecting points described as follows:
   1. Nonresidential use. Beginning at a point where the midline of the entrance or exit intersects the public right-of-way, thence to a point of 35 feet along the right-of-way in the direction of approaching traffic, thence to a point of 25 feet toward the interior of the lot along the midline of the entrance or exit, and thence to a point of beginning.
   2. Multifamily residential use. Beginning at a point where the midline of the entrance or exit intersects the public right-of-way, thence to a point of 10 feet along the right-of-way in the direction of approaching traffic, thence to a point of 10 feet toward the interior of the lot along the midline of the entrance or exit, and thence to the point of beginning.

3.13 Intersection Clearance

The length, width, and shape of corner island areas will vary for different locations. The angle of intersection, angle of driveways, width of the right-of-way on both approaches, channelization radii, and other conditions will influence the location of driveways at intersections. The location and angle of an approach in relation to the highway intersection shall be such that a vehicle leaving the service facility may be merged in the lane of traffic moving in the desired direction before crossing the intersection, and that a vehicle entering the facility from the intersection may do so in an orderly and safe manner with a minimum of interference to through traffic.

The following conditions may be applicable in most instances:

A. No driveway shall be allowed to encroach upon pavement edge radii.

B. The following minimum distances from the intersection right-of-way line shall apply where there is no conflict with the foregoing conditions:
   1. Traffic volume A.D.T. of 1,500 or less, 20 feet;
   2. Traffic volume A.D.T. over 1,500 but less than 10,000, 35 feet;
   3. Traffic volume A.D.T. over 10,000 but less than 15,000, 50 feet;
   4. Traffic volume A.D.T. over 15,000, 65 feet.

The City of Baldwin shall have the authority to increase these distances if in its opinion such action is necessary for the protection of traffic.

3.14 Corner Sight Distance

All driveways approaching a Minor Collector or Major Thoroughfare shall provide adequate corner sight distance, and shall meet or exceed the following design standards:
The sight distance criteria are based on the time required for a vehicle to make a left turn from a stop controlled approach to the Highway (AASHTO Case B1). The time to execute the maneuver is based on recommendations contained in NCHRP Report 383, Intersection Sight Distance. The sight distances, for a two-lane road, are the distances traveled at the arterial speed during 7.5 seconds. The time is increased by 0.5 seconds for each additional lane to be crossed.

3.15 Parking and Storage Areas

A. Each roadside business establishment, when providing off-street parking or storage space, shall provide such parking or storage space off the right-of-way to prevent the storage of vehicles on the driveway or the backing up of vehicles on the travel way. This is necessary for businesses where a number of vehicles will be leaving and entering at the same time.
B. Particular attention will be paid to drive-in facilities such as banks, car washes, drive-in restaurants, drive-in bill paying facilities, and other service facilities where motorists are served while in their vehicles, to ensure that queues of vehicles will not extend out onto the public streets.

3.16 Driveway Grade

A. Residential driveways: The maximum grade that shall be permitted is 17 percent.
B. Apartment, commercial and industrial driveways: The maximum grade that shall be permitted is 8 percent.
C. Grades within the right-of-way shall be controlled by existing shoulder slope or existing and future sidewalk elevations.
D. When driveways are intended for special use vehicles, the underside clearance and/or break over angle of the subject vehicle shall dictate the maximum driveway grade.

3.17 Common Access Driveways

3.17.1 General Provisions

The following specific design standards shall apply to common access driveways requiring permits as set forth in these regulations. Even though a common access drive may provide access to parcels or lots, each resultant parcel, tract or lot must still meet the minimum public street frontage requirements for the zoning district in which it is located unless otherwise exempted as a lot of record. Parcels, tracts, lots, or building sites for which building permits are requested or upon which there is a proposed subdivision of land that will not have separate and individual driveway access to a public street within the limits of the property itself, but is proposed to be served by a common access driveway, shall install such a driveway in conformance to the following standards.

3.17.2 Submission of Plans

Any person or entity seeking a building permit or occupancy permit requested for lots of record or proposed subdivision of land, whereby three but not more than five parcels or lots are to be served by a common access driveway, shall, at the time of the permit application or proposed subdivision of property, submit all necessary plans as required by the City of Baldwin indicating the proposed location and construction specifications for the proposed common access driveway.

3.17.3 Construction Prior to Plat Approval or Issuance of Occupancy Permit

New common access driveways shall be constructed prior to the issuance of an occupancy permit for lots of record or prior to the approval and recording of a final plat for the proposed subdivision of land.

3.17.4 Required Statements on Plats

Plats indicating the location of common access driveway easements and lots to be served shall be recorded with the clerk of the city. The plats shall include:

A. A statement to the effect that the driveway easement shown on the plat is not to be dedicated as a public road and not to be maintained by the city, but shall be privately maintained; and
B. A statement signed by the surveyor, a registered engineer or a registered landscape architect that the driveway has been constructed in accordance with the minimum standards of the City.

3.17.5 Previously Existing Driveways

Any existing easements or common driveways which have been recorded prior to the effective date of this amendment may continue to serve existing lots which were also recorded prior to the effective date of the ordinance codified in this chapter. Any new driveways which would propose access to three or more undeveloped lots of record must conform with the standards for a common access driveway in accordance with this ordinance.

3.17.6 Minimum Standards

Construction of common access driveways shall conform to the following minimum standards.

A. Easement width, 30 feet, 30 feet radius easement in cul-de-sac;
B. Roadbed width 20 feet;
C. Shoulder width, two feet;
D. Base width, 18 feet;
E. Pavement width, 16 feet;
F. Minimum radius at cul-de-sac transition and intersections, 20 feet;
G. Pavement type:
    1. Plant mix, two inches thick over graded aggregate four inches thick (except within the public right-of-way, which shall be six inches thick);
    2. Concrete, four inches thick (except within the public right-of-way, which shall be six inches thick);

H. If a common access driveway terminates in a dead end, the termination shall be either a cul-de-sac with a paved radius of 25 feet, or another termination method that allows for vehicles to turn around safely and is acceptable to City of Baldwin;
I. If a common access driveway is a cul-de-sac, the maximum length of the cul-de-sac shall be 1,000 feet;
J. Individual driveways joining the common driveway must be placed entirely on the property that they serve;
K. Individual driveways joining the common driveway may only serve one lot;
L. Ditches: Maximum side slopes of channels with vegetative lining shall be 3:1. Maximum side slopes of channels with rip rap or concrete shall be 2:1; 1 ½ foot minimum depth; 2 foot minimum bottom width
M. Maximum finished driveway grade, 17 percent; driveway grades up to 20 percent may be approved by the city in extreme conditions;
N. Pavement crown, ¼-inch per foot;
O. All slopes and shoulders shall be grassed;
P. Minimum cross drain pipe size, 18 inches;
Q. The driveway must intersect the public road at an angle of 70 degrees or greater;
R. The driveway must enter the public road at least 70 feet from any intersection of another common access driveway as measured from centerline to centerline. The driveway must enter the public road at least 70 feet from another public road intersection as measured from the centerline of the common access driveway to the closest point of right-of-way intersection;
S. Intersection sight distance shall be as specified in the sight distance table in this ordinance.

4.0 Stormwater Management

4.1 Post-Development Stormwater Management for New Development and Redevelopment

4.1.1 Purpose and Intent

It has been determined that establishing requirements and protocols to control the adverse effects of increased post-development stormwater runoff and nonpoint source pollution associated with new development and redevelopment will minimize damage to public and private property, safeguard and preserve the public health, safety, and environment, and protect water and aquatic resources. This section seeks to meet that purpose through the following objectives:

A. Establish procedures for land development activities that protect the integrity of the watershed and preserve the health of water resources;
B. Require that new development and redevelopment maintain the pre-development hydrologic response in their post-development state in order to reduce flooding, streambank erosion, nonpoint source pollution and increases in stream temperature, and maintain the integrity of stream channels and aquatic habitats;
C. Establish post-development stormwater management standards and design criteria for the regulation and control of stormwater runoff quantity and quality;
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. Encourage the use of nonstructural stormwater management and stormwater better site design practices, such as the preservation of greenspace and other conservation areas.
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; and,
G. Establish administrative procedures for the submission, review, approval and disapproval of stormwater management plans, and for the inspection of approved active projects, and long-term follow up.

4.1.2 Applicability

It is recommended that the stormwater management standards listed below be required for any new development or redevelopment site that meets one or more of the following criteria:

A. New development that includes the creation or addition of 5,000 square feet or greater of new impervious surface area, or that involves land disturbing activity of 1 acre of land or greater.
B. Redevelopment that includes the creation or addition of 5,000 square feet or greater of new impervious surface area, or that involves land disturbing activity of 1 acre or more.
C. Any commercial or industrial new development or redevelopment, regardless of size, with a Standard Industrial Classification (SIC) code that falls under the NPDES Industrial Stormwater Permit program, or is a hotspot land use as defined below.
D. Land development activities that are smaller than the minimum applicability criteria set forth in A. and 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.

E. Land development activities that are smaller than the minimum applicability criteria set forth in A. and B. above if the quantity, quality, and/or rate of stormwater runoff from such activities will cause significant impacts to the receiving waters due to the type or location of the development site or other circumstances.

4.1.3 Definitions

New development is defined as land disturbing activities, structural development (construction, installation or expansion of a building or other structure), and/or creation of impervious surfaces on a previously undeveloped site.

Redevelopment is defined as structural development (construction, installation, or expansion of a building or other structure), creation or addition of impervious surfaces, replacement of impervious surfaces not as part of routine maintenance, and land disturbing activities associated with structural or impervious development on a previously developed site. Redevelopment does not include such activities as exterior remodeling.

Previously developed site is defined as a site that has been altered by paving, construction, and/or land use that would typically have required regulatory permitting to have been initiated (alterations may exist now or in the past).

A hotspot is defined as a land use or activity on a site that produces higher concentrations of trace metals, hydrocarbons, or other priority pollutants than are normally found in urban stormwater runoff. Examples of hotspots include gas stations, vehicle service and maintenance areas, industrial facilities such as salvage yards (both permitted under the Industrial General Permit and others), material storage sites, garbage transfer facilities, and commercial parking lots with high-intensity use.

Pre-development is defined as "natural, undisturbed conditions." For new development, the pre-development type of vegetative condition, shall be "woods in good condition." For redevelopment where flooding concerns do not currently exist, pre-development may be defined as the condition of the site immediately prior to the implementation of the proposed project where pervious non-wooded areas shall be "open space in good condition."

4.1.4 Exemptions

In order to avoid excessive regulation on individual residential lots, maintenance and repair efforts, and environmental projects, the following development activities are recommended to be exempted from the stormwater management standards:

A. Individual single family residential lots (single family lots that are part of a subdivision or phased development project should not be exempt from the standards);
B. Additions or modifications to existing single family structures;

4.1.5 Stormwater Design Manual

For the stormwater design manual, the City of Baldwin will utilize the policy, criteria and information including technical specifications and standards in the latest edition of the Georgia Stormwater Management Manual and any relevant local additions as outlined in the City of

Baldwin, Georgia Minimum Development Standards Ordinance for the proper implementation of the requirements of this chapter.

4.2 Water Quality

The runoff from 85% of the storms that occur in an average year shall be retained or treated. For Georgia, this equates to providing water quality treatment for the runoff resulting from a rainfall depth of 1.2 inches. The water quality treatment shall reduce average annual post-development total suspended solids loadings by 80%. The latest version of the Georgia Stormwater Management Manual Stormwater Quality Site Development Review Tool shall include all drainage basins with proposed disturbance and be submitted to the City in the stormwater management report.

4.2.1 Water Quality Volume Calculation

The Water Quality sizing criterion, denoted WQv, specifies the retention and/or treatment required to remove a significant percentage of the total pollution load inherent in stormwater runoff by intercepting and retaining or treating the 85th percentile storm event, which is equal to 1.2 inches (i.e., all the runoff from 85% of the storms that occur on average during the course of a year and a portion of the runoff from all storms greater than 1.2 inches). The Water Quality Volume is a runoff volume that is directly related to the amount of impervious cover at a site. In numerical terms, it is equivalent to a rainfall depth of 1.2 inches multiplied by the volumetric runoff coefficient (Rv) and the site area, and is calculated using the formula below:

Use the equations below to calculate the required water quality volume.

$$WQv = \frac{1.2R_vA}{12}$$

Where:
WQv = water quality volume (in cubic ft)
$R_v = 0.05 + 0.009(I)$ where I is *percent* impervious cover
A = post-developed basin area in square feet

Use the following equation to size the water quality orifice:
$A= (WQ_v/t)/[0.6*(64.4*H/2)^{0.5}]$
Where:
t=86,400 sec.
A=area of the orifice (ft^2)
H=height between 100% water quality volume elevation and centroid elevation of the water quality orifice
WQ_v=water quality volume

4.2.2 Water Quality Volume for Entire Site

Calculate the WQv for the entire site. To satisfy the WQv for the project, the WQv should be met for all drainage basins within the site to ensure the entire site WQv goal is met.

4.2.3 Off-site Drainage Areas

Off-site drainage may be excluded from the calculation of the WQv if the drainage is routed around the site.

4.2.4 Credits for Site Design Practices

The use of certain better site design practices may allow the WQv to be reduced through the subtraction of a site design "credit." These site design credits are described in Section 2.3 of the Georgia Stormwater Management Manual, latest edition.

4.2.5 Extended Detention of the Water Quality Volume

The water quality treatment requirement can be met by providing a 24-hour drawdown of a portion of WQv in a wet stormwater pond or wetland system (as described in Sections 4.25 and 4.26 of the Georgia Stormwater Management Manual, latest edition). Referred to as water quality ED (extended detention), it is different than providing extended detention of the 1-year, 24 hour storm for the channel protection volume (CPv). The extended detention portion of the WQv (up to 50% of the required water quality volume) may be included when routing the CPv.

4.2.6 Determining the Peak Discharge for the Water Quality Storm

When designing off-line structural control facilities, the peak discharge of the water quality storm (Q_{wq}) can be determined using the method provided in Section 3.1 of the Georgia Stormwater Management Manual, latest edition.

4.2.7 Proprietary Systems

4.2.7.1 Guidelines for Using Proprietary Systems

A proprietary system shall have a demonstrated ability to meet the stormwater management goals and uses for which it is intended. This means that the system shall provide:

A. Independent third-party scientific verification of the ability of the proprietary system to meet water quality treatment objectives and/or to provide water quantity control (channel or flood protection)
B. A proven record of longevity in the field
C. Proven ability to function in Georgia conditions (e.g., climate, rainfall patterns, soil types)
   For a propriety system to meet the above water quality goals, the following monitoring criteria shall be met for supporting studies:
   1. Samples shall be taken for at least 15 storm events.
   2. The study shall be independent or independently verified (i.e., may not be conducted by the vendor or designer without third-party verification).
   3. The study shall be conducted in the field, as opposed to laboratory testing.
   4. Field monitoring shall be conducted using standard protocols that require proportional sampling both upstream and downstream of the device.
   5. Concentrations reported in the study shall be flow-weighted.
   6. The propriety system or device shall have been in place for at least one year at the time of monitoring.

Although local data is preferred, data from other regions can be accepted as long as the design accounts for local conditions.

Local governments may submit a proprietary system to further scrutiny based on the performance of similar practices. A poor performance record or high failure rate is valid justification for not allowing the use of a proprietary system or device. As an example for a proprietary system evaluation guideline, the Metropolitan North Georgia Water Planning District has developed the *Post-Construction Stormwater Technology Assessment Protocol (PCSTAP)*

Submit manufacturer information and testing data as outlined above for a proprietary system to be considered for use in the City of Baldwin.

Below are proprietary systems that have been approved for use in the City of Baldwin:
Crystal Stream
Hydro International Downstream Defender
Stormceptor

Proprietary systems shall be installed upstream of underground detention systems. No exceptions.

4.2.8 Inspection and Maintenance Requirements
All best management practices require proper maintenance. Without proper maintenance, BMPs will not function as originally designed and may cease to function altogether. The design of all BMPs includes considerations for inspection and maintenance access. For additional information on inspection and maintenance requirements, see Appendix E of the Georgia Stormwater Management Manual, latest edition.

4.3 Channel Protection
Channel protection shall be provided by using all of the following three approaches:
A. 24-hour extended detention storage of the 1-year, 24-hour return frequency storm event
B. Erosion prevention measures, such as energy dissipation and velocity control
C. Preservation of the applicable stream buffer. Stream channel protection requirements are further described in Section 2.2.4.2 of the Georgia Stormwater Management Manual, latest edition.

The first method of providing stream bank protection is the extended detention of the 1-year, 24-hour storm for a period of 24 hours using BMPs. It is known that the increase in runoff due to development can dramatically increase stream channel erosion. This standard is intended to reduce the frequency, magnitude and duration of post-development bankfull flow conditions. The volume to be detained is also known as the channel protection volume (CPv). Provide peak discharge control of the 1-year, 24 hour storm event such that the post-development peak rate does not exceed the predevelopment rate to reduce bankfull flows and protect downstream channels from erosive velocities and unstable conditions shall be provided. Refer to Table 4.1.3-1 (BMP Selection Guide) in the Georgia Stormwater Management Manual for applicable BMPs.

The second stream bank protection method is to implement velocity control, energy dissipation, stream bank stabilization, and erosion prevention practices and structures as necessary in the stormwater management system to prevent downstream erosion and stream bank damage. Energy dissipation and velocity control methods are discussed in Section 5.5 of the Georgia Stormwater Management Manual, latest edition.

The third method of providing for stream channel protection is through the establishment of riparian stream buffers on the development site. Stream buffers not only provide channel protection but also water quality benefits and protection of streamside properties from flooding. Additional stream buffer guidelines are presented in Section 2.3 of the Georgia Stormwater Management Manual, latest edition.

Channel protection volume control is not required for post-development discharges less than 2.0 cfs through the 100-year, 24 hour storm event at each individual discharge location.

4.3.1 Determining Channel Protection Volume

4.3.1.1 Multiple Drainage Areas

When a site contains or is divided into multiple drainage areas, CPv shall be distributed proportionally to each drainage area.

4.3.1.2 Off-Site Drainage Areas

Off-site drainage areas shall be modeled as "present condition" when determining the required channel protection volume. If there are adequate upstream channel protection controls in accordance with the Georgia Stormwater Management Manual, latest edition, then the off-site area can be modeled as "forested" or "natural" condition.

4.3.1.3 Routing/Storage Requirements

The required storage volume for the CPv may be provided above the WQv storage in stormwater ponds and wetlands with appropriate hydraulic control structures for each storage requirement.

4.3.1.4 Control Orifices

Orifice diameters for CPv control of less than 3 inches are not recommended without adequate clogging protection (see Section 3.3 of the Georgia Stormwater Management Manual, latest edition). Use City of Baldwin's Water Quality – Channel Protection Orifice detail.

Calculate the required channel protection volume as follows:

$$Q = \frac{(P - 0.2S)^2}{(P + 0.8S)}$$

Where:
P = 3.64 inches
S = 1000/CN - 10
CN = composite curve number for the post-developed basin

Use Table 3.1.5-3 in the Georgia Stormwater Management Manual, latest edition, to determine the I_a value based on the post-developed composite curve number for the drainage basin.

Convert the time of concentration of the post-developed basin from minutes to hours.

Use Figures 3.1.5-6 and 3.3.5-1 in the Georgia Stormwater Management Manual, latest edition, to determine q_o/q_i.

Use the following equations to determine the required channel protection volume:
$V_s/V_r = 0.682 - 1.43\ (q_o/q_i) + 1.64\ (q_o/q_i)^2 - 0.804\ (q_o/q_i)^3$

The required storage volume can then be calculated (in cubic feet) by:

$$CP_v = \frac{\left(\frac{V_s}{V_r}\right) QA}{12}$$

Where:
A = total basin area in acres

Use the following equation to size the channel protection orifice:
$A = (CP_v/t)/[0.6*(64.4*H/2)^{0.5}]$
Where:
t=86,400 sec.
A=area of the orifice (ft^2)
H=height between 100% channel protection volume elevation and centroid elevation of the channel protection orifice
CP_v=channel protection volume

4.4 Overbank Flood Protection
Provide peak discharge control of the 2, 5, 10, and 25-year, 24 hour storm event such that the post-development peak rate does not exceed the predevelopment rate to reduce overbank flooding.

4.5 Extreme Flood Protection
Evaluate the effects of the 100-year, 24 hour storm on the stormwater management system, adjacent property, and downstream facilities and property. Manage the impacts of the extreme storm event such that the post-development peak rate does not exceed the predevelopment rate to reduce extreme flooding.

Use the following 24 hour rainfall data from NOAA Atlas 14, Volume 9, Version 2:

Frequency	1 yr	2 yr	5 yr	10 yr	25 yr	50 yr	100 yr
P (inches)	3.64	4.13	4.96	5.69	6.73	7.56	8.43

4.6 Structural Stormwater Controls

All structural stormwater management facilities shall be selected and designed using the appropriate criteria from the Georgia Stormwater Management Manual, latest edition. The SCS method shall be used to determine storage volume. Routing shall begin at the permanent pool elevation. All structural stormwater controls must be designed appropriately to meet their intended function. For other structural stormwater controls not included in the Georgia Stormwater Management Manual, or for which pollutant removal rates have not been provided, the effectiveness and pollutant removal of the structural control must be documented through prior studies, literature reviews, or other means and receive approval from the City of Baldwin before being included in the design of a stormwater management system. If hydrologic or topographic conditions, or land use activities warrant greater control than that provided by the minimum control requirements, the City of Baldwin may impose additional requirements deemed necessary to protect upstream and downstream properties and aquatic resources from damage due to increased volume, frequency, and rate of stormwater runoff or increased nonpoint source pollution loads created on the site in question.

Applicants shall consult the Georgia Stormwater Management Manual, latest edition, for guidance on the factors that determine site design feasibility when selecting and locating a structural stormwater control.

4.7 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 City of Baldwin, Georgia Minimum Development Standards Ordinance. The applicant may, if approved by the City of Baldwin, 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, latest edition.

4.8 Dam Design Guidelines

Any land-disturbing activity that involves a site which proposes a dam shall comply with the Georgia Safe Dams Act and Rules for Dam Safety as applicable.

4.9 Permit Application Requirements

A. No Owner or Developer shall perform any land development activities without first satisfying the requirements of this section prior to commencing the proposed activity.
B. Unless specifically exempted by this section, any owner or developer proposing a land development activity shall submit to the City of Baldwin a permit application on a form provided by the City of Baldwin for that purpose.
C. Unless otherwise exempted by this section, a permit application shall be accompanied by the following items in order to be considered:
    1. Stormwater concept plan and consultation meeting certification in accordance with City of Baldwin, Georgia Minimum Development Standards Ordinance;

2. Stormwater management plan in accordance with City of Baldwin, Georgia Minimum Development Standards Ordinance;
3. Inspection and maintenance agreement in accordance with City of Baldwin, Georgia Minimum Development Standards Ordinance, if applicable;
4. Performance bond in accordance with City of Baldwin, Georgia Minimum Development Standards Ordinance, if applicable; and,
5. Permit application and plan review fees in accordance with City of Baldwin, Georgia Minimum Development Standards Ordinance.

4.10 Stormwater Concept Plan

Before any stormwater management permit application is submitted, the land owner, developer, and/or design engineer shall meet with the City of Baldwin to discuss the post-development stormwater management system to be utilized in the proposed land development project. This concept meeting shall take place at the time of the preliminary plan of subdivision or other early step in the development process. The purpose of this meeting is to discuss the post-development stormwater management measures necessary for the proposed project, as well as to discuss and assess constraints, opportunities and potential ideas for stormwater management designs before the formal site design engineering is commenced. To accomplish this goal the following information shall be included in the concept plan which shall be submitted in advance of the meeting:

A. *Existing conditions/proposed site plans.* Existing conditions and proposed site layout sketch plans, which illustrate at a minimum: existing and proposed topography; perennial and intermittent streams; mapping of predominant soils from soil surveys; boundaries of existing predominant vegetation and proposed limits of clearing and grading; and location of existing and proposed roads, buildings, parking areas and other impervious surfaces.
B. *Natural resources inventory.* A written or graphic inventory of the natural resources at the site and surrounding area as it exists prior to the commencement of the project. This description should include a discussion of soil conditions, forest cover, topography, wetlands, and other native vegetative areas on the site, as well as the location and boundaries of other natural feature protection and conservation areas such as wetlands, lakes, ponds, floodplains, stream buffers and other setbacks (e.g., drinking water well setbacks, septic setbacks, etc.). Particular attention should be paid to environmentally sensitive features that provide particular opportunities or constraints for development.
C. *Stormwater management system concept plan.* A written or graphic concept plan of the proposed post-development stormwater management system including:
    1. Preliminary selection and location of proposed structural stormwater controls;
    2. Location of existing and proposed conveyance systems such as grass channels, swales, and storm drains;
    3. Flow paths;
    4. Location of floodplain/floodway limits;
    5. Relationship of site to upstream and downstream properties and drainages; and
    6. Preliminary location of proposed stream channel modifications, such as bridge or culvert crossings.

4.11 Stormwater Management Plan

A. The stormwater management plan shall detail how post-development stormwater runoff will be controlled and how the proposed project will meet the requirements of this section, including the performance criteria set forth in City of Baldwin, Georgia Minimum Development Standards Ordinance.

B. This plan shall be in accordance with the criteria established in this section and be prepared under the direct supervisory control of a registered professional engineer licensed by the State of Georgia. The reports, documents and other materials required by City of Baldwin, Georgia Minimum Development Standards Ordinance shall be prepared under the direct supervisory control of a registered professional engineer licensed in the State of Georgia, who shall seal and sign the work. Portions of the overall plan may be prepared and stamped by a registered land surveyor licensed in the State of Georgia as appropriate, such as boundary surveys, contour maps, and erosion and sedimentation control plans.

C. The stormwater management plan must ensure that the requirements and criteria in this chapter are being complied with and that opportunities are being taken to minimize adverse post-development stormwater runoff impacts from the development. The plan shall consist of maps, narrative, and supporting design calculations (hydrologic and hydraulic) for the proposed stormwater management system. The plan shall include all of the information required in the stormwater management site plan checklist found in the Georgia Stormwater Management Manual, latest edition. This includes:
   1. Common address and legal description of site;
   2. Vicinity map;
   3. Existing conditions hydrologic analysis.
      a. The existing condition hydrologic analysis for stormwater runoff rates, volumes, and velocities, shall include:
         i. A topographic map of existing site conditions with the drainage basin boundaries indicated; acreage, travel path, soil types and land cover of areas for each sub-basin affected by the project;
         ii. All perennial and intermittent streams and other surface water features;
         iii. All existing stormwater conveyances and structural control facilities;
         iv. Direction of flow and exits from the site;
         v. Analysis of runoff provided by off-site areas upstream of the project site; and
         vi. Methodologies, assumptions, site parameters and supporting design calculations used in analyzing the existing conditions site hydrology.
      b. For redevelopment sites, predevelopment conditions shall be modeled using the established guidelines for the portion of the site undergoing land development activities.
   4. Post-development hydrologic analysis.
      a. The post-development hydrologic analysis for stormwater runoff rates, volumes, and velocities, which shall include:
         i. A topographic map of developed site conditions with the post-development drainage basin boundaries indicated; acreage, travel path, composite curve number for each sub-basin affected by the project;
         ii. All perennial and intermittent streams and other surface water features;

iii. All existing stormwater conveyances and structural control facilities;
iv. Travel path, direction of flow and exits from the site;
v. Analysis of runoff provided by off-site areas upstream of the project site; and

b. Total area of post-development impervious surfaces and other land cover areas for each sub-basin affected by the project;
c. Calculations for determining the runoff volumes that need to be addressed for each sub-basin for the development project to meet the post-development stormwater management performance criteria in City of Baldwin, Georgia Minimum Development Standards Ordinance;
d. Location and boundaries of proposed natural feature protection and conservation areas;
e. Documentation and calculations for any applicable site design credits that are being utilized; and
f. Methodologies, assumptions, site parameters and supporting design calculations used in analyzing the existing conditions site hydrology.

D. Redevelopment Exceeding Half of the Site Area
If the land development activity on a redevelopment site constitutes more than 50 percent of the site area for the entire site, then the performance criteria in City of Baldwin, Georgia Minimum Development Standards Ordinance shall be met for the stormwater runoff from the entire site.

E. Stormwater Management System
The description, scaled drawings and design calculations for the proposed post-development stormwater management system, which shall include:

1. A map and/or drawing or sketch of the stormwater management facilities, including the location of nonstructural site design features and the placement of existing and proposed structural stormwater controls, including design water surface elevations, storage volumes available from zero to maximum head, location of inlet and outlets, location of bypass and discharge systems, and all orifice/restrictor sizes;
2. A narrative describing how the selected structural stormwater controls will be appropriate and effective;
3. Cross-section and profile drawings and design details for each of the structural stormwater controls in the system, including supporting calculations to show that the facility is designed according to the applicable design criteria;
4. Hydrologic and hydraulic analysis of the stormwater management system for all applicable design storms (including stage-storage tables, orifice and weir data, and inflow and outflow hydrographs);
5. Documentation and supporting calculations to show that the stormwater management system adequately meets the post-development stormwater management performance criteria in City of Baldwin, Georgia Minimum Development Standards Ordinance;
6. Drawings, design calculations, elevations and hydraulic grade lines for all existing and proposed stormwater conveyance elements including storm drain pipes, culverts, drainage structures, channels, swales and areas of overland flow; and

7. Where applicable, a narrative describing how the stormwater management system corresponds with any watershed protection plans and/or local greenspace protection plan.

F. Post-development Downstream Analysis
A downstream peak flow analysis which includes the assumptions, results and supporting calculations to show safe passage of post-development design flows downstream. The analysis of downstream conditions in the report shall address each and every point or area along the project site's boundaries at which runoff will exit the property. The analysis shall focus on the portion of the drainage channel or watercourse immediately downstream from the project. This area shall extend downstream from the project to a point in the drainage basin where the project area is ten percent of the total basin area. In calculating runoff volumes and discharge rates, consideration may need to be given to any planned future upstream land use changes. The analysis shall be in accordance with the Georgia Stormwater Management Manual, latest edition.

4.12 Construction Phase Erosion, Sedimentation, and Pollution Control Plan
An erosion, sedimentation, and pollution control plan in accordance with the Manual for Erosion and Sediment Control in Georgia, latest edition, City of Baldwin, Georgia Minimum Development Standards Ordinance, City of Baldwin, Georgia Soil and Erosion Ordinance, latest edition, and NPDES Permit for Construction Activities (if applicable). The plan shall also include information on the sequence/phasing of construction and temporary stabilization measures and temporary structures that will be converted into permanent stormwater controls.

4.13 Landscaping and Open Space Plan
A detailed landscaping and vegetation plan describing the woody and herbaceous vegetation that will be used within and adjacent to stormwater management facilities and practices. The landscaping plan must also include:

A. The arrangement of planted areas, natural and greenspace areas and other landscaped features on the site plan;
B. Information necessary to construct the landscaping elements shown on the plan drawings;
C. Descriptions and standards for the methods, materials and vegetation that are to be used in the construction;
D. Density of plantings; descriptions of the stabilization and management techniques used to establish vegetation; and
E. A description of who will be responsible for ongoing maintenance of vegetation for the stormwater management facility and what practices will be employed to ensure that adequate vegetative cover is preserved.

4.14 Operations and Maintenance Plan
Detailed description of ongoing operations and maintenance procedures for stormwater management facilities and practices are required to ensure their continued function as designed and constructed or preserved. These plans will identify the parts or components of a stormwater management facility or practice that need to be regularly or periodically

inspected and maintained, and the equipment and skills or training necessary. The plan shall include an inspection and maintenance schedule, maintenance tasks, responsible parties for maintenance, funding, access and safety issues. Provisions for the periodic review and evaluation of the effectiveness of the maintenance program and the need for revisions or additional maintenance procedures shall be included in the plan.

4.15 Stormwater Management Facility and Maintenance Access Easements

The developer shall execute easements to include the following:

A. A 20-foot drainage easement encompassing the entire perimeter of the facility and shall be measured from the 100-year stormwater ponding limits on the upstream side and extend to the toe of the slope on the downstream side of the dam.
B. A 20-foot minimum drainage easement measured ten feet in both directions from the appropriate centerline of all associated piping, channels, ditches, streams or other areas that are designed for stormwater to flow to and from the stormwater management facility;
C. A 12-foot access easement connecting the facility to the nearest public road right-of-way;
D. The property owner shall additionally grant permission to the City of Baldwin, its authorized agents and employees, to enter upon the property and to inspect and observe the facilities whenever the City of Baldwin deems necessary. The City of Baldwin maintains the right to make emergency repairs to the facility as deemed necessary. No obstruction shall be built, constructed, or planted that would inhibit proper function of the facility, associated drainage systems, or the easement(s). No portion of the easement(s) to and from the City of Baldwin road and around the perimeter of the facility shall be steeper than a grade of 3:1. The access easement must be clearly staked at the time of final platting.

4.16 Evidence of Acquisition of Applicable Local and Non-Local Permits

The applicant shall certify and provide documentation to the City of Baldwin that all other applicable environmental permits have been acquired for the site prior to approval of the stormwater management plan.

4.17 Stormwater Management Facilities Design Criteria

A. Fencing

Fences and warning signs shall be required on all stormwater and detention ponds, constructed wetlands, retention ponds or similar devices. Fences shall be five feet tall with a fourteen foot wide gate. Fences shall be black vinyl chain link or other approved material. Warning signs stating 'Authorized Personnel Only' shall be installed on the fence around the perimeter of the pond every 50 feet and on the gate. The gate shall remain locked. Fences shall be located along the outside edge of an earthen dam.

B. Survey Marker

A concrete survey marker shall be placed in the near vicinity of the stormwater management facility. The marker shall be a minimum of five inches by five inches in width and be embedded one foot into the ground. The marker shall have a "PK" nail embedded in the top. The marker must be placed above the high water elevation of the facility and within the drainage easement area. Alternate survey markers are allowed with prior approval from the City of Baldwin.

C. Outlet Structure and Pipe Construction

Outlet structures and pipe for above-ground stormwater facilities must be constructed of reinforced concrete. The outlet pipes shall have anti-seep collars.

D. Label the 100 year ponding elevation of the stormwater/detention pond and show the corresponding contour on the grading and drainage plan.
E. No stormwater/detention basin shall be constructed in a perennial stream or creek or its buffer.
F. Provide an access easement for maintenance to the pond from a public or private road. Maintenance access shall be at least 12 feet wide, have a maximum slope of 15%, be appropriately stabilized to withstand maintenance equipment and vehicles, and must extend to the forebay and outlet. The access easement shall be grassed or paved.
G. Provide a forebay at each inlet into pond. The forebay shall be between 4 and 6 feet deep.
H. The forebay bottom elevation shall be greater than the permanent pool bottom elevation so the inlet pipe(s) and forebay are not completely submerged.
I. Include a silt gauge in each forebay.
J. Provide steps to access inside of the outlet control structure.
K. A stormwater pond with a micropool or permanent pool must have a bottom drain pipe with an adjustable valve that can completely or partially drain the pond within 24 hours.
L. Label all structural stormwater controls on plans. Ensure that this labeling on both the plans and in the stormwater management report is consistent with the Georgia Stormwater Management Manual, latest edition.
M. Minimum top width of all structural stormwater controls with an earthen dam shall be 10 ft.
N. Minimum freeboard above 100 year ponding elevation is 1 ft. for all detention structural stormwater controls and stormwater ponds.

4.18 Stormwater Management Inspection and Maintenance Agreements

A. Prior to the issuance of any permit for a land development activity requiring a stormwater management facility or practice hereunder and for which the City of Baldwin requires ongoing maintenance, the applicant or owner of the site must execute an inspection and maintenance agreement, and/or a conservation easement, if applicable, that shall be binding on all subsequent owners of the site.
B. The inspection and maintenance agreement, if applicable, must be approved by the City of Baldwin prior to plan approval, and recorded in the deed records upon final plat approval.
C. The inspection and maintenance agreement 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, unless assumed by a governmental agency, 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.
D. 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 and shall also include remedies for the default thereof.

E. In addition to enforcing the terms of the inspection and maintenance agreement, the City of Baldwin may also enforce all of the provisions for ongoing inspection and maintenance in City of Baldwin, Georgia Minimum Development Standards Ordinance.

5.0 Stream Buffer Protection

5.1 Purpose

A. The Baldwin City Council has determined that an impervious setback adjacent to streams provides numerous benefits including:
   1. Protecting, restoring and maintaining the chemical, physical and biological integrity of streams and their water resources;
   2. Removing pollutants delivered in urban stormwater;
   3. Reducing erosion and controlling sedimentation;
   4. Protecting and stabilizing stream banks;
   5. Providing for infiltration of stormwater runoff;
   6. Maintaining base flow of streams;
   7. Contributing organic matter that is a source of food and energy for the aquatic ecosystem;
   8. Furnishing scenic value and recreational opportunity; and
   9. Providing opportunities for the protection and restoration of greenspace.

B. It is the purpose of this section to protect the public health, safety, environment and general welfare; to minimize public and private losses due to erosion, siltation and water pollution; and to maintain stream water quality by provisions designed to:
   1. Create impervious setback zones along the streams of Baldwin, Georgia for the protection of water resources; and
   2. Minimize land development within such buffers by establishing impervious setback zone requirements and by requiring authorization for any such activities.

5.2 Definitions

The following words, terms and phrases, when used in this section, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:
Buffer is, with respect to a stream, a natural or enhanced vegetated area (established by this section) lying adjacent to the stream.
Impervious cover is any manmade paved, hardened or structural surface regardless of material. Impervious cover includes, but is not limited to, rooftops, buildings, streets, roads, decks, swimming pools and any concrete, asphalt, or gravel.
Land development is any land change, including but not limited to clearing, grubbing, stripping, removal of vegetation, dredging, grading, excavating, transporting and filling of land, construction, paving and any other installation of impervious cover.
Land development activity is those actions or activities which comprise, facilitate or result in land development.
Land disturbance is any land or vegetation change, including, but not limited to, clearing, grubbing, stripping, removal of vegetation, dredging, grading, excavating, transporting and filling of land, that does not involve construction, paving or any other installation of impervious cover.
Land disturbance activity is those actions or activities which comprise, facilitate or result in land disturbance.

Floodplain is any land area susceptible to flooding, which would have at least a one percent probability of flooding occurrence in any calendar year based on the basin being fully developed as shown on the current land use plan; i.e., the regulatory flood.
Parcel is any plot, lot or acreage shown as a unit on the latest county tax assessment records.
Permit is the permit issued by Baldwin, Georgia required for undertaking any land development activity.
Person is any individual, partnership, proprietorship, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, city, county or other political subdivision of the State, any interstate body or any other legal entity.
Protection area or *stream protection area* is, with respect to a stream, the combined areas of all required buffers and setbacks applicable to such stream.
Riparian is belonging or related to the bank of a river, stream, lake, pond or impoundment.
Setback is, with respect to a stream, the area established by this section extending beyond any buffer applicable to the stream.
Stream is any stream, beginning at:

1. The location of a spring, seep, or groundwater outflow that sustains streamflow; or
2. A point in the stream channel with a drainage area of 25 acres or more; or
3. Where evidence indicates the presence of a stream in a drainage area of other than 25 acres, Baldwin, Georgia may require field studies to verify the existence of a stream.

Stream bank is the sloping land that contains the stream channel and the normal flows of the stream.
Stream channel is the portion of a watercourse that contains the base flow of the stream.
Watershed is the land area that drains into a particular stream.

5.3 Applicability

This section shall apply to all land development activity on property containing a stream protection area as defined in the City of Baldwin, Georgia Minimum Development Standards Ordinance. These requirements are in addition to, and do not replace or supersede, any other applicable buffer requirements established under state law, and approval or exemption from these requirements does not constitute approval or exemption from buffer requirements established under state law or from other applicable local, state or federal regulations.

5.4 Grandfather Provisions

This section shall not apply to the following activities:

A. Work consisting of the repair or maintenance of any lawful use of land that is zoned and approved for such use on or before the effective date of this chapter.
B. Existing development and on-going land disturbance activities including but not limited to existing agriculture, silviculture, landscaping, gardening and lawn maintenance, except that new development or land disturbance activities on such properties will be subject to all applicable buffer requirements.

C. Any land development activity that is under construction, fully approved for development, scheduled for permit approval or has been submitted for approval as of the effective date of this chapter.
D. Land development activity that has not been submitted for approval, but that is part of a larger master development plan, such as for an office park or other phased development that has been previously approved within two years of the effective date of this chapter.

5.5 Exemptions

The following specific activities are exempt from this chapter. Exemption of these activities does not constitute an exemption for any other activity proposed on a property.

A. Activities for the purpose of building one of the following:
   1. A stream crossing by a driveway, transportation route or utility line;
   2. Public water supply intake or public wastewater outfall structures;
   3. Intrusions necessary to provide access to a property;
   4. Public access facilities that must be on the water including boat ramps, docks, foot trails leading directly to the river, fishing platforms and overlooks; or
   5. Elevated boardwalks.
B. Public sewer line easements paralleling the creek, except that all easements (permanent and construction) and land disturbance should be at least 25 feet from the top of the bank. This includes such impervious cover as is necessary for the operation and maintenance of the utility, including but not limited to manholes, vents and valve structures. This exemption shall not be construed as allowing the construction of roads, bike paths or other transportation routes in such easements, regardless of paving material, except for access for the uses specifically cited in City of Baldwin, Georgia Minimum Development Standards Ordinance.
C. Land development activities within a right-of-way existing at the time this chapter takes effect or approved under the terms of this chapter.
D. Within an easement of any utility existing at the time this chapter takes effect or approved under the terms of this chapter, land disturbance activities and such impervious cover as are necessary for the operation and maintenance of the utility, including but not limited to manholes, vents and valve structures.
E. Emergency work necessary to preserve life or property is exempt. However, when emergency work is performed under this chapter, the person performing it shall report such work to the City of Baldwin on the next business day after commencement of the work. Within ten days thereafter, the person shall apply for a permit and perform such work within such time period as may be determined by the City of Baldwin to be reasonably necessary to correct any impairment such emergency work may have caused to the water conveyance capacity, stability or water quality of the protection area.

After the effective date of this chapter, it shall apply to new subdividing and platting activities. Any land development activity within a buffer established hereunder or any impervious cover within a setback established hereunder is prohibited unless a variance is granted pursuant to City of Baldwin, Georgia Minimum Development Standards Ordinance.

5.6 Stream Buffer and Setback Requirements

All land development activity subject to this chapter shall meet the following requirements:

A. An undisturbed natural vegetative buffer shall be maintained for 25 feet, measured horizontally, on both banks (as applicable) of the stream as measured from the top of the stream bank. This buffer shall not be altered or reduced by any method without a stream buffer variance approved by the Georgia Environmental Protection Division. See Georgia EPD Chapter 391-3-7.05 Buffer Variance Procedures and Criteria for application requirements and activities that do not require approval of a stream buffer variance.

B. An additional setback shall be maintained beyond the natural vegetative buffer, in which all impervious cover shall be prohibited. Stormwater management structures shall be allowed within this setback however, all other grading, filling and earthmoving shall be minimized. The setback shall be for a uniform distance of 25 feet, measured horizontally, from the undisturbed natural vegetative buffer boundary.

C. No septic tanks or septic tank drain fields shall be permitted within the buffer or the setback, except that existing septic systems constructed prior to the effective date of this chapter may be maintained or replaced, but not enlarged within the required buffer and setback area.

5.7 Variance

A variance from impervious setback requirements in this chapter may be granted in accordance with the following provisions:

A. Where a parcel was platted prior to the effective date of this chapter, and its shape, topography or other existing physical condition prevents land development consistent with this chapter, and the City of Baldwin finds and determines that the requirements of this chapter prohibit the otherwise lawful use of the property by the owner, the City of Baldwin may grant a variance from the impervious setback requirement hereunder, provided such variance requires mitigation measures to offset the effects of any proposed land development on the parcel.

B. Except as provided above, the Baldwin City Council shall grant no variance from any provision of this chapter without first conducting a public hearing on the application for variance and authorizing the granting of the variance by an affirmative vote of the Council. The Baldwin City Council shall give public notice of each such public hearing in a newspaper of general circulation within Baldwin, Georgia a minimum of 30 days prior to the public hearing. The City of Baldwin shall require that the applicant post a sign giving notice of the proposed variance and the public hearing a minimum of 30 days prior to the public hearing. The sign shall be of a size and posted in such a location on the property as to be clearly visible from the primary adjacent road right-of-way. Variance requests shall be heard by the Baldwin City Council at the next scheduled public meeting that is 30 days or more after the public notice has been published and posted. The city council shall have 30 days from the date of its hearing within which to make its decision to grant or deny the variance.

   Variances will be considered only in the following cases:

1. When a property's shape, topography or other physical conditions existing at the time of the adoption of this chapter prevents land development unless a setback variance is granted.
2. Unusual circumstances when strict adherence to the minimal setback requirements in the chapter would create an extreme hardship.

Variances will not be considered when, following adoption of this chapter, actions of any property owner of a given property have created conditions of a hardship on that property.

C. At a minimum, a variance request shall include the following information:
   1. A site map that includes locations of all streams, wetlands, floodplain boundaries and other natural features, as determined by field survey;
   2. A description of the shape, size, topography, slope, soils, vegetation and other physical characteristics of the property;
   3. A detailed site plan that shows the locations of all existing and proposed structures and other impervious cover, the limits of all existing and proposed land disturbance, both inside and outside of the setback. The exact area of the setback to be affected shall be accurately and clearly indicated;
   4. Documentation of unusual hardship should the setback be maintained;
   5. At least one alternative plan, which does not include a setback intrusion, or an explanation of why such a site plan is not possible;
   6. A calculation of the total area and length of the proposed intrusion;
   7. A stormwater management site plan, if applicable; and,
   8. Proposed mitigation, if any, for the intrusion. If no mitigation is proposed, the request must include an explanation of why none is being proposed.
D. The following factors will be considered in determining whether to issue a variance:
   1. The shape, size, topography, slope, soils, vegetation and other physical characteristics of the property;
   2. The locations of all streams on the property, including along property boundaries;
   3. The location and extent of the proposed setback intrusion;
   4. Whether alternative designs are possible which require less intrusion or no intrusion;
   5. The long-term and construction water quality impacts of the proposed variance; and,
   6. Whether issuance of the variance is at least as protective of natural resources and the environment.

5.8 Compatibility with Other Buffer Regulations and Requirements

This section is not intended to interfere with, abrogate or annul any other ordinance, rule or regulation, statute or other provision of law. The requirements of this chapter should be considered minimum requirements, and where any provision of this chapter imposes restrictions different from those imposed by any other ordinance, rule, regulation or other provision of law, whichever provisions are more restrictive or impose higher protective standards for human health or the environment shall be considered to take precedence.

5.9 Requirement of Additional Information for Development on Setback Zone Properties

A. Any permit applications for property requiring setbacks hereunder must include the following:
   1. A site plan showing:
      a. The location of all streams on the property;
      b. Limits of required stream buffers and setbacks on the property;
      c. Buffer zone topography with contour lines at no greater than five-foot contour intervals;
      d. Delineation of forested and open areas in the buffer zone; and,
      e. Detailed plans of all proposed impervious cover within the setback;
   2. A description of all proposed impervious area within the setback; and,
   3. Any other documentation that the City of Baldwin may reasonably deem necessary for review of the application and to ensure that the requirements of this section are addressed in the approval process.

B. During development activities, and all phases of construction, the buffer perimeters shall be marked with a temporary sign at an interval of one per parcel, or every 100 feet, whichever is less. Signs shall remain in place prior to and during approved construction activities. The sign shall contain the following statement "Streamside Buffer - Do Not Remove or Alter Existing Native Vegetation." Other plainly visible marking methods are acceptable in lieu of the signage, including, but not limited to tree save fencing, painted markings on trees, or orange silt fence.

C. Replanting of all pervious area in the setback shall be required where disturbance has occurred. The replanting shall be accomplished within 14 days of the buffer impact using native vegetation or by following current Natural Resources Conservation Service (NRCS) conservation practice standards. The City of Baldwin or his/her designee shall approve the revegetation plan.

D. All buffer and setback areas must be recorded on the final plat of the property following plan approval.

5.10 Responsibility

Neither the issuance of a development permit nor compliance with the conditions thereof, nor with the provisions of this chapter shall relieve any person from any responsibility otherwise imposed by law for damage to persons or property; nor shall the issuance of any permit hereunder serve to impose any liability upon the City of Baldwin, its officers or employees, for injury or damage to persons or property.

The City of Baldwin may cause inspections of the work in the setback to be made periodically during the course thereof and shall make a final inspection following completion of the work. The permittee shall assist the City of Baldwin in making such inspections. The City of Baldwin shall have the authority to conduct such investigations as it may reasonably deem necessary to carry out its duties as prescribed in this section, and for this purpose to enter at reasonable time upon any property, public or private, for the purpose of investigating and inspecting the sites of any land development activities within the protection area.

No person shall refuse entry or access to any authorized representative or agent who requests entry for 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 official duties.

5.11 Violations, Enforcement and Penalties

Any action or inaction which violates the provisions of this section or the requirements of an approved site plan or permit may be subject to the enforcement actions outlined in this section. Any such action or inaction which is continuous with respect to time is deemed to be a public nuisance and may be abated by injunctive or other equitable relief. The imposition of any of the penalties described below shall not prevent such equitable relief.

A. Notice of Violation

If The City of Baldwin determines that an applicant or other responsible person has failed to comply with the terms and conditions of a permit, an approved site plan or the provisions of this section, it shall issue a written notice of violation to such applicant or other responsible person. Where a person is engaged in activity covered by this section without having first secured the appropriate permit therefore, the notice of violation shall be served on the owner or the responsible person in charge of the activity being conducted on the site.

The notice of violation shall contain:

1. The name and address of the owner or the applicant or the responsible person;
2. The address or other description of the site upon which the violation is occurring;
3. A statement specifying the nature of the violation;
4. A description of the remedial measures necessary to bring the action or inaction into compliance with the permit, the approved site plan or this section and the date for the completion of such remedial action;
5. A statement of the penalty or penalties that may be assessed against the person to whom the notice of violation is directed; and,
6. A statement that the determination of violation may be appealed to the Municipal Court of the City of Baldwin by filing a written notice of appeal within 30 days after the notice of violation (except that in the event the violation constitutes an immediate danger to public health or public safety, 24 hours notice shall be sufficient).

B. Penalties

In the event the remedial measures described in the notice of violation have not been completed by the date set forth for such completion in the notice of violation, any one or more of the following actions or penalties may be taken or assessed against the person to whom the notice of violation was directed. Before taking any of the following actions or imposing any of the following penalties, the City of Baldwin shall first notify the applicant or other responsible person in writing of its intended action, and shall provide a reasonable opportunity, of not less than ten days (except that in the event the violation constitutes an immediate danger to public health or public safety, 24 hours notice shall be sufficient) to cure such violation. In the event the applicant or other responsible person fails to cure such violation after such notice and cure period, the City of Baldwin may take any one or more of the following actions or impose any one or more of the following penalties.

1. Stop-work order. The City of Baldwin may issue a stop-work order which shall be served on the applicant or other responsible person. The stop-work order shall remain in

effect until the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violation or violations described therein, provided the stop-work order may be withdrawn or modified to enable the applicant or other responsible person to take necessary remedial measures to cure such violation or violations.

2. Withhold certificate of occupancy. The City of Baldwin may refuse to issue a certificate of occupancy for the building or other improvements constructed or being constructed on the site until the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violations described therein.
3. Suspension, revocation, or modification of permit. The City of Baldwin may suspend, revoke or modify the permit authorizing the land development project. A suspended, revoked or modified permit may be reinstated after the applicant or other responsible person has taken the remedial measures set forth in the Notice of Violation or has otherwise cured the violations described therein, provided such permit may be reinstated (upon such conditions as the City of Baldwin may deem necessary) to enable the applicant or other responsible person to take the necessary remedial measures to cure such violations.
4. Civil penalties. In the event the applicant or other responsible person fails to take the remedial measures set forth in the notice of violation or otherwise fails to cure the violations described therein within ten days (or such greater period as the City of Baldwin shall deem appropriate) (except that in the event the violation constitutes an immediate danger to public health or public safety, 24 hours notice shall be sufficient) after the City of Baldwin has taken one or more of the actions described above, the City of Baldwin may impose a penalty not to exceed $1,000 (depending on the severity of the violation) for each day the violation remains unremedied after receipt of the notice of violation.
5. Criminal penalties. For intentional and flagrant violations of this chapter, any applicant, responsible person, firm, corporation, association partnership, or proprietorship violating any provision of this chapter as the same exists or as it may hereinafter be amended, or shall fail to do anything required by this section as the same exists or as it may hereafter be amended, shall be guilty of a misdemeanor, amenable to the process of the Municipal Court of the City of Baldwin, and upon conviction, shall be punished as provided in the City of Baldwin, Georgia Minimum Development Standards Ordinance for each violation in the discretion of the court. Each act of violation and each day upon which any violation shall occur shall constitute a separate offense.

5.12 Administrative Appeal and Judicial Review

A. Administrative appeal. Any person aggrieved by a decision or order of the City of Baldwin pursuant to this section, may appeal in writing within 15 days after the issuance of such decision or order to the Baldwin City Council and shall be entitled to a hearing before the Baldwin City Council within 45 days of receipt of the written appeal.

B. Judicial review. Any person aggrieved by a decision or order of the City of Baldwin, after exhausting all administrative remedies, shall have the right to appeal de novo to the Municipal Court of the City of Baldwin.

6.0 Stormwater Conveyance Systems

6.1 Stormwater Conveyance System Guidelines

Adequate stormwater conveyance facilities including, but not limited to, culverts, bridges, storm drain pipes, catch basins, curb inlets, drop inlets, weir inlets, junction boxes, headwalls, flared end sections, gutter, channels, ditches, and swales shall be provided to ensure proper drainage of all surface runoff. Stormwater conveyance facilities, existing or proposed, shall meet the following requirements:

A. Methods to calculate stormwater flows shall be in accordance with the Georgia Stormwater Management Manual, latest edition;
B. All culverts, piped drainage systems, and open channel flow systems shall be sized in accordance with the stormwater management plan using the methods included in the Georgia Stormwater Management Manual, latest edition; and,
C. Design and construction of stormwater conveyance facilities shall be in accordance with the criteria and specifications in the Georgia Stormwater Management Manual, latest edition.
D. Location and sizing of all existing and proposed drainage conveyance systems shall be the responsibility of a registered professional engineer licensed by the State of Georgia, subject to approval by the City of Baldwin.

6.2 Storm Drain Pipe

A. Requirements
   1. Minimum storm drain pipe diameter shall be 18 inches.
   2. Minimum storm drain pipe slope shall be 0.50%.
   3. Storm drain pipe shall be designed to maintain a minimum velocity of 2.5 ft/s to minimize sediment collection.
   4. Maximum hydraulic gradient of storm drain pipes shall not produce a velocity that exceeds 15 ft/s.
   5. Ensure the appropriate gauge or class of storm drain pipe is utilized to accommodate the height of fill over the pipe in accordance with Georgia Department of Transportation standard 1030D.
   6. The 25-year storm event shall be used to design storm drain pipes. Where a spring, creek, or other watercourse traverses the property, the 100-year storm event shall be used for design.
   7. Georgia Department of Transportation standards for drainage structures shall be utilized for all drainage structures.
   8. Catch basins and curb inlets shall be located outside of intersection radii unless circumstances cause undue hardship, in which case the City of Baldwin may waive this requirement.
   9. Runoff from the street shall be designed using the 25-year storm event and maximum encroachment shall not be greater than half of the travel lane width from the face of curb. Cul-de-sacs on downhill street grades shall require catch basin throat design at the low point to capture the runoff.
   10. Sub-drainage shall be installed to control excess groundwater by intercepting side hill seepage or by lowering or regulating the ground water level where such conditions exist.

11. Certification for all storm drain pipe from the manufacturer shall be submitted prior to installation.
12. Culverts and bridges shall be designed for the 100-year storm event. Culverts carrying stream/ditch flow under a street shall be sized so headwater height does not exceed curb or edge of pavement elevation during 100 year storm event.
13. The inlet and outlet end of all storm drain pipes (including driveway pipes) shall have either flared-end sections, safety end sections, or concrete headwalls that meet the Georgia Department of Transportation standards.
14. Riprap shall be provided upstream of all inlet headwalls, flared end sections, and safety end sections. Riprap shall be sized in accordance with the Manual for Erosion and Sedimentation Control in Georgia, latest edition.
15. Riprap shall be provided downstream of all discharge storm drain locations. Riprap shall be sized in accordance with the Manual for Erosion and Sedimentation Control in Georgia, latest edition.
16. Proposed cross drain pipes shall be installed perpendicular to the road. No storm drain pipe that is proposed to be installed parallel to the existing or proposed road shall be located beneath the proposed pavement including acceleration/deceleration lanes.
17. Only reinforced concrete pipe shall be installed under a road.
18. Only reinforced concrete and high density polyethylene pipe shall be installed within the street right-of-way.
19. Maximum slope of reinforced concrete pipe shall be 10%. Maximum slope of HDPE and aluminized steel Type II pipe shall be 14%. Any storm drain pipe installed at a slope exceeding the above slopes shall have anchor collars.
20. Where a wet weather drainage ditch exists between the existing or proposed road and 20 feet into the lot, the engineer shall size the driveway culvert as if the driveway is at the lowest point on that parcel.
21. Maximum continuous length of storm drain pipe shall be 500 feet.
22. Locate drainage structure at every change of direction and grade of storm drain pipe. Minimum angle between storm drain pipes entering and exiting drainage structure is 90°.
23. Extend storm drain pipe 20 feet past the rear of any building.
24. Reinforced concrete box culverts shall be required where there is excessive flow and/or fill depth conditions.
25. Minimum pipe diameter for roof drains shall be 12 inches. HDPE pipe shall be used for roof drains.

B. Installation
1. Pipe installation shall conform to Georgia Department of Transportation Standard Specifications Construction of Transportation Systems, latest edition. Before any load is allowed over a storm drain pipe, the adequate depth and width of compacted backfill shall be provided to protect the structure from damage or displacement.
2. Bedding of storm drain pipe shall be in accordance with City of Baldwin details.
3. Backfilling of trenches shall be accomplished immediately after the storm drain pipe has been installed. The fill around the storm drain pipe shall be placed in layers not to exceed 6 inches with each layer being thoroughly compacted prior to the placement of the subsequent layer. 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

depths greater than 6 inches below the finished grade. Compaction requirements shall be attained by the use of mechanical compaction methods. Each layer of backfill shall be placed loosely and thoroughly compacted in place.

4. All backfill shall be nonplastic in nature, free from roots, vegetative matter, waste, construction material or other objectionable material. Backfill 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.
5. Material deemed by the City of Baldwin as unsuitable for backfill purposes shall be removed and replaced with selected backfill material.
6. Trench construction for storm drain pipe shall be in accordance with Georgia Department of Transportation Standard 1030D and City of Baldwin details.
7. Water shall not be permitted to rise in trenches that are not backfilled after the storm drain pipe has been placed.
8. Minimum Clearances
   a. A minimum of 2 feet between the bottom of the base or subbase, if used, and the exterior crown of the storm drain pipe or culvert is required under the roadway.
   b. A minimum of 1 foot of cover shall be placed over all other storm drain pipes.
   c. A minimum of 6 inches is required between underground utilities and exterior crown of culverts.
9. The Developer shall remove any debris or silt that constricts the flow through a pipe as often as necessary to maintain drainage. All storm drain pipes and drainage 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.

C. Pipe Chart, Storm Drain Profiles, and Notes
   1. A pipe chart shall be required. All storm drain pipes shall be included in the pipe chart.
   2. Include the following in the pipe chart:
      a. Upstream/downstream structure type (DWCB, SWCB, DI, JB, etc.)
      b. Pipe numbers/Pipe structures
      c. Pipe size
      d. Pipe length
      e. Pipe slope
      f. Contributing drainage area
      g. Design discharge (Q_{25} for piped drainage not under roadway; Q_{100} for piped drainage under roadway)
      h. Design storm frequency (25 year for piped drainage not under roadway; 100 year for piped drainage under roadway)
      i. Velocity (V_{25} for piped drainage not under roadway; V_{100} for piped drainage under roadway)
      j. Runoff coefficient (per future land use plan and assuming no detention)
      k. Rainfall intensity
      l. Pipe material
      m. Manning roughness coefficient
   3. Include note: Grates with bars shall be perpendicular to road.
   4. Include note: The throat of the curb inlets shall not exceed 8 inches
   5. If using HDPE pipe, add the following note to plans:

HDPE pipe shall conform to the requirements of AASHTO M-294 and AASHTO MP7, Type S & D. Connections shall use a rubber gasket, which conforms to ASTM F-477. Installation shall be in accordance with ASTM Recommended Practice D-2321, AASHTO Section 30, or with Section 550 of the Georgia Department of Transportation Standard Specifications Construction of Transportation Systems, latest edition.

6. If using Aluminum coated Type 2 steel pipe or aluminum alloy pipe, add the following note to plans:
   All aluminum coated Type 2 steel pipe or aluminum alloy pipe, which will carry a live stream, shall have paved inverts in accordance with AASHTO M-190, type C, except that the pipe need not be fully coated. Installation shall be in accordance with Section 550 of the Georgia Department of Transportation Standard Specifications Construction of Transportation Systems, latest edition.
7. If using RCP pipe, add the following note to plans:
   All RCP pipe joints shall be bell & spigot types with a rubber gasket conforming to ASTM C-443. The pipe shall be manufactured in accordance with AASHTO M-170 and/or ASTM C-76. Class of pipe and wall thickness shall be in accordance with 1030-D, Georgia DOT specification, Table No. 1. Installation shall be in accordance with Section 550 of the Georgia Department of Transportation Standard Specifications Construction of Transportation Systems, latest edition.
8. Storm drain pipe profiles are required for all pipes. Profiles shall include existing and proposed ground elevations, pipe lengths, slopes, invert elevations, top of drainage structure elevations, and applicable (25 year/100 year) HGL.

D. Drainage Easements for Storm Drain Pipes
All storm drain pipes located outside of the right-of-way shall be within a drainage easement of minimum width in accordance with the table below.

Drainage Easements for Storm Drain Pipes

PIPE SIZE (IN)	MAXIMUM PIPE INVERT DEPTH (FT) MINIMUM EASEMENT WIDTH (FT)												
	4	5	6	7	8	9	10	11	12	13	14	15	16
18	20	20	20	20	20	25	25	30	30	30	35	35	40
24	20	20	20	20	20	25	25	30	30	30	35	35	40
30	20	20	20	20	25	25	25	30	30	35	35	35	40
36	20	20	20	20	25	25	25	30	30	35	35	35	40
42	NA	20	20	20	25	25	30	30	30	35	35	40	40
48	NA	20	20	20	25	25	30	30	30	35	35	40	40
54	NA	NA	20	25	25	25	30	30	35	35	35	40	40
60	NA	NA	20	25	25	25	30	30	35	35	35	40	40
66	NA	NA	NA	25	25	30	30	30	35	35	40	40	40
72	NA	NA	NA	25	25	30	30	30	35	35	40	40	40

6.3 Drainage Structures

A. Drainage structures shall conform to the Georgia Department of Transportation specifications.
B. Inlets shall be located to prevent stormwater from crossing an intersection.
C. Spacing of inlets shall not exceed 500 feet.
D. Inlets shall be sized to intercept runoff in the gutter section such that flow through the 100-year storm event will drain to the piped drainage system and any subsequent stormwater management facility for which it was designed, delineated on the post-developed drainage area map, and in the hydrology analysis.
E. Inlets located in a sag shall be sized to prevent gutter spread from covering more than half of the road's travel lane during the 25-year storm event.

6.4 Channels

A. All channels shall be designed to route the 100 year flow without overtopping and lined appropriately based on the 25 year flow velocity.
B. Maximum side slopes of channels with vegetative lining shall be 3:1. Maximum side slopes of channels with rip rap or concrete shall be 2:1. See Section 5.4 of the Georgia Stormwater Management Manual, latest edition, to determine the appropriate channel lining material based on the 25-year velocity.
C. The channel directly downstream of a cross drain pipe shall be designed to limit the 25-year storm runoff velocity to less than or equal to 5.0 ft/s. If the 25-year velocity exceeds 5 ft/s, then the channel must be lined with riprap over filter fabric.
D. Minimum bottom width of all channels shall be 2 feet.
E. Provide a minimum of a 20 ft. drainage easement around channels. Ensure 100 year flow elevation of channel is within the drainage easement
F. Provide channel profiles. Show existing and proposed ground surface profiles, channel lengths, and 100 year normal flow elevation.
G. Provide channel cross-section detail. Show bottom width, side slopes, 100 year normal flow depth, and overall depth
H. Include the following with the channel cross-section detail:
    1. Open channel numbers
    2. Contributing drainage area
    3. Runoff coefficient (per future land use plan and assuming no detention)
    4. Conveyance size
    5. Lining material
    6. Channel length
    7. Channel slope
    8. Velocity (V_{25} may not exceed non-erosive velocity – Maximum 4 ft/s for sod.)
    9. Design storm frequency (100 year)
    10. Design discharge (100 year)
    11. Normal flow depth (100 year)
    12. Manning roughness coefficient

7.0 Floodplain Management and Flood Damage Prevention

7.1 General Provisions

A. The purpose of this section is to protect, maintain and enhance the public health, safety, environment and general welfare and to minimize public and private losses due to flood conditions in flood hazard areas, as well as to protect the beneficial uses of floodplain areas for water quality protection, stream bank and stream corridor protection, wetlands preservation and ecological and environmental protection by provisions designed to:
   1. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
   2. Restrict or prohibit uses which are dangerous to health, safety and property due to flooding or erosion hazards, or which increase flood elevations, velocities, or erosion;
   3. Control filling, grading, dredging and other development which may increase flood damage or erosion;
   4. Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands;
   5. Limit the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of flood waters; and,
   6. Protect the stormwater management, water quality, stream bank protection, stream corridor protection, wetland preservation, and ecological functions of natural floodplain areas.

B. This section shall be applicable to all areas of special flood hazard within City of Baldwin.

C. The City of Baldwin or its designee is hereby appointed to administer and implement the provisions of this section.

D. For the purposes of defining and determining "areas of special flood hazard," "areas of future-conditions flood hazard," "areas of shallow flooding," "base flood elevations," "floodplains," "floodways," "future-conditions flood elevations," "future-conditions floodplains," potential flood hazard or risk categories as shown on FIRM maps, and other terms used in this section, the following documents and sources may be used for such purposes and are adopted by reference thereto:
   1. The flood insurance study (FIS) dated June 2, 2009, with accompanying maps and other supporting data and any revision thereto.
   2. Other studies which may be relied upon for the establishment of the base flood elevation or delineation of the base or one percent (100-year) floodplain and flood prone areas, including:
      a. Any flood or flood-related study conducted by the United States Army Corps of Engineers, the United States Geological Survey or any other local, state or federal agency applicable to City of Baldwin; and
      b. Any base flood study conducted by a registered professional engineer licensed by the State of Georgia which has been prepared by utilizing FEMA approved methodology and approved by the City of Baldwin.
   3. Other studies, which may be relied upon for the establishment of the future-conditions flood elevation or delineation of the future-conditions floodplain and flood prone areas, including:

a. Any flood or flood-related study conducted by the United States Army Corps of Engineers, the United States Geological Survey, or any other local, state or federal agency applicable to City of Baldwin; and
b. Any future-conditions flood study conducted by a licensed professional engineer which has been prepared utilizing FEMA approved methodology approved by the City of Baldwin.

4. The repository for public inspection of the FIS, accompanying maps and other supporting data is located at the City of Baldwin.

E. This section is not intended to modify or repeal any other ordinance, rule, regulation, statute, easement, covenant, deed restriction or other provision of law. The requirements of this section are in addition to the requirements of any other ordinance, rule, regulation or other provision of law, and where any provision of this section imposes restrictions different from those imposed by any other ordinance, rule, regulation or other provision of law, whichever provision is more restrictive or imposes higher protective standards for human health or the environment shall control.

F. If the provisions of any section, subsection, paragraph, subdivision or clause of this section shall be adjudged invalid by a court of competent jurisdiction, such judgment shall not affect or invalidate the remainder of any section, subsection, paragraph, subdivision or clause of this section. The decision lawfully made thereunder.

7.2 Definitions

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

Addition is any walled and roofed expansion to the perimeter or height of a building.

Adjacent is those areas located within the defined horizontal distance from the future-conditions floodplain boundary that are at or lower in elevation than either three feet above the base flood elevation or one foot above the future-conditions flood elevation, whichever is higher, unless the area is hydraulically independent, (meaning absolutely no connection to the flooding source such as through pipes, sewer laterals, down drains, foundation drains, ground seepage, overland flow, gated or valved pipes, excavated and backfilled trenches, etc., with no fill or other manmade barriers creating the separation).

Appeal is a request for a review of the City of Baldwin's interpretation of any provision of this section.

Area of future-conditions flood hazard is the land area that would be inundated by the one percent annual chance flood based on future-conditions hydrology (100-year future-conditions flood).

Area of shallow flooding is a designated AO or AH Zone on a community's flood insurance rate map (FIRM) with a one percent or greater chance of flooding to an average depth of one to three feet, where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

Area of special flood hazard is the land area subject to a one percent or greater chance of flooding in any given year. This includes all floodplain and flood prone areas at or below the base flood elevation designated as Zones A, A1-30, A-99, AE, AO, AH, and AR on a community's flood insurance rate map (FIRM).

Accessory structure or facility is a structure which is on the same parcel of property as the principal structure and the use of which is incidental to the use of the primary structure.
Base flood is the flood having a one percent chance of being equaled or exceeded in any given year, also known as the 100-year flood.
Base flood elevation is the highest water surface elevation anticipated at any given location during the base flood.
Basement is any area of a building having its floor subgrade below ground level on all sides.
Building has the same meaning as "structure."
Development is any manmade change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, tilling, clearing, grubbing, grading, paving, any other installation of impervious cover, excavation or drilling operations or storage of equipment or materials.
Elevated building is a non-basement building which has its lowest elevated floor raised above the ground level by foundation walls, shear walls, post, piers, pilings or columns.
Existing construction is any structure for which the "start of construction" commenced before the effective date of the initial FIRM.
Existing manufactured home park or subdivision is 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 before the effective date of the initial FIRM.
Expansion to an existing manufactured home park or subdivision is 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.
FEMA is the Federal Emergency Management Agency.
Flood or *flooding* is a general and temporary condition of partial or complete inundation of normally dry land areas from:
1. The overflow of inland or tidal waters;
2. The unusual and rapid accumulation or runoff of surface waters from any source.
Flood insurance rate map or *FIRM* is an official map of a community, issued by FEMA, delineating the areas of special flood hazard and/or risk premium zones applicable to the community.
Flood insurance study or *FIS* is the official report by FEMA providing an examination, evaluation and determination of flood hazards and corresponding flood profiles and water surface elevations of the base flood.
Floodplain or *flood prone area* is any land area susceptible to flooding.
Flood proofing is 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 or *regulatory floodway* is the channel of a stream, river, or other watercourse and the adjacent areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.
Functionally dependent use is a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship

building and ship repair facilities, but does not include long-term storage or related manufacturing facilities.

Future-conditions flood is the flood having a one percent chance of being equaled or exceeded in any given year based on future-conditions hydrology. Also known as the 100-year future-conditions flood.

Future-conditions flood elevation is the highest water surface elevation anticipated at any given location during the future-conditions flood.

Future-conditions floodplain is any land area susceptible to flooding by the future-conditions flood.

Future-conditions hydrology is the flood discharges associated with projected land use conditions based on a community's zoning maps, comprehensive land use plans, and/or watershed study projections, and without consideration of projected future construction of stormwater management (flood detention) structures or projected future hydraulic modifications within a stream or other waterway, such as bridge and culvert construction, fill, and excavation.

Highest adjacent grade is the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

Historic structure is 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 of the Interior to qualify as a registered historic district;
3. Individually listed on a state inventory of historic places 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 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 is the lowest floor of the lowest enclosed area, including basement. An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access, or storage, in an area other than a basement area, 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 section.

Manufactured home is a structure, transportable in one or more sections, which is built on a permanent chassis and is designed to be used with or without a permanent foundation when attached to the required utilities. The term includes any structure commonly referred to as a "mobile home" regardless of the date of manufacture. The term also includes parked trailers, travel trailers and similar transportable structures placed on a site for 180 consecutive days or longer and intended to be improved property. The term does not include a "recreational vehicle."

Mean sea level is the datum to which base flood elevations shown on a community's flood insurance rate map (FIRM) are referenced. For purposes of this section, the term is synonymous with National Geodetic Vertical Datum (NGVD) of 1929 or the North American Vertical Datum (NAVD) of 1988.

New construction is any structure (see definition) for which the "start of construction" commenced on or after the effective date of the initial FIRM and includes any subsequent improvements to the structure.
New manufactured home park or subdivision is 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 the effective date of the initial FIRM.
Owner is the legal or beneficial owner of a site, including, but not limited to, a mortgagee or vendee in possession, receiver, executor, trustee, lessee or other person, firm or corporation in control of the site.
Permit is the permit issued by City of Baldwin to the applicant which is required prior to undertaking any development activity.
Recreational vehicle is a vehicle which is:

1. Built on a single chassis;
2. Designed to be self-propelled or permanently towable by light duty truck; and,
3. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

Repetitive loss is flood-related damage sustained by a structure on two separate occasions during a ten-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred.
Site is the parcel of land being developed, or the portion thereof on which the development project is located.
Start of construction includes substantial improvement, and is the date the permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or other improvement was within 180 days of the permit date. The actual start is either the first placement of permanent construction of the structure on a site such as the pouring of slabs or footings, the installation of piles, the 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 initial land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include 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 part of the main structure. For a substantial improvement, the actual start of construction is the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.
Structure is a walled and roofed building (including a gas or liquid storage tank) that is principally above ground, or a manufactured home.
Subdivision is the division of a tract or parcel of land resulting in one or more new lots or building sites for the purpose, whether immediately or in the future, of sale, other transfer of ownership or land development, and includes divisions of land resulting from or made in connection with the layout or development of a new street or roadway or a change in an existing street or roadway.

Substantial damage is damage of any origin sustained by a structure whereby the cost of restoring the structure to it's before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.
Substantial improvement is any reconstruction, rehabilitation, addition, or other improvement to a structure taking place during a ten-year period, in which the cumulative cost equals or exceeds 50 percent of the market value of the structure prior to the improvement. The market value of the building is (1) the appraised value of the structure prior to the start of the initial repair or improvement, or (2) in the case of damage, the value of the structure prior to the damage occurring. This term includes structures which have incurred "substantial damage," regardless of the actual repair work performed. The term does not, however, include those improvements of a structure required to comply with existing state or local health, sanitary, or safety code specifications which are the minimum necessary to assure safe living conditions, which have been identified by the City of Baldwin. The term also does not include 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 park or subdivision is 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.
Variance is a grant of relief from the requirements of this section.
Violation is the failure of a structure or other development to be fully compliant with requirements of this section. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in this section is presumed to be in violation until such time as that documentation is provided.

7.3 Permit Procedures and Requirements

A. Permit Application Requirements
   No owner or developer shall perform any development activities on a site where an area of special flood hazard or area of future-conditions flood hazard is located without first meeting the requirements of this section prior to commencing the proposed activity.
   1. Unless specifically excluded by this section, any landowner or developer desiring a permit for a development activity shall submit to City of Baldwin a permit application on a form provided by City of Baldwin for that purpose.
   2. No permit will be approved for any development activities that do not meet the requirements, restrictions and criteria of this section.

B. Floodplain Management Plan Requirements
   An application for a development project with any area of special flood hazard or area of future-conditions flood hazard located on the site shall include a floodplain management/flood damage prevention plan. This plan shall include the following items:
   1. Site plan drawn to scale, which includes but is not limited to:
      a. Existing and proposed elevations of the area in question and the nature, location and dimensions of existing and/or proposed structures, earthen fill placement, amount and location of excavation material, and storage of materials or equipment;
      b. For all proposed structures, spot ground elevations at building corners and 20-foot or smaller intervals along the foundation footprint, or one-foot contour elevations throughout the building site;

c. Proposed locations of water supply, sanitary sewer, and utilities;
d. Proposed locations of drainage and stormwater management facilities;
e. Proposed grading plan;
f. Base flood elevations and future-conditions flood elevations;
g. Boundaries of the base flood floodplain and future-conditions floodplain;
h. If applicable, the location of the floodway; and
i. Certification of the above by a licensed professional engineer or surveyor.

2. Building and foundation design detail, including but not limited to:
   a. Elevation in relation to mean sea level (or highest adjacent grade) of the lowest floor, including basement, of all proposed structures;
   b. Elevation in relation to mean sea level to which any nonresidential structure will be flood proofed;
   c. Certification that any proposed nonresidential flood proofed structure meets the criteria in section below;
   d. For enclosures below the base flood elevation, location and total net area of flood openings as required in the section below; and
   e. Design plans certified by a licensed professional engineer or architect for all proposed structure(s);
3. Description of the extent to which any watercourse will be altered or relocated as a result of the proposed development;
4. Hard copies and digital files of computer models, if any, copies of work maps, comparison of pre- and post-development conditions base flood elevations, future-conditions flood elevations, flood protection elevations, special flood hazard areas and regulatory floodways, flood profiles and all other computations and other information similar to that presented in the FIS;
5. Copies of all applicable state and federal permits necessary for proposed development, including but not limited to permits required by Section 404 of the Federal Water Pollution Control Act, Amendments of 1972, 33 U.S.C. 1334; and
6. All appropriate certifications required under this section.
   The approved floodplain management/flood damage prevention plan shall contain certification by the applicant that all development activities will be done according to the plan or previously approved revisions. Any and all development permits and/or use and occupancy certificates or permits may be revoked at any time if the construction and development activities are not in strict accordance with approved plans.

C. Construction Stage Submittal Requirements
   1. For all new construction and substantial improvements on sites with a floodplain management/flood damage prevention plan, the permit holder shall provide the City of Baldwin a certified as-built elevation certificate or flood proofing certificate for nonresidential construction, including the lowest floor elevation or flood proofing level immediately after the lowest floor or flood proofing is completed. A final elevation certificate shall be provided after completion of construction including final grading of the site. Any lowest floor certification made relative to mean sea level shall be prepared by or under the direct supervision of a licensed land surveyor or professional engineer and certified by same. When flood proofing is utilized for nonresidential structures, said certification shall be prepared by or under the direct supervision of a licensed professional engineer or architect and certified by same using the FEMA flood

proofing certificate. This certification shall also include the design and operation/maintenance plan to assure continued viability of the flood proofing measures.

2. Any work undertaken prior to approval of these certifications shall be at the permit holder's risk. The City of Baldwin shall review the above referenced certification data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further work being allowed to proceed. Failure to submit certification or failure to make the corrections required hereby shall be cause to issue a stop work order for the project.

D. Duties and Responsibilities of the City of Baldwin

Duties of the City of Baldwin shall include, but shall not be limited to:

1. Review all development applications and permits to assure that the requirements of this section have been satisfied and to determine whether proposed building sites will be reasonably safe from flooding;
2. Review proposed development to assure that all necessary permits have been received from those governmental agencies from which approval is required by Federal or State law, including but not limited to Section 404 of the Federal Water Pollution Control Act, Amendments of 1972, 33 U.S.C. 1334;
3. When base flood elevation data or floodway data have not been provided, then the City of Baldwin shall require the applicant to obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal, state or other sources in order to meet the provisions of the sections below;
4. 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 and substantially improved structures;
5. Review and record the actual elevation, in relation to mean sea level to which any substantially improved structures have been flood proofed;
6. When flood proofing is utilized for a nonresidential structure, the City of Baldwin shall review the design and operation/maintenance plan and obtain certification from a licensed professional engineer or architect;
7. Notify affected adjacent communities and the Georgia Department of Natural Resources (GA DNR) prior to any alteration or relocation of a watercourse and submit evidence of such notification to the Federal Emergency Management Agency (FEMA);
8. Where interpretation is needed as to the exact location of boundaries of the areas of special flood hazard (e.g., where there appears to be a conflict between a mapped boundary and actual field conditions), the City of Baldwin shall make the necessary interpretation. Any person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this section. Where floodplain elevations have been defined, the floodplain shall be determined based on flood elevations rather than the area graphically delineated on the floodplain maps;
9. All records pertaining to the provisions of this section shall be maintained in the office of the City of Baldwin and shall be open for public inspection;
10. Coordinate all FIRM revision with the GA DNR and FEMA; and
11. Review variance applications and make recommendations to the Baldwin City Council.

7.4 Standards for Development

A. Definition of Floodplain Boundaries
   1. Studied "A" zones, as identified in the FIS, shall be used to establish base flood elevations whenever available.
   2. For all streams with a drainage area of 100 acres or greater, the future-conditions flood elevations shall be provided by the City of Baldwin. If future-conditions elevation data is not available from the City of Baldwin, then it shall be determined by a licensed professional engineer using a method approved by FEMA and the City of Baldwin.

B. Definition of Floodway Boundaries
   1. The width of a floodway shall be determined from the FIS or FEMA-approved flood study. For all streams with a drainage area of 100 acres or greater, the regulatory floodway shall be provided by the City of Baldwin. If floodway data is not available from the City of Baldwin, then it shall be determined by a licensed professional engineer using a method approved by FEMA and the City of Baldwin.

C. General Standards
   1. No development shall be allowed within any area of special flood hazard or area of future-conditions flood hazard that could result in any of the following:
      a. Raising the base flood elevation or future-conditions flood elevation equal to or more than 0.01 foot;
      b. Reducing the base flood or future-conditions flood storage capacity;
      c. Changing the flow characteristics as to the depth and velocity of the waters of the base flood or future-conditions flood as they pass both the upstream and the downstream boundaries of the development area; or
      d. Creating hazardous or erosion-producing velocities, or resulting in excessive sedimentation.
   2. Any development within any area of special flood hazard or area of future-conditions flood hazard allowed in the section below shall also meet the following conditions:
      a. Compensation for storage capacity shall occur between the average ground water table elevation and the base flood elevation for the base flood, and between the average ground water table elevation and the future-condition flood elevation for the future-conditions flood, and lie either within the boundaries of ownership of the property being developed and shall be within the immediate vicinity of the location of the encroachment. Acceptable means of providing required compensation include lowering of natural ground elevations within the floodplain, or lowering of adjoining land areas to create additional floodplain storage. In no case shall any required compensation be provided via bottom storage or by excavating below the elevation of the natural (pre-development) stream channel unless such excavation results from the widening or relocation of the stream channel;
      b. Cut areas shall be stabilized and graded to a slope of no less than 2.0 percent;
      c. Effective transitions shall be provided such that flow velocities occurring on both upstream and downstream properties are not increased or decreased;
      d. Verification of no-rise conditions (0.01 foot or less), flood storage volumes, and flow characteristics shall be provided via a step-backwater analysis meeting the requirements below;

e. Public utilities and facilities, such as water, sanitary sewer, gas, and electrical systems, shall be located and constructed to minimize or eliminate infiltration or contamination from flood waters; and

f. Any significant physical changes to the base flood floodplain shall be submitted as a conditional letter of map revision (CLOMR) or conditional letter of map amendment (CLOMA), whichever is applicable. The CLOMR submittal shall be subject to approval by the City of Baldwin using the FEMA community concurrence forms before forwarding the submittal package to FEMA for final approval. The responsibility for forwarding the CLOMR to FEMA and for obtaining the CLOMR approval shall be the responsibility of the applicant. Within six months of the completion of development, the applicant shall submit as-built surveys and plans for a final letter of map revision (LOMR).

D. Engineering Study Requirements for Floodplain Encroachments

An engineering study is required, as appropriate to the proposed development activities on the site, whenever a development proposes to disturb any land within the future-conditions floodplain, except for a residential single-lot development on streams without established base flood elevations and floodways. This study shall be prepared by a licensed professional engineer and made a part of the application for a permit. This information shall be submitted to and approved by the City of Baldwin prior to the approval of any permit which would authorize the disturbance of land located within the future-conditions floodplain. Such study shall include:

1. Description of the extent to which any watercourse or floodplain will be altered or relocated as a result of the proposed development;
2. Step-backwater analysis, using a FEMA-approved methodology approved by the City of Baldwin. Cross-sections (which may be supplemented by the applicant) and flow information will be obtained whenever available. Computations will be shown duplicating FIS results and will then be rerun with the proposed modifications to determine the new base flood profiles, and future-conditions flood profiles;
3. Floodplain storage calculations based on cross-sections (at least one every 250 feet) showing existing and proposed floodplain conditions to show that base flood floodplain and future-conditions floodplain storage capacity would not be diminished by the development; and
4. The study shall include a preliminary plat, grading plan, or site plan, as appropriate, which shall clearly define all future-conditions floodplain encroachments.

E. Floodway Encroachments

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, floodways 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, except for activities specifically allowed in the section below;
2. Encroachments for bridges, culverts, roadways and utilities within the regulatory floodway may be permitted provided it is demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the

encroachment will not result in any increase to the pre-project base flood elevations, floodway elevations, or floodway widths during the base flood discharge. A registered professional engineer licensed by the State of Georgia must provide supporting technical data and certification thereof; and

3. If the applicant proposes to revise the floodway boundaries, no permit authorizing the encroachment into or an alteration of the floodway shall be issued by the City of Baldwin until an affirmative conditional letter of map revision (CLOMR) is issued by FEMA or a no-rise certification is approved by the City of Baldwin.

F. Maintenance Requirements

The property owner shall be responsible for continuing maintenance as may be needed within an altered or relocated portion of a floodplain on the property so that the flood-carrying or flood storage capacity is maintained. The City of Baldwin may direct the property owner (at no cost to City of Baldwin) to restore the flood-carrying or flood storage capacity of the floodplain if the owner has not performed maintenance as required by the approved floodplain management plan on file with the City of Baldwin.

7.5 Provisions for Flood Hazard Reduction

In all areas of special flood hazard and areas of future-conditions flood hazard, the following provisions apply:

A. General Standards

1. New construction and substantial improvements of structures (residential or nonresidential), including manufactured homes, shall not be allowed within the limits of the future-conditions floodplain, unless all requirements of the sections below have been met;
2. New construction and substantial improvements shall be anchored to prevent flotation, collapse and lateral movement of the structure;
3. New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;
4. New construction and substantial improvements shall be constructed by methods and practices that minimize flood damage;
5. Elevated buildings: All new construction and substantial improvements that include any fully enclosed area located below the lowest floor formed by foundation and other exterior walls shall be designed so as to be an unfinished or flood-resistant enclosure. The enclosure shall be designed to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwater.
   a. Designs for complying with this requirement must be certified by a professional engineer licensed by the State of Georgia to meet or exceed the following minimum criteria:
      i. Provide a minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding;
      ii. The bottom of all openings shall be no higher than one foot above grade; and
      iii. Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwater in both directions;
   b. So as not to violate the "lowest floor" criteria of this section, the unfinished and flood-resistant enclosure shall solely be used for parking of vehicles, limited storage

of maintenance equipment used in connection with the premises, or entry to the elevated area;

c. The interior portion of such enclosed area shall not be finished or partitioned into separate rooms;

6. All heating and air conditioning equipment and components (including ductwork), all electrical, ventilation, plumbing, and other service facilities shall be designed and/or located three feet above the base flood elevation or one foot above the future-conditions flood elevation, whichever is higher, so as to prevent water from entering or accumulating within the components during conditions of flooding;
7. Manufactured homes shall be anchored to prevent flotation, collapse, and 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;
8. All proposed development shall include adequate drainage and stormwater management facilities per the requirements of City of Baldwin to reduce exposure to flood hazards;
9. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
10. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters;
11. On-site waste disposal systems shall be located and constructed to avoid impairment to, or contamination from, such systems during flooding;
12. Other public utilities such as gas and electric systems shall be located and constructed to avoid impairment to them, or public safety hazard from them, during flooding;
13. Any alteration, repair, reconstruction or improvement to a structure which is not compliant with the provisions of this section shall be undertaken only if the nonconformity is not furthered, extended or replaced;
14. If the proposed development is located in multiple flood zones, or multiple base flood elevations cross the proposed site, the higher or more restrictive base flood elevation or future condition elevation and development standards shall take precedence;
15. When only a portion of a proposed structure is located within a flood zone or the future conditions floodplain, the entire structure shall meet the requirements of this section; and
16. Subdivision proposals and other proposed new development, including manufactured home parks or subdivisions, shall be reasonably safe from flooding:
    a. All such proposals shall be consistent with the need to minimize flood damage within the floodprone area;
    b. All public utilities and facilities, such as sewer, gas, electrical, and water systems, shall be located and constructed to minimize or eliminate flood damage; and
    c. Adequate drainage shall be provided to reduce exposure to flood hazards.

B. Building Standards for Structures within the Future Conditions Floodplain
    1. Residential Buildings
        a. New construction of principal residential structures shall not be allowed within the limits of the future-conditions floodplain unless all requirements of the subsections below have been met. If all of the requirements of the subsections below have been met, all new construction shall have the lowest floor, including basement, elevated

no lower than three feet above the base flood elevation or one foot above the future-conditions flood elevation, whichever is higher. Should solid foundation perimeter walls be used to elevate the structure, openings sufficient to automatically equalize the hydrostatic flood forces on exterior walls shall be provided in accordance with standards of the section below.

b. Substantial improvement of any principal residential structure shall have the lowest floor, including basement, elevated no lower than three feet above the base flood elevation or one foot above the future-conditions flood elevation, whichever is higher. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to automatically equalize the hydrostatic flood forces on exterior walls shall be provided in accordance with standards of the section below.

2. Nonresidential Buildings
   a. New construction of principal nonresidential structures shall not be allowed within the limits of the future-conditions floodplain unless all requirements of the subsections below have been met. If all requirements of the subsections below have been met, all new construction shall have the lowest floor, including basement, elevated no lower than one foot above the base flood elevation or at least as high as the future-conditions flood elevation, whichever is higher. Should solid foundation perimeter walls be used to elevate the structure, openings sufficient to automatically equalize the hydrostatic flood forces on exterior walls shall be provided in accordance with standards of the section below. New construction that has met all of the requirements of the subsections below may be flood proofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be watertight to one foot above the base flood elevation, or at least as high as the future-conditions flood elevation, whichever is higher, 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 licensed 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 City of Baldwin using the FEMA flood proofing certificate along with the design and operation/maintenance plan.
   b. Substantial improvement of any principal nonresidential structure located in A1-30, AE, or AH zones may be authorized by the City of Baldwin to be elevated or flood proofed. Substantial improvements shall have the lowest floor, including basement, elevated no lower than one foot above the base flood elevation or at least as high as the future-conditions flood elevation, whichever is higher. Should solid foundation perimeter walls be used to elevate the structure, openings sufficient to automatically equalize the hydrostatic flood forces on exterior walls shall be provided in accordance with standards of the section below. Substantial improvements may be flood proofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be watertight to one foot above the base flood elevation, or at least as high as the future-conditions flood elevation, whichever is higher, 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 licensed 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 City of Baldwin using the FEMA floodproofing certificate along with the design and operation/maintenance plan.

3. Accessory Structures and Facilities
   Accessory structures and facilities (i.e., barns, sheds, gazebos, detached garages, recreational facilities and other similar non-habitable structures and facilities) which meet the requirements of the subsections below and are permitted to be located within the limits of the future-conditions floodplain shall be constructed of flood-resistant materials and designed to provide adequate flood openings in accordance with the section below and be anchored to prevent flotation, collapse and lateral movement of the structure.
4. Standards for Recreational Vehicles
   All recreational vehicles placed on sites must either:
   a. Be on the site for fewer than 180 consecutive days and 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. Meet all the requirements for Residential buildings—substantial improvements section, including the anchoring and elevation requirements.
5. Standards for Manufactured Homes
   a. New manufactured homes shall not be allowed to be placed within the limits of the future-conditions floodplain unless all requirements of the subsections below have been met. If all of the requirements of the subsections below have been met, all new construction and substantial improvement shall have the lowest floor, including basement, elevated no lower than three feet above the base flood elevation or one foot above the future-conditions flood elevation, whichever is higher. Should solid foundation perimeter walls be used to elevate the structure, openings sufficient to automatically equalize the hydrostatic flood forces on exterior walls shall be provided in accordance with standards of the section below.
   b. Manufactured homes placed and/or substantially improved in an existing manufactured home park or subdivision shall be elevated so that either:
      i. The lowest floor of the manufactured home is elevated no lower than three feet above the level of the base flood elevation, or one foot above the future-conditions flood elevation, whichever is higher; or
      ii. 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.
   c. All manufactured homes must be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement in accordance with standards of the section below.

C. Building Standards for Structures Authorized Adjacent to the Future Conditions Floodplain
   1. Residential Buildings
      For new construction and substantial improvement of any principal residential building or manufactured home, the elevation of the lowest floor, including basement and access

to the building, shall be at least three feet above the base flood elevation or one foot above the future-conditions flood elevation, whichever is higher. Should solid foundation perimeter walls be used to elevate the structure, openings sufficient to automatically equalize the hydrostatic flood forces on exterior walls shall be provided in accordance with standards of the section below.

2. Nonresidential Buildings
   For new construction and substantial improvement of any principal nonresidential building, the elevation of the lowest floor, including basement and access to the building, shall be at least one foot above the level of the base flood elevation or at least as high as the future-conditions flood elevation, whichever is higher. Should solid foundation perimeter walls be used to elevate the structure, openings sufficient to automatically equalize the hydrostatic flood forces on exterior walls shall be provided in accordance with standards of the section below. Nonresidential buildings may be flood proofed in lieu of elevation.

D. Building Standards for Residential Single Lot Developments on Streams without Established Base Flood Elevations and Floodway (A Zones)
   For a residential single-lot development not part of a subdivision that has areas of special flood hazard, where streams exist but no base flood data have been provided (A-zones), the City of Baldwin shall review and reasonably utilize any available scientific or historic flood elevation data, base flood elevation and floodway data, or future-conditions flood elevation data available from a federal, state, local or other source, in order to administer the provisions and standards of this section.
   If data are not available from any of these sources, the following provisions shall apply:
   1. No encroachments, including structures or fill material, shall be located within an area equal to twice the width of the stream or 50 feet from the top of the bank of the stream, whichever is greater.
   2. In special flood hazard areas without base flood or future-conditions flood elevation data, new construction and substantial improvements shall have the lowest floor of the lowest enclosed area (including basement) elevated no less than three feet above the highest adjacent grade at the building site. Flood openings sufficient to facilitate automatic equalization of hydrostatic flood forces shall be provided for flood prone enclosures in accordance with the section below.

E. Building Standards for Areas of Shallow Flooding (AO Zones)
   Areas of special flood hazard may include designated "AO" shallow flooding areas. These areas have base flood depths of one to three feet above ground, with no clearly defined channel. In these areas, the following provisions apply:
   1. All new construction and substantial improvements of residential and nonresidential structures shall have the lowest floor, including basement, elevated to no lower than one foot above the flood depth number in feet specified on the flood insurance rate map (FIRM), above the highest adjacent grade. If no flood depth number is specified, the lowest floor, including basement, shall be elevated at least three feet above the highest adjacent grade. Flood openings sufficient to facilitate the automatic equalization of hydrostatic flood forces shall be provided in accordance with standards of the section below;
   2. New construction and substantial improvement of a nonresidential structure 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 the specified FIRM flood level plus one foot above the highest passage of water, and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A licensed professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice and shall provide such certification to the City of Baldwin using the FEMA floodproofing certificate along with the design and operation/maintenance plan; and

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

F. Standards for Subdivisions of Land
   1. All subdivision proposals shall identify the areas of special flood hazard and areas of future-conditions flood hazard therein and provide base flood elevation data and future-conditions flood elevation data.
   2. All residential lots in a subdivision proposal shall have sufficient buildable area outside of the future-conditions floodplain such that encroachments into the future-conditions floodplain for residential structures will not be required.
   3. All subdivision plans will provide the elevations of proposed structures in accordance with the section above.

7.6 Variance and Appeals Procedures

The following variance and appeals procedures shall apply to an applicant who has been denied a permit for a development activity, or to an owner or developer who has not applied for a permit because it is clear that the proposed development activity would be inconsistent with the provisions of this section:

7.6.1 Variance Procedures

A. Requests for variances from the requirements of this section shall be submitted to the City of Baldwin. All such requests shall be heard and decided in accordance with procedures to be published in writing by the City of Baldwin. At a minimum, such procedures shall include notice to all affected parties and the opportunity to be heard.
B. Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure, and the variance issued shall be the minimum necessary to preserve the historic character and design of the structure.
C. Variances may be issued for development necessary for the conduct of a functionally dependent use, provided the criteria of this section are met, no reasonable alternative exists, and the development is protected by methods that minimize flood damage during the base flood and create no additional threats to public safety.
D. Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
E. In reviewing such requests, the City of Baldwin and the Baldwin City Council shall consider all technical evaluations, relevant factors, and all standards specified in this and other sections of this section.
F. Conditions for variances:
   1. A variance shall be issued only when there is:
      a. A finding of good and sufficient cause;

b. A determination that failure to grant the variance would result in exceptional hardship; and
c. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, or the creation of a nuisance.

2. The provisions of this section are minimum standards for flood loss reduction; therefore, any deviation from the standards must be weighed carefully. Variances shall only be issued upon determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
3. Any person to whom a variance is granted shall be given written notice specifying the difference between the base flood elevation and the elevation of the proposed lowest floor and stating that the cost of flood insurance resulting from the lowest floor elevation being placed below the base flood elevation will be commensurate with the increased risk to life and property, and that such costs may be as high as $25.00 for each $100.00 of insurance coverage provided.
4. The City of Baldwin shall maintain the records of all variance actions, both granted and denied, and report them to the Georgia Department of Natural Resources and the Federal Emergency Management Agency upon request.

G. Any person requesting a variance shall, from the time of the request until the time the request is acted upon, submit such information and documentation as the City of Baldwin and the Baldwin City Council shall deem necessary to the consideration of the request.
H. Upon consideration of the factors listed above and the purposes of this section, the City of Baldwin and the Baldwin City Council may attach such conditions to the granting of variances as they deem necessary or appropriate, consistent with the purposes of this section.
I. Variances shall not be issued "after the fact."

7.6.2 Appeals Procedure

Any person adversely affected by any decision of the City of Baldwin may appeal said decision to the Baldwin City Council within 30 days from the City of Baldwin's decision along with the costs of appeal in accordance with the section in this code. An appeal shall not be considered as filed until the required fee is paid. Said appeal shall be heard by the Baldwin City Council in accordance with the procedures set forth in the City of Baldwin, Georgia Minimum Development Standards Ordinance, with the exception that:

A. For any appeal to the Baldwin City Council pursuant to the provisions of this section, all references shall refer to the City of Baldwin, Georgia Minimum Development Standards Ordinance; and
B. All appeals shall be heard by the Baldwin City Council after notice to affected parties at the next scheduled public meeting that is 15 days or more from the filing of the appeal. The city council shall have 30 days from the date of its hearing within which to make its decision to affirm or reverse the decision of the City of Baldwin. If the Baldwin City Council fails to make a decision within the specified period, it shall be deemed to have affirmed the decision of the City of Baldwin.

7.7 Violations, Enforcement and Penalties

Any action or inaction which violates the provisions of this section or the requirements of an approved stormwater management plan or permit may be subject to the enforcement actions outlined in this section. Any such action or inaction which is continuous with respect to time is deemed to be a public nuisance and may be abated by injunctive or other equitable relief. The imposition of any of the penalties described below shall not prevent such equitable relief.

A. Notice of Violation

If City of Baldwin determines that an applicant or other responsible person has failed to comply with the terms and conditions of a permit, an approved stormwater management plan or the provisions of this section, a notice of violation shall be written to such applicant or other responsible person. In the event that a person is engaged in activity covered by this section without having first secured a permit, the notice of violation shall be served on the owner or the responsible person in charge of the activity being conducted on the site. The notice of violation shall contain:

1. The name and address of the owner or the applicant or the responsible person;
2. The address or other description of the site upon which the violation is occurring;
3. A statement specifying the nature of the violation;
4. A description of the remedial measures necessary to bring the action or inaction into compliance with the permit, the stormwater management plan or this section and the date for the completion of such remedial action;
5. A statement of the penalty or penalties that may be assessed against the person to whom the notice of violation is directed; and
6. A statement that the determination of violation may be appealed to the City of Baldwin Municipal Court by filing a written notice of appeal within 30 days after the notice of violation.

B. Penalties

In the event the remedial measures described in the notice of violation have not been completed by the date set forth for such completion in the notice of violation, any one or more of the following actions or penalties may be taken or assessed against the person to whom the notice of violation was directed. Before taking any of the following actions or imposing any of the following penalties, City of Baldwin shall first notify the applicant or other responsible person in writing of its intended action, and shall provide a reasonable opportunity, of not less than ten days (except that in the event the violation constitutes an immediate danger to public health or public safety, 24 hours' notice shall be sufficient) to cure such violation. In the event the applicant or other responsible person fails to cure such violation after such notice and cure period, City of Baldwin may take any one or more of the following actions or impose any one or more of the following penalties:

1. Stop Work Order

   City of Baldwin may issue a stop work order, which shall be served on the applicant or other responsible person. The stop work order shall remain in effect until the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violation or violations described therein, provided the stop work order may be withdrawn or modified to enable the applicant or other responsible person to take the necessary remedial measures to cure such violation or violations.
2. Withhold Certificate of Occupancy

City of Baldwin may refuse to issue a certificate of occupancy for the building or other improvements constructed or being constructed on the site until the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violations described therein.

3. Suspension, Revocation or Modification of Permit
   City of Baldwin may suspend, revoke or modify the permit authorizing the development project. A suspended, revoked or modified permit may be reinstated after the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violations described therein, provided such permit may be reinstated (upon such conditions as City of Baldwin may deem necessary) to enable the applicant or other responsible person to take the necessary remedial measures to cure such violations.
4. Civil Penalties
   In the event the applicant or other responsible person fails to take the remedial measures set forth in the notice of violation or otherwise fails to cure the violations described therein within ten days, or such greater period as City of Baldwin shall deem appropriate (except that in the event the violation constitutes an immediate danger to public health or public safety, 24 hours' notice shall be sufficient) after City of Baldwin has taken one or more of the actions described above, City of Baldwin may impose a penalty not to exceed $1,000.00 (depending on the severity of the violation) for each day the violation remains unresolved after receipt of the notice of violation.
5. Criminal Penalties
   For intentional and flagrant violations of this section, City of Baldwin may issue a citation to the applicant or other responsible person. Any person, firm, corporation, association or partnership violating any provision of this section as the same exists or as it may hereinafter be amended, or shall fail to do anything required by this section as the same exists or as it may hereafter be amended, shall be guilty of a misdemeanor, amenable to the process of the Municipal Court of City of Baldwin, and, upon conviction, shall be punished as provided in the City of Baldwin, Georgia Minimum Development Standards Ordinance for each violation in the discretion of the court. Each act of violation and each day upon which any violation shall occur shall constitute a separate offense.

8.0 Site Development

8.1 Purpose

The purpose of this section is:

A. To encourage the development of a site so as to help conserve and protect the natural, economic, and scenic resources of the city;
B. To assure the provision of required parking, utilities, and other facilities and services to the development;
C. To assure the adequate provision of safe and convenient access and circulation, both vehicular and pedestrian, and to help ensure that all sites will be accessible to firefighting equipment and other emergency and service vehicles;
D. To ensure adequate drainage by providing for the proper layout of buildings and parking areas, thereby reducing maintenance problems;
E. To help prevent the spread of urban blight and slums;
F. To promote a safe and healthy environment;
G. To assure adequate identification of property on the public records;
H. To encourage the development of the site in accordance with the land use plan.

8.2 Conditions on Development

Regulation of the development of land and the attachment of reasonable conditions to land development is delegated by the state to this city. The developer has the duty of compliance with these regulations and any reasonable conditions determined by the City of Baldwin for design, dedication, improvement, planning, etc., so as to conform to the physical and economical development of the city and to the safety and general welfare of the future lot owners of the site and of the community at large.

8.3 Interpretation

In their interpretation and application, the provisions of this section shall be held to be the minimum requirements for the promotion of the public health, safety, and general welfare.

8.4 Conflicting Provisions

Where any provision of this section imposes a restriction different from those imposed by any other provision of this ordinance or any other ordinance, rule or regulation, or other provision of law, whichever provisions are more restrictive or impose higher standards shall control.

8.5 Easements and Other Private Restrictions

This section is not intended to supplant any easement or any other private restriction; provided that, when the provisions of this section is more restrictive or imposes higher standards than such easement or other private restriction, the provisions of this section shall govern.

8.6 Developments Relying on Provision of Access or Services by Another Jurisdiction

The city council may disapprove all or any part of a development where proper access and the provision of services affecting the health, safety, and welfare of the subdivision are jeopardized by reliance upon the performance of another jurisdiction.

8.7 Definitions and Abbreviations

Square feet is abbreviated as SF in the table below.

Gross floor area is the total area of all floors, measured between the exterior walls of a building.

Restaurant, Custom Service is an establishment where food and drink are prepared to individual order, ordered and served at the table, and consumed primarily within the principal building or in established outdoor dining areas.

Restaurant, Family is a Custom Service Restaurant primarily oriented to sit-down service, occasionally with take-out service but no drive-in or drive-through facilities, and having an average turnover rate generally of less than 1 hour. Family restaurants are usually moderately priced and frequently belong to chains such as Denny's, Pizza Hut and Shoney's.

Restaurant, Quality is a Custom Service Restaurant primarily oriented to fine dining and often associated with a particular cuisine. Quality restaurants are characterized by table settings of better silverware, china, glassware and cloth tablecloths, and have average turnover rates generally of 1 hour or more.

Gross leasable area (GLA) is the total area of all floors intended for occupancy and the exclusive use of tenants, specifically excluding public or common areas such as utility rooms, stairwells, enclosed malls and interior hallways.

8.8 Traffic Analysis

New developments that will generate a significant amount of traffic may be required to perform a traffic analysis. The City will review each proposed development on a case-by-case basis to determine if a traffic study is required. If the City deems the size of the project warrants a traffic study, then the developer shall have a qualified design professional perform a traffic study. Three (3) copies of the traffic analysis, if required, shall accompany the application for the proposed development.

Traffic studies shall describe the extent, nature, and location of traffic impacts for all property for which the application is being sought and further all contiguous property owned by the applicant. The study area shall include the entire site being developed, future phases of multi-phase development, and the surrounding roadways, which are likely to be significantly impacted. At a minimum, the surrounding roadways to be included are:

A. The expected routes of access to the site as far as the nearest major arterials serving the site from each direction nearest the site;
B. The routes and site access to major intersections expected to carry fifteen (15) percent of the project's traffic; and
C. Other roadways expected to carry 1,000 additional daily vehicles as a result of the development.

It is recommended that a preliminary traffic assignment be performed to establish the scope of study before beginning the inventory of existing conditions.

A traffic study shall include the following elements;

A. Conceptual plan or site plan of the proposed development;
B. Inventory of existing conditions including adjacent land users, existing peak hour volumes and turning movement data with six (6) months of applications data, levels of service for peak hour period, and existing problems of deficiencies in curvature, sight distance, drainage, etc.;
C. Trip generation;
D. Trip distribution;
E. Trip assignment;
F. Planned transportation improvements;
G. Identification of traffic impacts, problems, and deficiencies; and
H. Recommended transportation improvements and other impact mitigation measures, including but not limited to, entrance requirements, number of entrances, traffic circulation with the project, etc.

8.8.1 Trip Generation

The traffic study shall include trip generation data for each phase of the overall project.

Trip generation data shall include the total number of vehicles computed to be entering and exiting the site on an average weekday and during A.M. and P.M. peak hours. Trip generation rates will usually be based on the peak hour of adjacent roadways described in the latest edition of Trip Generation (ITE). If the planned development includes more than 250,000 square feet of retail space, include similar trip generation data for Saturdays. If the existing site is zoned for a use other than single-family residential, include trip generation data for the site developed as zoned.

Trip generation rates shall be taken from the latest edition of the ITE Trip Generation publication unless suitable documented local data are provided from the least three similar developments collected within the past five (5) years. Suitable documentation includes the type, location, and size of each development; the dates and hours of data collection; the availability of public transportation; and the vacancy rate for the development. Copies of actual trip data may be required.

Vehicle trips shall be computed by multiplying appropriate trip generation rates by the appropriate units for which the rates were intended. There are exceptions of this procedure:
A. When mixed-use developments are designed to encourage a significant number of internal trips, the total vehicle trips may be reduced by the estimated number of internal person trips, divided by the average auto-occupancy rate. The study must provide adequate published documentation or evidence of its assumptions concerning internal trips.
B. When retail developments are located along an arterial where a significant number of passerby traffic is reasonable, an appropriate adjustment may be made if adequate published documentation or evidence is provided in the study.

8.8.2 Trip Distribution

The trip distribution process will estimate the directional distribution of travel to and from the site for the approximate year of occupancy. Note that trip distribution for residential development (home-based work trip productions) and office development (home-based work trip attractions) are different. Retail distribution process may be accomplished by one of three means:

A. Use appropriate trip distribution rates from trip tables prepared by State or Regional planning agencies; or
B. Prepare a custom trip distribution based on the "area of influence" method described in the American Planning Association publication Traffic Impact Analysis by Greenberg and Hecimovich (PAS Advisory Service Report No. 387,1984); or
C. Prepare another acceptable distribution and assignment using data approved in advance by the City of Baldwin or its representative in the preliminary conference.

8.8.3 Vehicle Trip Assignment

The traffic analysis study shall prepare vehicle trip assignments for peak hour period of times which represent the worst case in terms of the sum of existing traffic and the traffic generated by the overall proposed development. Normally this would be the P.M. peak hour. If the trip generation for the A.M. peak hour exceeds 75 percent of the traffic generated by the P.M. peak hour, then both A.M. and P.M. peak hour trip assignments shall be prepared. Two trip assignments shall be prepared for each peak hour period stipulated above:

A. Generated vehicle trips added to existing traffic assigned on the existing roadway system; and
B. Generated vehicle trips added to existing traffic and to traffic from other planned developments near the site, assigned on the system of existing roadways including recommended improvements; include other nearby large developments which have been rezoned or issued a development permit during the past 24 months. When information about nearby developments is not available, growth factors may be used to inflate existing traffic from other developments. Growth factors shall be computed from the forecast population and employment of the Census tract which include the site.

These trip assignments shall be prepared and illustrated for the internal roadways and driveways within the overall development, along with the surrounding roadways, intersections, and interchanges in the study area. Trip assignments will describe the peak hour directional vehicle volumes and turning movements at intersections.

8.9 Off-Street Parking

A. Area for off-street vehicle parking shall be provided on every lot in which any of the following uses in Table 8.1 apply. Each parking space shall have vehicular access to a street or alley with a driveway provided in accordance with City of Baldwin's driveway construction standards. The parking spaces shall be equal in number to at least the minimum requirements for the specific use set forth below. For each fraction occurring in the total spaces required for a particular use shall constitute one additional space. Parking spaces shall not be reduced below the minimum required number for the use or facility to which they are assigned.

B. If the specific use of a parcel is not specifically mentioned in this chapter, the use of the parcel that is most similar to the listed uses shall apply. The City of Baldwin shall make the determination, subject to an appeal to the city council.
C. On-street parking in R-1, R-2, R-3, MHD, PDD, NC and HB zoning is prohibited.
D. All off-street parking areas that require vehicles to back out directly onto a public road, street or highway are prohibited except for single-family residential units and duplexes.
E. All off-street parking facilities shall be constructed of dust-free materials that will have a surface resistant to erosion, drain to prevent damage to abutting properties or public streets and periodically maintained by the owner, and such facilities shall be arranged for convenient access and safety to pedestrians and vehicles.
F. No parking area shall be used for the sale, repair, dismantling or servicing of any vehicles, equipment, materials or supplies.
G. Each automobile parking space for other than residential purposes shall be clearly marked and shall have provided entrances, exits and driveways adequate to connect each parking space with a public right-of-way.
H. Minimum dimensions for off-street parking spaces, aisles, and driveways shall be as provided in the details.

TABLE 8.1
Minimum Parking Spaces by Use

One Two-Family Dwelling	2 spaces per dwelling
Apartment and Multi-family dwelling	1.5 spaces per unit
Manufactured Homes	2 spaces per dwelling
Motel	1 space for each unit, plus 1 space for each 2 employees
Hotel	1 space for each guest room, suite, or unit plus 1 space for each 2 employees
Office, Professional Building or Similar Use	1 space for each 300 SF of gross floor area
Personal Service Establishment	1 space for each 200 SF of gross floor area
Hospitals or Care Home	1 space for each 4 beds, plus 1 space for each 4 employees (nurses, attendants, etc.), plus 1 space for each staff or visiting doctor
Indoor and Outdoor Recreational Areas (Commercial)	1 space for each 150 SF of gross floor area, for a minimum of 10 spaces, or 1 space per each 4 seats for facilities available for patron use, whichever is greater
Auditorium, stadium assembly hall, gymnasium, theater, community recreation center, church	1 space per each 3 fixed seats in largest assembly room or area, or 1 space for each 40 SF of floor area available for accommodation of movable seats in largest assembly room, or

	combination of fixed and movable seats, or 1 space per each 150 SF of gross floor area, whichever is greatest
Club or Lodge	1 space per each 100 SF of gross floor area
Restaurant or Place Dispensing Food, Drink or Refreshments	1 space for each 100 SF of gross floor area
Retail Stores	1 space per each 200 SF of gross floor area
Automobile Fueling Stations	1 space (in addition to service area) for each pump and grease rack and 1 space for each 2 employees during period of greatest employment, but not less than 4 spaces
Automobile Sales and Service, Service Stations and Car Wash Facilities	1 space for each 200 SF of gross floor area of the building
Swimming Pool	1 space for each 200 SF of water surface area plus requirements for additional uses in association with the establishment, such as a restaurant, etc.
Shopping Center	1 space for every 200 SF of gross floor area
Wholesaling and Warehousing	1 space for each 2,000 SF of gross floor area
Industrial or Manufacturing Establishment or Warehouse	2 spaces for each 3 employees on shift of greatest employment, plus 1 space for each vehicle used directly in the conduct of the business
Bowling Alley	4 spaces per each bowling lane plus requirements for any other use associated with the establishment such as a restaurant, etc.
Dance School	1 spaces for 150 SF of gross floor area plus safe and convenient loading and unloading of students
Fraternity or Sorority	1 space for each 2 bedrooms
Golf Course	2 spaces for each hole and 1 space for each 2 employees plus requirements for any other use associated with the golf course
Kindergarten and Nursery School	1 space for each employee
High Schools, Trade Schools, Colleges, and Universities	1 space for each 2 teachers, employees, and administrative personnel, plus safe and convenient loading and unloading of students, plus 5 spaces for each classroom
School	1 space for each teacher, 1 space for each 2 employees and administrative personnel, and 1 space for each classroom. For junior high and

	high schools, an additional 1 space for each 10 pupils
Combined Uses	Total of spaces required for each separate use established by this schedule
Other Uses	If a use is not specified herein, the City Council may establish a minimum parking requirement for the use

8.10 Handicap Accessible Parking Spaces

A. Handicapped spaces are to be provided as required by State of Georgia accessibility requirements and the federal Americans with Disabilities Act for all multi-family and nonresidential uses.
B. Handicap accessible parking areas shall be counted as part of the total number of parking spaces required in this chapter.
C. Handicap accessible parking spaces shall have an adjacent aisle 5 feet wide, and one in every 8 handicapped spaces shall be adjacent to an aisle 8 feet wide and the space shall be signed "van accessible." Handicapped parking space aisles shall be clearly designated by striping applied to the parking lot surface.
D. Handicap accessible parking spaces shall be located on a surface with a slope not exceeding 1 vertical foot in 50 horizontal feet (1:50).
E. Handicap accessible spaces shall be provided in each parking lot. For every 25 parking spaces, a minimum of one of the spaces shall be designated as a handicap parking space.
F. All handicapped parking shall comply with the requirements of the federal Americans with Disabilities Act and the Georgia Accessibility Code.

8.11 Dedication of Parking Use

A. Parking spaces provided to meet the minimum requirements of this chapter, along with the aisles and driveways necessary to provide access to those spaces, shall not be used for any other purpose than the temporary parking of vehicles. Parking areas shall not be used for the sale, repair, dismantling or servicing of any vehicles, or for the sale, display or storage of equipment, goods, materials or supplies.
B. Parking spaces provided to meet the minimum requirements of this chapter shall not be used to meet the minimum parking requirements of any other use, except as provided for shared parking as defined below.
C. Parking spaces provided to meet the minimum requirements of this chapter shall not be reduced in number nor otherwise lose their functional ability to serve the land use for which they were required.

8.12 Joint Parking Facilities

A. Two or more neighboring uses, of the same or different types may provide joint facilities, provided that the number of off-street parking spaces are not less than the sum of the individual requirements.
B. Parking spaces that are proposed to be shared among two or more uses must be clearly available to each use and not appear in any way to be serving a particular use,

either through signage dedicating the spaces or through design techniques that would tend to orient use of the spaces to a particular business or building.

C. Shared parking arrangements shall be in writing in an instrument acceptable to the City of Baldwin, approved by the owners of each of the affected properties or uses, and notarized. The instrument must be approved by the City of Baldwin and shall be recorded with the Clerk of the Superior Court of the applicable county, and a copy of the recorded document must be supplied to the Public Works Director. The document must be written to survive future changes in ownership in perpetuity, unless the agreement is dissolved with approval by the Baldwin City Council.

8.13 Off-Site Parking

If required parking spaces are not located on the parcel as the particular use, building, or establishment they are intended to serve, the following shall apply:

A. The parking spaces must be located on a property that has the same zoning classification as the property that the spaces serve.

B. No required parking spaces may be located across any state or US highway from the use they are intended to serve.

C. An easement (or other recordable instrument satisfactory to the City of Baldwin) dedicating the off-site parking to the property that the spaces serve shall be recorded with the Clerk of the Superior Court and a copy provided to the Public Works Director. The document must be written to survive future changes in ownership in perpetuity, unless the agreement is dissolved with approval by the City of Baldwin Council.

D. Off-site parking spaces shall be located in proximity to the use that the spaces serve, in accordance with the location requirements as follows:

1. Single family or two family residence required parking spaces shall be located on the same lot occupied by the residence.
2. Townhouses required parking spaces shall be within 100 feet of an entrance to the dwelling unit that it serves as measured along the most direct pedestrian route.
3. Other multi-family developments such as apartments, nursing homes, and assisted living facilities required parking spaces shall be within 200 feet of an entrance to the building that it serves as measured along the most direct pedestrian route.
4. Church, hotel, motel, hospital, retail sales establishment other than a shopping center, office building required parking spaces shall be within 300 feet of an entrance to the building or use that it serves as measured along the most direct pedestrian route.
5. Shopping center or industrial use required parking spaces shall be within 400 feet of an entrance to the building or use that it serves as measured along the most direct pedestrian route.
6. Required parking spaces for any other use not specified above shall be within 400 feet of an entrance to the building or use that it serves as measured along the most direct pedestrian route.

8.14 Parking Lot Design Requirements

This section applies to all off-street parking spaces and parking areas.

A. **Orientation to street.** All off-street parking areas shall be designed so that no vehicle is equired to back into a public street to obtain access except for parcels with one-family or two-family dwellings.

B. **Off-street Parking Spaces**
   1. No parking spaces shall be accessible directly from an access driveway within the first 30 feet of the driveway measured from the street right-of-way.
   2. Parking spaces shall meet the following requirements. Width of stall shall be a minimum of nine and one-half feet (9½'). Length of stall shall be a minimum of nineteen feet (19').
   3. Oversize vehicle spaces shall be included in the parking area where 10% of required spaces shall be ten feet (10') wide by twenty-two feet (22') in length and marked "oversized vehicles".

C. **Access and Circulation**
   1. Adequate interior driveways to connect each parking space with a public right-of-way shall be provided. Interior driveways shall be at least twenty-four feet (24') wide where used with ninety degree (90°) angle parking (see Figure 8-1), at least eighteen feet (18') wide where used with sixty degree (60°) angle parking (see Figure 8-2), at least sixteen feet (16') wide where used with forty-five degree (45°) angle parking (see Figure 8-3), and at least fourteen feet (14') wide where used with parallel parking, or where there is no parking interior driveways shall be at least twelve feet (12') wide for one-way traffic movement and at least twenty-four feet (24') wide for two-way traffic movement.
   2. Access aisles shall not encroach into this minimum rectangular area. Every parking space shall be clearly delineated by striping applied to the parking lot surface.
   3. One-way traffic aisles must be marked with directional arrows on the pavement at each intersection with another aisle.
   4. Ingress and egress to parking areas shall be by means of paved driveways from the adjoining street.
      a. The minimum width of driveways for ingress and egress shall be the same as those specified above for aisles. Driveway width, for this chapter, shall include only the pavement and not curbs and gutters.
      b. The slope of ingress and egress driveways at their connection to the adjoining street shall not exceed that allowed by city specifications for landings at residential street intersections.
   5. No more than two combined entrances and exits shall be allowed any tract of land, the frontage of which is less than two hundred feet (200') on any one street. Additional entrances or exits for parcels of property having a frontage in excess of two hundred feet (200') may be permitted upon approval by the City of Baldwin. The City of Baldwin shall determine whether the points of access may be unrestricted or shall be designed for right-in, right-out traffic flow only.
   6. At a street intersection, no curb cut shall be located within twenty-five feet (25') of a street intersection of two curb lines or such lines extended, or within fifteen feet (15') of the intersection of two property lines or such lines extended, whichever is least restrictive.

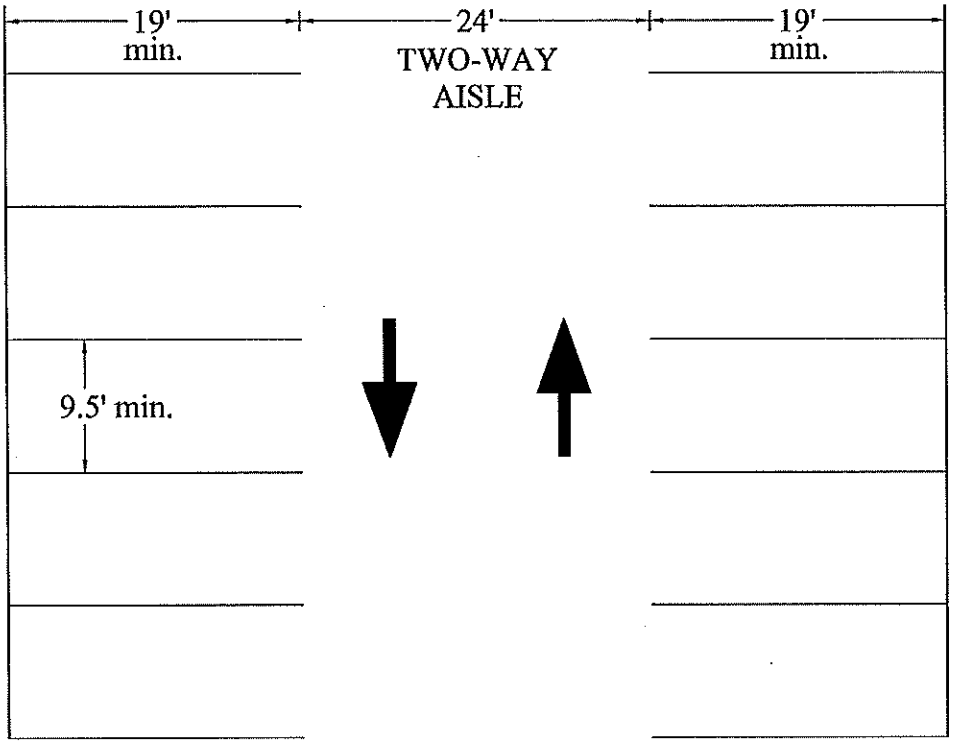
7. A permit to access a state route must be obtained from the Georgia Department of Transportation and submitted to the City of Baldwin prior to the issuance of a land disturbance permit issued by the City of Baldwin for the site.

D. **Inter-parcel Access**

1. An internal access easement is required from all property owners where inter-parcel access shall be achieved by means of shared driveway easements between properties. The purpose of the easement is to facilitate movement of customers from business to business without generating additional turning movements on the public streets that protects the interest of the public health, safety and welfare.
2. The access easement provision shall permit automobile access from the adjoining property to driveways and parking areas intended for customer or tenant use, however, parking spaces may be restricted to use by the owner's customers and tenants only.
3. Inter-parcel vehicle access shall be required between automobile parking areas on all contiguous parcels within the nonresidential zoning districts and between all other contiguous nonresidential uses when the parking areas are or will be in reasonable proximity to one another.
4. On all inter-parcel streets that are not government owned or maintained curb cuts may be located no closer than 20 feet from a property line.
5. All access easements shall be a minimum of 28 feet wide and shall be wide enough to permit two-way vehicular traffic to and from the adjoining properties.
6. Inter-parcel access shall not be allowed within 35 feet of the right-of-way of any public street or road.
7. Requirements of this chapter may be waived by the City of Baldwin when it is adequately demonstrated that the required easements will have an adverse impact on use of the subject property that will outweigh the reduced impact on public streets provided by reciprocal easements.

E. **Setback Requirements**

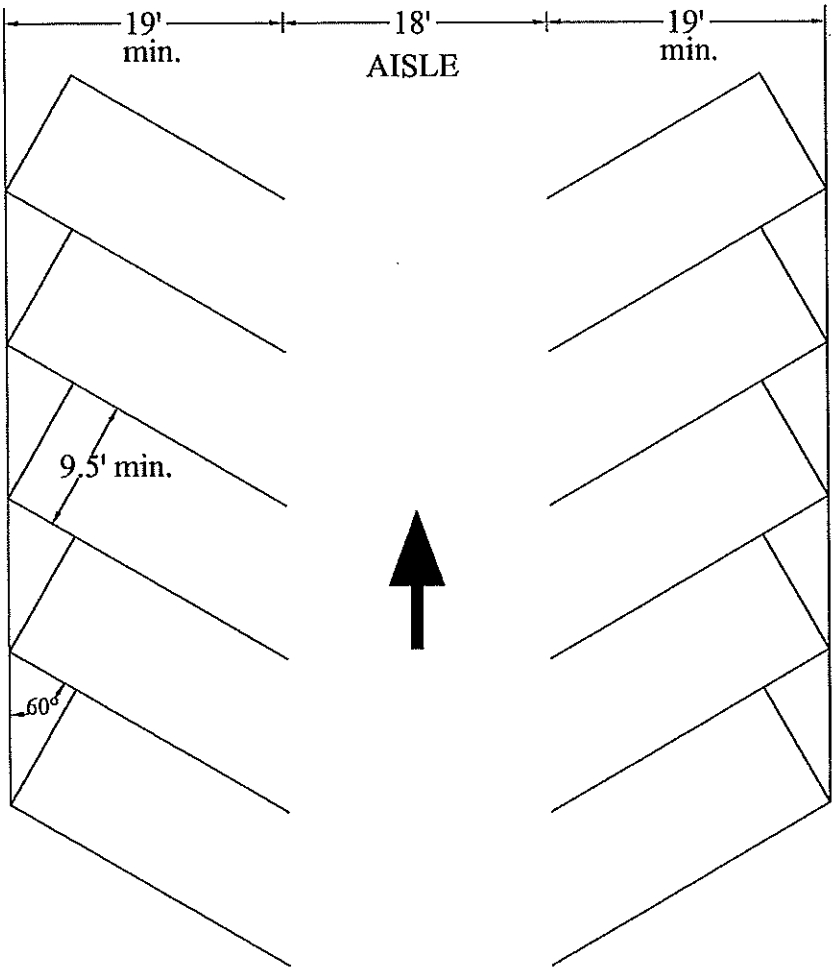
1. There are no setback requirements for unenclosed off-street parking for single-family and two-family dwellings.
2. Off-street parking for all other uses, including multi-family residential, commercial, industrial, and institutional uses, shall have a setback of 10 feet from the front property line. An additional 10-foot setback from any buffer required along a side or rear property line shall also be maintained.
3. The required setback area between the front property line and the parking area shall be used for landscaping and/or screening as required in the Tree Protection chapter of this ordinance.



10% of required spaces shall be 10 ft. wide by
22 ft. in length and marked "oversized vehicles"

PERPENDICULAR
90° PARKING

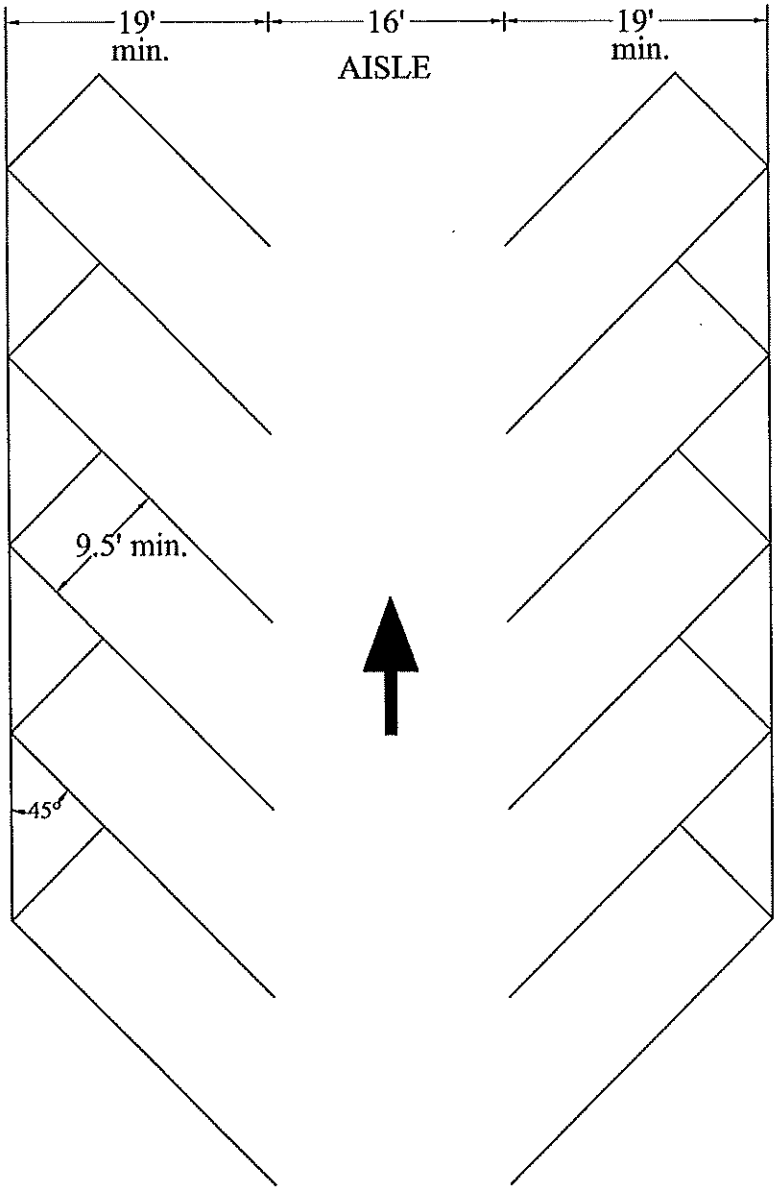
Figure 8-1



10% of required spaces shall be 10 ft. wide by
22 ft. in length and marked "oversized vehicles"

60° PARKING

Figure 8-2



10% of required spaces shall be 10 ft. wide by
22 ft. in length and marked "oversized vehicles"

45° PARKING

Figure 8-3

8.15 Parking Area Construction Requirements

A. All off-street parking areas and access drives for automobiles to serve uses other than single-family and two-family dwellings shall consist of a minimum of a 6-inch graded aggregate base overlaid with 2 inches of 19mm Superpave and a 1½ -inches of 9.5mm or 12.5mm Superpave asphalt surface.

B. In areas of loading docks and for parking of commercial trucks and other commercial equipment, the following surface shall be required:
   1. An 8-inch graded aggregate base overlaid with a minimum of 3 inches of 19mm Superpave and 2 inches of 12.5mm Superpave asphalt surface; or
   2. A 10-inch graded aggregate base, overlaid with a 10-inch course of 3,000 psi concrete.

C. Curb and gutter meeting City of Baldwin specifications for standard vertical curbing shall be installed around the perimeter of every parking lot and loading area and extend along both sides of every access drive between the parking lot or loading area and the street or another parking lot or loading area, as applicable. Curb and gutter may be waived by the City of Baldwin with stormwater drainage plans to capture runoff without the use of curb and gutter for the project if approved.

D. Stormwater management of the site shall be required in accordance with the Stormwater Management chapter of this ordinance.

E. Off-street parking areas shall be maintained with a dust-free surface as noted above.

F. Construction of a new parking lot or loading area or expansion of an existing parking lot or loading area requires construction plans to be submitted to the City of Baldwin for review and approval prior to the issuance of a development permit

G. All required off-street parking areas shall be ready for use, including the above surfacing requirement, before the occupancy of the use (in the case of a new building or addition) or within 45 days after the issuance of an occupational license (in the case of a change of occupancy in an existing building). An extension of time may be granted by the City of Baldwin due to adverse weather conditions.

8.16 Landscaping

A. Any property shall provide at least 20 percent of its gross land area in landscaping. Landscape areas shall be identified on the site plan for the development, subject to approval by the City of Baldwin.

B. All parking lots for 10 or more cars and areas set aside for loading of trucks or vans must provide landscaping as required by the Tree Protection chapter of this ordinance.

8.17 Off-Street Loading and Unloading

A. Off-street loading and unloading spaces shall have access from an alley or, if there is no alley, from a public street.

B. The off-street loading and unloading space shall be so located that it causes a minimum of interference with the free movement of vehicles and pedestrians over a street, sidewalk or alley.

C. Minimum size and number of off-street loading and unloading spaces required are as follows:
   1. For the purpose of this section, an off-street loading and unloading space shall have the minimum dimensions of 12 feet x 40 feet x 14 feet of overhead clearance.
   2. Retail business, office, wholesale, industrial, governmental, and institutional uses, including public assembly places, hospitals and educational institutions, one space for the first 25,000 square feet of total floor area or fractional part thereof is required. For anything in excess of 25,000 square feet, such uses shall provide loading and unloading spaces in accordance with Table 8.2.

TABLE 8.2

Loading and Unloading Spaces for Total Floor Area in Excess of 25,000 SF

Square Feet	No. of Spaces
25,001 - 99,999	2
100,000 - 159,999	3
160,000 - 239,999	4
240,000 - 349,999	5
350,000 or more	5 plus one (1) additional space for each additional 100,000 square feet or fraction thereof

8.18 Screening of Storage and Mechanical Equipment

A. Waste receptacles, including dumpsters, garbage cans, or grease containers shall be located in the rear or side yard and placed at least 20 feet from any street, public sidewalk, or property line that abuts residential zoning or residential use. Such waste receptacles shall be screened from view from all property lines and public areas of the site by a minimum six feet high wall constructed of masonry or solid wood with an opaque gate.

B. Rooftop mechanical equipment, including HVAC and utility equipment shall be screened from adjacent streets, sidewalks, residential, public and institutional uses. Screening shall consist of parapet walls or an opaque enclosure around the equipment that is constructed of one of the materials used on the primary facade of the principal structure.

C. Ground-mounted or wall-mounted equipment such as HVAC equipment, transformers, and gangs of multiple utility meters shall be screened from adjacent streets, sidewalks, residential, public and institutional uses. Screening shall consist of a solid masonry wall or wooden fence or other opaque enclosure around the equipment that is constructed of one of the permanent and durable materials used on the primary facade of the building. The height of the fence or wall shall be sufficient to effectively screen the equipment from view.

D. Outdoor storage or sales displays shall be prohibited from front yards except when permitted in the underlying zoning district and further authorized by a conditional use permit pursuant to the procedures of the City of Baldwin Zoning Ordinance. Outdoor storage or sales displays shall be screened from view from public streets and

adjacent property by a permanent opaque enclosure consisting of a minimum eight foot high solid fence or wall.

8.19 Outdoor Lighting

A. Streetlights
   1. Streetlights shall be provided on all public streets.
   2. The spacing of street lights shall be staggered, 300 feet on-center, along both sides of the roadway.
   3. All street lighting shall be subject to review and approval of the City of Baldwin.
   4. All outdoor lighting, shall be the full-cutoff type.

B. Parking Lot, Sidewalk, and Building Illumination
   1. Lighting shall be designed to avoid intrusion on adjacent properties and away from adjacent thoroughfares. All lighting shall be full-cutoff luminaire fixtures mounted in such a manner that the cone of light is directed downward.
   2. Only incandescent, florescent, metal halide, low-pressure sodium, color corrected, high-pressure sodium or LED may be used. The same type of lighting must be used for the same or similar types of lighting on any one site.
   3. Parking light fixtures shall be the box head type and shall have a maximum height of 35 feet.

C. Full-cutoff luminaries shall be used for all security lighting.

D. Sign Illumination
   1. Internally illuminated signs, automatic changeable copy signs, and externally mounted neon signs are prohibited.
   2. Signs may be illuminated with external lighting fixtures provided that fixtures are directed downward and away from streets and adjacent property. All lighting shall have recessed luminaries or be full-cutoff luminary fixtures.

8.20 Site Development Approval

Each site development shall be submitted to the Public Works Director for approval. All sites hereafter developed shall be in accordance with the minimum design standards and requirements set forth in the City of Baldwin, Georgia Minimum Development Standards Ordinance. Stormwater management shall meet the requirements in Chapter 4 of this ordinance. The scale of such development plans shall be not less than 60 feet to the inch. Such plans shall contain the following information:

A. Signed and dated Professional Engineer's seal on all plan sheets.
B. Boundary of entire parcel(s). Include adjacent road(s), right-of-way, and adjoining property owners.
C. Name of project, name, address, and phone number of owner/developer, engineer, surveyor, and 24-hour contact and cell phone number on cover sheet.
D. Tax parcel number, address, zoning, land district, land lot, and county of site on cover sheet.
E. Vicinity map with the site boundary delineated and road names.
F. Project description. Proposed use of each lot. Boundary area. Disturbed area and volume.
G. Delineate city limits, county lines, land lot lines.
H. Setback lines. Buffers.

I. Parking space calculations. Handicap accessible spaces. Parking space, aisle dimensions.
J. Provide topography at 2-foot elevations of the entire site. Include source of topography and reference datum.
K. Existing/proposed right-of-way, roads, utility locations and easements.
L. Location of existing and proposed structures, cemeteries, tree line, drives, lakes, ponds, landscaping, natural conservation area, etc.
M. Driveway width, return radius of curb, grade, sight distance.
N. Stormwater management system.
O. Location of existing and proposed conveyance systems and utilities.
P. Mapping of soils from USDA soil survey and location of any site borehole investigations that may have been performed.
Q. Delineate and label centerline of stream, state waters buffer, and City of Baldwin buffer and impervious setback.
R. Delineate 100 year floodplain. FIRM panel number and date.
S. 100-year ponding limit and elevation at all inlets.
T. Diameter and material of all storm drain pipes.
U. Direction of north in relation to the site shown on the plan (indicate magnetic, true, or grid) and graphic scale.
V. Water system.
W. Sanitary sewer system.
X. Notes on the checklist.
Y. Landscape plan.
Z. Construction details

8.20.1 Water System Requirements

The standards listed herein are not intended to cover all aspects of design, but rather to mention the basic guidelines and requirements of the City of Baldwin. In addition to the design criteria presented herein, proposed public water systems shall meet all requirements of the Minimum Standards for Public Water Systems (Minimum Standards) published by Georgia EPD.

8.20.1.1 Preliminary Plan Review

Preliminary plans of proposed water and sanitary sewer systems shall be prepared and submitted for review to the City of Baldwin. Questions relating to availability of water and proposed locations of connections should be resolved at this stage before proceeding with final planning. A submittal for preliminary plan review shall include all land to be developed including land that is to be developed in several phases or units. Water capacity determinations will be made for the total project.

8.20.1.2 Final Plan Review

All final plans for public water facilities shall be submitted to the City and approved by the City Engineer and Public Works Director. The City of Baldwin has received approval from Georgia EPD for delegation of review and approval for limited water system additions.

8.20.1.3 Water Lines Along Public Right-of-Ways

A. Water lines within a Commercial, Industrial or Residential Development shall be located within a ten foot permanent utility easement outside of the public right-or-way for right-of-ways 60 feet wide and less.
B. Water lines installed along existing roadways or along new roadways where right-of-way widths are 80 feet and wider will be allowed within the right-of-way of any roadway unless as determined by the City or GDOT there are compelling design or safety issues which would demand consideration of an alternate location.
C. Water lines installed inside the road right-of-way shall be located in the back five feet of the right-of-way unless existing utilities prohibit this.
D. GDOT should be contacted at the preliminary plan stage to determine the acceptability of locating water lines under the pavement and/or within the right-of-way of State roadways

8.20.1.4 Easements

A. All easements shall allow adequate room to construct the water line and appurtenances. Permanent easements shall be a minimum of 20 feet wide except that when the depth of the water line exceeds ten (10) feet the required easement width shall increase such that the easement width is at least twice the depth from the ground surface to bottom of the pipe. Easements with more than one utility shall be wider as required by the City.
B. It shall be the responsibility of the Developer to obtain any off-site easements required to connect the project to the existing public water system.
C. Easements shall be conveyed to the City of Baldwin for all facilities that are to be dedicated to the City. Final plans cannot be approved until all necessary off-site easements have been submitted, approved and recorded.

8.20.1.5 Fire Flow and Pressure Test

A. A water flow test shall be performed on the existing water line nearest the proposed development or development prior to submitting design drawings for approval to determine the adequacy of the existing water supply line for the project. The test shall consist of a fire hydrant pressure and flow test conducted per the National Fire Protection Association (NFPA) 291, Recommended Practice for Fire Flow Testing and Marking of Hydrants. A 24-hour pressure recording from this same point will also be required. The test results submitted to the City shall consist of:
    1. Static pressure and approximate elevation of the Static gauge.
    2. Residual pressure and recorded flow rate in gallons per minute (GPM) and approximate elevation of the Residual gauge.
    3. Projected flow at the test hydrant in GPM at 20 psi.
    4. 24-hour pressure chart
    5. Site map including fire hydrant locations tested.

8.20.1.6 Fire Flow Requirements

A. An adequate supply of water to meet the instantaneous flow and peak domestic water demand requirements of the proposed project must be available prior to approval of any plans. Water systems shall be designed to provide fire flows in accordance with Insurance Services Office (ISO) requirements, plus the domestic demand required by the City.

Residual pressures of not less than 20 pounds per square inch (psi) shall be maintained throughout the City's water distribution system during a fire flow event.

B. The minimum fire flows in the table below entitled Fire Flow Requirements for Single-Family Detached and Two-Family Dwellings apply to new development. Where the size and the scope of the development exceed these requirements, additional flow shall be provided in accordance with Insurance Services office (ISO) requirements. Fire flow requirements may be met in single-family residential and two-family developments with a single hydrant within 300 or 500 feet hose lay of a structure in accordance with this table. In special circumstances, a written waiver from these requirements may be obtained from the Fire Chief and State Fire Marshall. In areas of multi-use development, other residential (i.e., multi-family, condominium, townhouse), commercial, institutional, and industrial developments shall provide a fire flow in accordance with Insurance Services office (ISO) requirements.

8.20.1.7 Hydraulic Design

A. All main lines of a public water system shall be a minimum of eight inches in diameter for mains along roadways that are not looped or connected at both ends to other portions of the public water system.

B. Water mains along roadways or interior streets that will allow the water lines to loop shall be a minimum of six inches in diameter.

C. Public water systems shall have an average pressure of 35 pounds per square inch at each meter and shall meet the requirements of the Instantaneous Water Demands for Residential Areas table, the requirements herein, and the Standard Details and Specifications for Construction of Water and Sewer Mains for the City of Baldwin. Developments that cannot meet these requirements shall design and fund improvements to the existing system that will enable the proposed development to meet said fire flow and average demand requirements.

D. The system shall be designed by a Professional Engineer licensed in the State of Georgia.

E. In accordance with plumbing code, pressure reducing valves are required on service lines entering a building to reduce high water pressure.

8.20.1.8 Hydraulic Calculations

A. Input
   1. State all source and assumptions made for input- i.e. C factors, demands, elevations, tank(s) elevations, fire flow desired, peak factors, etc.
   2. State how average and peak demands were determined
   3. State flow testing data that the model was calibrated by.
   4. State how model was calibrated.
   5. State how calculations were performed, i.e. which equations or which software.

B. Results
   1. Analysis should show at a minimum the following scenarios: 1) static conditions with pressures at all important nodes, 2) service pressure at all nodes during average flow- 3) service pressures at all nodes during peak flow 4) fire flow availability at each node keeping 20 psi at all nodes.

2. State the minimum pressure in the system during a peak and average demand that is spread appropriately throughout the system junctions. At what location is this minimum pressure?
3. Include an overall map of the developments water system that labels all junctions and pipe numbers indicated in the hydraulic model.
4. State at what location the maximum and minimum total flow available (fire flow) is while maintaining a 20 p.s.i. residual. What is the location of the 20 p.s.i. residual for these flows? What is this maximum and minimum flow in gallons per minute in the development?
5. State the engineering conclusion and recommendations.

8.20.1.9 Fire Hydrants and Valves

Fire hydrants shall be required for all developments with water systems. Fire hydrants shall be located no more than 500 feet apart and at least six feet behind the curb or ditch line. To eliminate future street openings, all underground utilities for fire hydrants, together with the fire hydrants themselves and all other water supply improvements, shall be installed before any base course application of a street shown on the development plat. All fire hydrants shall be set plumb with outlets 18 inches above finished grade or 12 inches above a finished concrete surface. No valves shall be located within the pavement or curb area.

8.20.2 Sanitary Sewer System Requirements

The standards listed herein are not intended to cover all aspects of design, but rather to mention the basic guidelines and requirements of the City of Baldwin. Sanitary Sewer Systems shall be designed in accordance with the Standard Details and Specifications for Construction of Water and Sewer Mains in the City of Baldwin. In addition to the design criteria presented herein, proposed public sanitary sewer systems shall meet all requirements published by Georgia EPD.

8.20.2.1 Connections to Public Sanitary Sewer Systems

Except as provided below, all proposed buildings within the City's corporate limits that requires sanitary sewerage facilities shall be connected to the public sanitary sewer system.

Waiver of the requirement to connect to public sanitary sewers will be considered on a case-by-case basis for non-subdivided, single-lot buildings when the nearest connection point to a public sanitary sewer is more than 200 feet from the property line, when such buildings are to be used for single-family dwelling or some other use where the wastewater loading is no more than that of a single-family dwelling. Requests for waiver must be accompanied by appropriate documentation as may be required by the County Health Department.

8.20.2.2 Design of Sanitary Sewer Systems

All improvements and extensions to the public sewer system shall be designed by a Professional Engineer licensed in the State of Georgia. Developments that only involve gravity sanitary sewers and small connections connecting sewers less than 1,000 linear feet may have plans and specifications prepared and stamped by a Registered Land Surveyor licensed in the State of Georgia.

8.20.2.3 Water and Sanitary Sewer System Design Approval

All water and sewer system construction plans and specifications shall be approved by the City Engineer and the Public Works Director.

8.20.2.4 Preliminary Plan Review

Preliminary plans of proposed water and sanitary sewer systems shall be prepared and submitted for review to the City of Baldwin. Questions relating to availability of sanitary sewers and proposed locations of connections should be resolved at this stage before proceeding with final planning. A submittal for preliminary plan review shall include all land to be developed including land that is to be developed in several phases or units. Water and sanitary sewer capacity determinations will be made for the total project.

8.20.2.5 Final Plan Review

All final plans for public sanitary sewer facilities shall be submitted to the City and approved by the City Engineer and Public Works Director. The City of Baldwin has received approval from Georgia EPD for delegation of review and approval of certain types of public sanitary sewer system extensions.

8.20.2.6 Easements

A. All easements shall allow adequate room to construct the sanitary sewer line and appurtenances. Permanent easements shall be a minimum of 20 feet wide except that when the depth of the sewer line exceeds ten (10) feet the required easement width shall increase such that the easement width is at least twice the depth from the ground surface to bottom of the pipe. Easements with more than one utility shall be wider as required by the City.
B. It shall be the responsibility of the Developer to obtain any off-site easements required to connect the project to the existing public sewer system.
C. Easements shall be conveyed to the City of Baldwin for all facilities that are to be dedicated to the City. Final plans cannot be approved until all necessary off-site easements have been submitted, approved and recorded.

8.20.2.7 Georgia DOT and Railroad Permits

The Developer (not the City) shall prepare all plans, details, etc. required for submittal to DOT and the railroad company for encroachment permits in their respective right-of-ways. The Developer shall submit said plans and details to the City. The City or the City's representative will prepare and submit the required permit requests to these agencies with the plans and details provided by the Developer.

8.20.2.8 Plan and Profiles

Profiles shall have a horizontal scale of not more than 1"=100' for cross-country lines and 1"=50' for (existing and proposed) developed areas, and a vertical scale of not more than 1"=10'. The plan view shall be drawn to the corresponding horizontal scale. The plan view shall normally be shown on the same sheet as the profile. In any case, both the plan and profile view shall have line designations, station numbers, manhole numbers and any other indexing necessary to easily correlate the plan and profile view. The vertical datum used should be the elevation above mean sea level with benchmarks shown on the plans and the horizontal datum

should be tied to State Plane coordinates. Plans and profile shall show location of streets, storm sewer, water lines, all other utilities and their easements.

8.20.2.9 Crossing Streams and Standing Bodies of Water

A. Sewer lines crossing streams or standing bodies of water, both above and under water, present special problems, and should be discussed with the City's Engineer and Public Works Director before final plans are prepared.
B. Aerial crossings of sewers laid on piers across ravines or streams shall be allowed only when it can be demonstrated that no other alternative exists.

8.20.2.10 Sanitary Sewers Adjacent to State Waters

Cross-country sanitary sewers adjacent to state waters shall be designed and constructed to comply with the buffer requirements, including Georgia DNR Rules 391-3-7, the Georgia Erosion and Sediment Control Act OCGA 12-7-1, and any other ordinances of the City of Baldwin. In cases where these regulations differ, the most protective (greatest distance from the edge of the stream) will serve as the standard. Sanitary sewers crossing streams shall be kept to a practicable minimum. Where sewers parallel state waters, the sewers and their respective easements shall be located outside the buffer area. Reasons for requesting sewer lines to be located within stream buffers shall be provided in the preliminary plan application and a Stream Buffer Variance application must be made by the Developer to Georgia EPD.

8.20.2.11 Sanitary Sewer Design Calculations

A. Sanitary sewer design calculations shall be submitted for all proposed mains and pump stations as part of the development plan submittal according to the items below.
   1. Gravity sewer mains shall be no less than 8" diameter.
   2. Sanitary sewer service laterals shall be no less than 6" diameter.
   3. New residential sanitary sewer systems shall be designed on the basis of an average daily flow of sewage of not less than 200 gallons per household per day.
   4. Peak factors for residential sanitary sewers shall be no less than 2.5 times the average flow. Peak factors for commercial and industrial areas shall be a minimum of 3.0 and a maximum of 4.0. Peak factors for educational and government/institutional areas shall be a minimum of 4.0 and a maximum of 6.0.
   5. Sanitary sewers shall be designed to carry the peak flow when flowing at a depth of 70% of the pipe diameter.
   6. All sanitary sewers shall be so designed and constructed to give mean velocities, when flowing full of not less than two (2) feet per second. The table below indicates the minimum slopes allowable by the City of Baldwin, which allow for slopes greater than 2 feet per second.

Pipe Size (inches)	Minimum Slope (%)
8	0.50
10	0.40
12	0.30
15	0.22
18	0.15
21	0.12

24	0.10
27	0.08
30	0.07
36	0.06

7. Where velocities greater than 15 feet per second are attained, special provision should be made to protect against displacement by erosion and impact.

8.20.2.12 Sanitary Sewer Pump Stations

A. The following minimum requirements apply to the design of sanitary sewer pump stations.
   1. Pump stations having less than 500 gpm capacity (per pump) shall utilize two submersible centrifugal pumps each having a capacity equal to the design flow. Pump stations having a capacity of 500 gpm or more shall be reviewed on an individual basis and may have requirements differing from those outlined herein.
   2. Force mains shall be sized to provide a velocity of at least three (3) feet per second.
   3. The design shall allow for removal of any pump or equipment item without the need to shutdown the entire lift station. Lift assembly shall be provided for pump or equipment removal.
   4. The Design Engineer shall consult with the City Engineer and Public Works Director after preliminary design data has been developed for information on approved pump manufacturers. The City reserves the right to review each application on an individual basis and to reject the use of non-approved manufacturers.

8.20.2.12.1 Sanitary Sewer Pump Station Plan and Design Requirements

A. Construction plan submittals shall include the following pump station information:
   1. System head calculations; tabulated and plotted on the pump curve, along with a plot of force main velocity.
   2. Standard drawings, details and specifications sufficient to ascertain compliance with these regulations.
   3. Calculations showing determination of wet well volume and cycle time at design conditions. Wet well volume should be sufficient to provide a cycle time of no less than ten (10) minutes from a pump "on" to the next pump "on" time. In addition to short cycles, the Design Engineer should ensure that cycle times will not be too long and create a nuisance condition.
   4. Backup power shall be provided for pump stations in the event of a power outage.
   5. Buoyancy calculations showing that structures are protected against flotation.

B. Shop Drawings
   1. After construction plan approval, but before purchasing any pump station equipment, shop drawings shall be submitted to the City including the following information:
      a. Manufacturer's catalog sheets, performance curves, installation drawings, specifications and list of options for the specific pump that is offered for approval.
      b. Similar catalog data for controls, valves, hatches, yard hydrants, pre-cast wet well and other manufactured items.

C. Certification

1. After installation and before placing the system into full operation, the work must be inspected by the Developer's Engineer who must then issue a certification to the City verifying that all work has been complete in accordance with approved plans. This certification shall include all construction of the lift stations and force mains. After acceptance of the work by the Engineer, a factory representative shall inspect and start up the system certifying rotation, capacity, amperage draw, lack of vibration and other standard checks. This certification shall state the beginning date of the warranty and include a copy of the warranty. The pump shall have a minimum manufacturer's warranty of five (5) years with no prorating.
2. After start up by the manufacturer's representative but before the pump station is placed into service the City's Engineer shall conduct pump performance and draw down tests to verify the pump station performs as designed. The Developer's Contractor shall provide all technical support required by the City Engineer including provisions to fill the wet well for pump testing with potable water. Sewerage shall not be used for these tests.

D. Operation & Maintenance Manuals
1. On or before the date of start-up, two (2) hard copy sets and one (1) digital copy in portable document format (pdf) of factory O & M Manuals shall be delivered to the Public Works Director. These manuals shall include the name of the purchaser, the serial numbers of pumps, detailed wiring schematics, telephone number and address for purchase of parts.

8.21 Stormwater Management Facilities

A. Construction and Design Standards
1. The stormwater drainage system and easements shall be separate and independent of any water or sanitary sewer system and associated easement.
2. Storm drain hydrology shall be designed by the rational method for drainage areas of 500 acres or less, and by the Soil Conservation Service method for drainage areas exceeding 500 acres. Other methods require prior approval by the City of Baldwin. A copy of design computations for 25 year storms shall be submitted along with the construction plans. Inlets shall be provided so that surface water is not carried for a distance of more than 500 feet in the gutter. When calculations or street design indicate that curb capacities are exceeded at a point, no further allowance shall be made for flow beyond that point, and basins shall be used to intercept flow at that point. All turnarounds shall require standard 6-inch vertical curb section for negative grades. All streets with curb and gutter shall have standard 6-inch vertical curb.
3. When storm drain pipe is required, it shall extend along the right-of-way to a natural and adequate drainage way or otherwise along an easement to the rear property lot boundary, development boundary, 200 feet from the right-of-way or 25 feet beyond the rear setback of the adjoining lot.
4. Storm drainage conveyance systems shall be designed in accordance with the Stormwater Conveyance Systems chapter of this ordinance.
5. Stormwater management facilities shall be designed in accordance with the Stormwater Management chapter of this ordinance.
6. The stormwater management and conveyance systems shall be designed by a Professional Engineer licensed in the State of Georgia.

B. Drainage of Springs or Surface Water

The applicant will be required to drain via pipe any spring or surface water that may exist either previously to or as a result of the development. Such drainage facilities shall be located or in perpetual unobstructed easements (minimum width 20 feet) and shall be constructed in accordance with the construction standards and specifications.

C. Accommodation of Upstream Drainage Area
A culvert, cross drain, or other drainage facility shall in each case be large enough to accommodate potential runoff from its entire upstream drainage area whether inside or outside of the development. The City of Baldwin shall approve the necessary size of the facility which has been designed based on a 25-year storm or 100 year storm depending on the type and location of the drainage facility and on the provisions of the construction standards and specifications assuming conditions of maximum potential development density permitted by the zoning ordinance.

D. Effect on Downstream Drainage Areas
1. A hydrologic study shall be required to determine the effect of the development on existing downstream drainage facilities outside the area of the development improvements. Where it is anticipated that the additional runoff due to the development of the site will overload an existing downstream drainage facility, the City of Baldwin may withhold approval of the site until provision has been made for the improvement of said potential condition in such sum as the City of Baldwin shall determine.
2. No preliminary plans for developments shall be approved unless adequate drainage will be provided to an adequate watercourse or facility.

E. Drainage Easements Required
Where a development is traversed by a watercourse, drainage way, channel, or stream, a stormwater easement or drainage right-of-way conforming substantially to the lines of such watercourse, shall be provided of such width and construction or both as will be adequate for the purpose. Whenever possible, it is desirable that the drainage be maintained by an open channel with grassed or landscaped banks and adequate width for maximum potential volume of flow.

F. Dedication of Drainage Easements
1. Where topography or other conditions are such as to make impractical the inclusion of drainage facilities within road right-of-way, perpetual unobstructed easements at least 20 feet in width for such drainage facilities shall be provided across property outside the road lines and with satisfactory access to the road. Easements for all stormwater outlets shall be indicated on the plat. Drainage easements shall be carried from the road through a natural or constructed watercourse or to other drainage facilities.
2. The applicant shall dedicate, by drainage or conservation easement of land on both sides of existing watercourses, for a distance of ten feet on each side or wider as determined by the City of Baldwin.
3. Low-lying land along watercourses subject to flooding or overflowing during storm periods, whether or not included in areas for dedication, shall be preserved and retained in their natural state as drainage ways.

G. New or Existing Lake
If it is proposed to make a new or existing lake a part of a development, or if the development is located downstream from a water impoundment, the Developer shall be required to submit a breach analysis and show the dam breach zone on the plans.

8.22 Required Improvements

No improvements may be made before the development plans are accepted and approved by the City of Baldwin. All improvements shall meet the minimum standards set forth in this chapter.

8.23 Approval Requirements Prior to Issuance of Certificate of Occupancy

A certificate of occupancy will not be issued by the City of Baldwin until all requirements have been met.

A. An as-built stormwater management report and survey of all structural stormwater controls, stormwater conveyance systems, and sanitary sewer lines, including as-built profiles and channel cross-sections, shall be submitted to the city for review and approval prior to issuance of certificate of occupancy.
B. Submit a maintenance agreement that includes all structural stormwater controls.
C. As-built survey record drawings shall be prepared by a registered surveyor in the state of Georgia.
    1. As-built drawings shall be submitted to the city for review and approval prior to final plat approval. The as-built drawings shall include the a plan view with the location of all stormwater controls, stormwater conveyance systems, sanitary sewer manholes, valves, fire hydrants, water meters, water lines, vaults, structures, earth embankments, etc. including as-built profiles of all storm drain pipe, sanitary sewer lines and force mains and as-built channel cross-sections.
    2. All horizontal locations shall be referenced to state plane coordinate system and to existing streets or major structures.
    3. Elevations of all drainage structures, gravity sewers, structure inverts and tops shall be shown.
    4. Submit an ASCII text file in PNEZD (point, northing, easting, elevation, description) format of all structures (i.e., drainage structures, valves, hydrants, meters, manholes, etc.). Coordinates shall have an accuracy of +/- 0.1 foot. Elevations shall be based on mean sea level.
    5. Submit digital files of as-built drawings in Auto Cad "DWG" format and Adobe "PDF" format to the City on a compact disc, flash drive, or SD card.
D. Submit professional certifications for installation of site specific items such as retaining walls, proprietary devices, etc.
E. Submit a third-party pipe installation inspection report for all pipes installed under the roadway. The report must be submitted prior to the final inspection by the city. The pipe installation report shall include at least the following:
    1. Description of subgrade and bedding used in installation.
    2. Pipe material certifications.
    3. Description of backfill methods used.
    4. Certification from a Registered Professional Engineer that the pipe was installed in accordance to the approved Construction Plans and any applicable Georgia DOT,

AASHTO or American Concrete Pipe Association Standards. The city can request additional information for the pipe installation report as a condition of issuing the Land Disturbance Permit. The Public Works Director shall be notified before the pipe installation begins so the city may also periodically inspect the installation process. All other pipe materials may be used in applications approved by the Georgia Department of Transportation.

F. Complete all items from the field inspection.
G. Stormwater management facilities will need to be cleaned of silt accumulation and maintained as provided in this ordinance.
H. The Public Works Director shall confirm that:
   1. All improvements and installations of the development required for the issuance of a certificate of occupancy under the rules and regulations of the city have been completed in accordance with the appropriate specifications; and
   2. All of the drainage and retention facilities, grading, water and sewer utilities, street base and curbing construction, and grassing required for the issuance of a certificate of occupancy have been completed.

9.0 Subdivision Regulations

9.1 Policy

The regulations in this section shall hereafter be known, cited and referred to as the subdivision regulations of City of Baldwin, Georgia.

A. In the interest of planned and economical development, continuance of the general health and welfare of the public, and to ensure consistency with the land use plan, it is declared to be the policy of the city to consider the subdivision of land and its development to be subject to the control of the city.
B. Land to be subdivided shall be of such character that it can be used safely for building purposes without danger to health or hazard from fire, flood, or other threat and that it can be serviced with those public facilities deemed necessary and appropriate for such development.
C. The existing and proposed public improvements shall conform with and be properly related to the proposal shown in the land use plan, and it is intended that these regulations shall supplement and facilitate the enforcement of the provisions and standards contained in building and housing codes, the zoning regulations, and the land use plan.

9.2 Purpose

These subdivision regulations are adopted for the following purposes:

A. To encourage the development of an economically stable community so as to help conserve and protect the natural, economic, and scenic resources of the city;
B. To assure the provision of required streets, utilities, and other facilities and services to both residential and nonresidential subdivision developments;
C. To assure the adequate provision of safe and convenient access and circulation, both vehicular and pedestrian, and to help insure that all lots will be accessible to firefighting equipment and other emergency and service vehicles;
D. To assure the provision of needed public open spaces and building sites in new land development through the dedication or reservation of land for recreational, educational, and other public purposes;
E. To ensure adequate drainage by providing for the proper layout of streets and lots, thereby reducing maintenance problems;
F. To help prevent the spread of urban blight and slums;
G. To promote a safe and healthy environment;
H. To assure adequate identification of property on the public records;
I. To encourage the development of the community in accordance with the land use plan.

9.3 Conditions on Development

Regulation of the subdivision of land and the attachment of reasonable conditions to land subdivision is delegated by the state to this city. The developer has the duty of compliance with these regulations and any reasonable conditions determined by the City of Baldwin for design, dedication, improvement, planning, etc., so as to conform to the physical and economical development of the city and to the safety and general welfare of the future lot owners in the subdivision and of the community at large.

9.4 Jurisdiction
These regulations shall control the subdivision of residential and nonresidential land within the City of Baldwin, Georgia.

9.5 Interpretation
In their interpretation and application, the provisions of these regulations shall be held to be the minimum requirements for the promotion of the public health, safety, and general welfare.

9.6 Provisions
Where any provision of these regulations imposes a restriction different from those imposed by any other provision of these regulations or any other ordinance, rule or regulation, or other provision of law, whichever provisions are more restrictive or impose higher standards shall control.

9.7 Easements, Covenants and Other Private Restrictions
These regulations are not intended to supplant any easement, covenant or any other private restriction; provided that, when the provisions of these regulations are more restrictive or impose higher standards than such easement, covenant, or other private restriction, the provisions of these regulations shall govern.

9.8 Subdivisions Relying on Provision of Access or Services by Another Jurisdiction
The city council may disapprove all or any part of a subdivision where proper access and the provision of services affecting the health, safety, and welfare of the subdivision are jeopardized by reliance upon the performance of another jurisdiction.

9.9 Saving Provision
These regulations shall not be construed as abating any action now pending under, or by virtue of, prior existing subdivision regulations, or as discontinuing, abating, modifying, or altering any penalty accruing or about to accrue, or as affecting the liability of any person, firm, or corporation, or as waiving any right of the city under any section or provision existing at the time of adoption of the regulations codified in this title, or as vacating or annulling any rights obtained by any person, firm, or corporation, by lawful action of the city, except as shall be expressly provided for in these regulations.

9.10 Separability
If any part or provision of these regulations or application thereof to any person or circumstances is adjudged invalid by any court of competent jurisdiction, such judgment shall be confined in its operation to the part, provision, or application directly involved in all controversy in which such judgment shall have been rendered and shall not affect or impair the validity of the remainder of these regulations or the application thereof to other persons or circumstances. The Baldwin City Council declares that it would have enacted the remainder of these regulations even without any such part, provision, or application.

9.11 Rules of Construction and Definitions

A. For the purpose of these regulations, certain numbers, abbreviations, terms, and words used herein shall be used, interpreted and defined as set forth in this section.

B. Unless the context clearly indicates to the contrary, words used in the present tense include the future tense; words used in the plural number include the singular; the word "herein" means "in these regulations"; the word "regulations" means "these regulations."

C. A "person," includes, but is not necessarily limited to, a corporation, a partnership, proprietorship, and an incorporated association of persons such as a club; "shall" is always mandatory; a "building" includes a "structure"; a "building" or "structure" includes any part thereof.

D. Words or phrases not defined in this section shall have definitions as stated in the zoning regulations or, if not defined in the zoning regulations, shall be considered to have definitions consistent with generally accepted planning principles as determined by the City of Baldwin.

Appeal is the process by which an aggrieved party may petition for review of a decision made by an official or department of city government.

Approved street is any street, whether public or private, meeting all applicable construction and design standards and specific actions in this title, or any accepted public streets.

Arterial street or major highway is a highway, parkway, freeway, expressway or arterial street utilized primarily for high vehicular speeds or for heavy traffic volumes on a continuous route with intersections at grade or separated.

Building is any structure, either temporary or permanent, above or below ground, having a roof or other covering and designed, built, or used as a shelter or enclosure for persons, animals, or property of any kind. This definition includes tents or awnings used for purposes of a building.

Building permit is a written permit issued by the building inspector authorizing construction, renovation, or repairs to a structure.

Centerline is:

A. The centerline of any right-of-way having a uniform width;

B. The original centerline where a right-of-way has been widened irregularly;

C. The new centerline whenever a road has been relocated.

City road means a street which is owned or maintained by the city.

Collector street is any street designed and located to collect traffic from intersecting minor streets while still giving access to abutting property, and to conduct such traffic to and from a variety of destinations outside a single subdivision, neighborhood or business district.

Common areas are those portions of a site and/or building(s) collectively owned or controlled.

Common land is that land set aside for open space or recreational use for the owners of the residential lots in a subdivision, which land is conveyed by the developer in fee simple absolute title by a warranty deed to trustees whose trust indenture provides that the common land be used for the sole benefit, use and enjoyment of the lot owners, present and future. No lot owner shall have the right to convey his interest in the common land except as an incident of the ownership of a regularly platted lot.

Construction plans are the maps or drawings accompanying a subdivision plat and showing the specific location and design of improvements to be installed in the subdivision in accordance with the requirements of the City of Baldwin as a condition of the approval of the plat.

Cross drain is the pipe system designed to accommodate a drainage basin's 100-year stormwater runoff passing under a street.
Cul-de-sac is a local street with only one outlet, closed and terminated by a vehicular turnaround.
Dead end street is a street having only one end open for vehicular traffic and the other permanently terminated by an approved turnaround for vehicles.
Double-frontage lot is a lot having frontage on two streets, as distinguished from a corner lot.
Driveway is an access way connecting one or more dwelling units and/or their parking spaces with a street.
Engineer is a registered, practicing engineer, licensed by the State of Georgia.
Final plat means the map or plan or record of a subdivision and any accompanying material.
Health department means the County Health Department, which is duly authorized to perform health services in the county.
Improvements are street pavement, sidewalk pavement, pedestrian way pavement, water mains, storm sewers, sanitary sewers, signs, monuments, landscaping, street lights, buildings or other structures, and other similar items.
Land use plan is a development plan or any part thereof adopted by the city which indicates the general location for the various physical classes of public works, places, and structures and depicting the general planned physical development of the city.
Lot area is the computed ground area inside the lot lines.
Modification is a relaxation of the terms of these regulations where such modification will not be contrary to the public health, safety and welfare, and where, owing to conditions peculiar to the property, and not the result of actions of the subdivider or owner, a literal enforcement of these regulations would result in unnecessary and undue hardship.
Nonresidential subdivision is a subdivision whose intended use is other than residential, such as commercial or industrial. Such subdivision shall comply with the applicable provisions of these regulations.
Nuisance is any condition, including visual conditions, or use of any premises or building, including exterior surfaces, which is detrimental to the public health, safety, morals, or welfare or which is detrimental to the property of others, or causes or tends to cause substantial diminution in the value of property in the subdivision. Nuisance includes, but is not confined to, any of the following: garbage, trash, weeds, building materials or debris, abandoned, discarded, or unused objects, junk, or collections of equipment such as automobiles, furniture, stoves, refrigerators, freezers, cans, boxes, or containers.
Open space is a parcel or parcels of land or an area of water or a combination of both land and water within the site designated for development, designed and intended for the use and enjoyment of residents of a development or for the general public, not including streets or off-street parking areas. Open space shall be substantially free of structures but may contain such improvements as are in the plans as finally approved and are appropriate for the benefit of residents of the development.
Owner is any individual, firm, association, syndicate, partnership, corporation, proprietorship, trust or any other legal entity having sufficient (51 percent) proprietary interest in the land sought to be subdivided to commence and maintain proceedings to subdivide the same under these regulations.

Parcel is a general term including all plots of land shown with separate identification on the official tax appraisal maps.
Pavement is that portion of a street having an all-weather, stable constructed surface and subsurface for the support and movement of vehicular traffic.
Pavement width is the shortest distance as measured from edge of pavement to edge of pavement exclusive of curb and gutter sections.
Planned development is a method of development described in the zoning ordinance of the city.
Public improvements are any drainage ditch, roadway, parkway, sidewalk, pedestrian way, tree, lawn, off-street parking area, lot improvement, or other facility for which the city may ultimately assume the responsibility for maintenance and operation, or which may affect an improvement for which city responsibility is established.
Public utilities are water, gas, sanitary and storm sewer, electrical, and communications lines and facilities.
Reserve strip/area is land which is set aside for a specific purpose.
Right-of-way is a strip of land occupied or intended to be occupied by any or all of the following: a street, crosswalk, railroad, road, electrical transmission line, oil or gas pipeline, water main, sanitary or storm sewer main, or for another special use. The usage of the term right-of-way for land platting purposes shall mean that every right-of-way hereafter established and shown on a final plat is to be separate and distinct from the lots or parcels adjoining such right-of-way and not included within the dimensions or areas of such lots or parcels.
Right-of-way width is the distance between property lines measured at a right angle to the centerline of the right-of-way.
Rough grade is proposed finished grade plus or minus one foot as shown on the appropriate construction plans.
Shoulder is that portion of a street or road from the outer edge of the paved surface or back of curb to the inside edge of the ditch or gutter or original ground surface.
Sidewalk is the portion of the right-of-way which is parallel to the street or road and intended for pedestrian traffic.
Slope is the rate of deviation of the ground surface from the horizontal surface, expressed as a percent.
Storm drain is the pipe system designed to accommodate the twenty-five year stormwater runoff collected in the street.
Street is a right-of-way for vehicular traffic, whether designated as street, highway, thoroughfare, parkway, expressway, freeway, road, avenue, drive, boulevard, lane, place, circle, or otherwise.
Street grade is the grade of the centerline of a street measured at any point along the street, expressed as a percent.
Subdivider is any person who, having an interest in land, causes it, directly or indirectly, to be divided into a subdivision.
Surveyor is a registered, practicing surveyor, licensed by the State of Georgia.
Turnaround is the circular pavement at the end of a cul-de-sac.
Vicinity map is a drawing incorporated in the preliminary plans covering a minimum one-mile radius from the proposed subdivision.
Zoning ordinance is the zoning ordinance adopted by the city.

9.12 General Procedure

When any subdivision of land is proposed, before any permit for the subdivision shall be granted, the subdividing owner, or his authorized agent, shall apply for and secure approval of the proposed subdivision in accordance with the following procedures of this section.

9.13 Subdivision Definition

A "subdivision" is the division of a tract or parcel of land into two or more lots, building sites, or other divisions for the purpose of sale, legacy, a new street, or a change in existing streets, and includes resubdivision where appropriate to the context; "subdivision" also relates to the process of subdividing or to the land or area subdivided. The term shall also include the opening of a new street or road. The combination or recombination of portions of previously platted lots where the total number of lots is not increased and the resultant lots meet the standards of the city subdivision regulations are not included within this definition.

9.14 Plat Approval

No person shall sell or transfer any land by reference to or exhibition of or other use of a plat of a subdivision before such plat has been approved by the City of Baldwin and recorded in the office of the Baldwin city clerk. The description of any land by metes and bounds in the instrument of transfer or other documents used in the process of selling or transfer shall not exempt the transaction from this title.

9.15 Submittal of Plats

Any subdivider of land within the City of Baldwin shall submit to the City of Baldwin the required plats of the subdivision, which shall conform to the requirements of this title.

9.16 Preliminary Plat Approval

No subdivider shall proceed with any construction work on the proposed subdivision, including clearing of land, before obtaining a preliminary plat approval from the City of Baldwin.

9.17 Approved Street Access Required for All Lots

From and after the time when the platting jurisdiction of the City of Baldwin shall have attached by virtue of adoption by the city council of a street plan and the adoption by the governing authority of the city of a set of land subdivision regulations, no building permit shall be issued for and no building or other structure shall be erected on any lot within the subdivision unless the street giving access to the lot upon which said building is proposed to be placed shall have been accepted or opened as, or shall have otherwise received the legal status of, a public street prior to that time, or unless such street and lot corresponds in its location and lines with a street shown on a subdivision plat approved by city council, or on a street plat made and adopted by city council, or a street located and accepted by the governing authority of the city. Any building erected in violation of this section shall be deemed an unlawful structure, and the building official, city attorney, or other official designated by the governing authority of the city may bring appropriate action to enjoin such erection or cause it to be vacated or removed.

9.18 Exemptions from Preliminary Plat Requirements

The following types of subdivision shall be exempted from the requirements of a preliminary plat and shall not be required to obtain a certificate of preliminary plat approval. The subdivision shall be required to obtain a recording and approval certificate as a final plat:

A. A subdivision which shall have lots fronting on a road or street shown on the official road map of the city; provided no new street, no community water system and no community sewer system is required.
B. The subdivision of land in a designated planned development meeting the requirements and having been approved by the City.

9.19 Preapplication Review

The owner, or his authorized design representative, shall review his plans with City of Baldwin personnel or the City's designee prior to submittal of a preliminary plat when the proposed subdivision involves a tract greater than 20 acres, any tract with a community water or sewer system or any tract in a planned development district with a proposed new street. The informal review shall be for the purposes of:

A. Review of the requirements of these regulations; and
B. Review of the owner's plans and the development's impact on soil erosion control, subdivision design, water supply and waste treatment.

9.20 Boundary Survey

The subdivider should present a boundary survey of the tract and a rough sketch of his proposal.

9.21 Submittal of Plans to Appropriate Agencies

The City of Baldwin may require the Developer to present his plans to any affected agency.

9.22 Preliminary Plat

9.22.1 Application

The owner or his authorized agent shall make application for preliminary plat approval to the City of Baldwin by filing in the office of the Public Works Director the following items, if applicable, in the sections below.

9.22.2 Application Contents

The preliminary plat shall contain an application signed by the owner or the owner's designated agent, specifying:

A. Total acreage;
B. Number of lots;
C. Average lot size;
D. Minimum lot size;
E. Proposed use of each lot;
F. Water supply system;
G. Sewer system;
H. Stormwater management and conveyance systems;

I. Length of proposed roads;
J. Phasing of the subdivision;
K. Estimated time for completion;
L. An outline of any proposed organizations to control a portion or all of the tract, i.e., a homeowners' association or equivalent body; and
M. Notice of intent to dedicate any portion of the property to the public.

9.22.3 Preliminary Plat Contents

The preliminary plat and 3 copies of the preliminary plat, drawn in accordance with this code, shall have affixed to them the stamps or signatures of the following applicable agencies or firms. A letter from an applicable agency may be submitted in lieu of a plat stamp:

A. Approval of the City Engineer and City of Baldwin if to be served by a public water system;
B. Approval of the Georgia Environmental Protection Division and City Public Works Director if to be served by a community water system;
C. Approval of the City Engineer and Public Works Director if to be served by a public sewer system;
D. Approval of the Georgia Environmental Protection Division and City Public Works Director if to be served by a community sewer system;
E. Approval of the stormwater management and conveyance systems by the Public Works Director;
F. Approval of the county health department if to be served by septic system;
G. Preliminary engineering certificate, signed and sealed by an Engineer, Surveyor or Landscape Architect registered in Georgia;
H. Approval for construction by the Public Works Director.

9.22.4 Review

The City of Baldwin shall review the application and submit it to the City Council. The Public Works Director may recommend changes that are necessary to meet the standards and intent of this title to serve the best interest of the City.

9.22.5 Approval

The City Council may:

A. Grant preliminary plat approval; or
B. Grant preliminary plat approval conditional upon any changes, which shall be noted on the preliminary plat or attached thereto; or
C. Deny preliminary plat approval, if the plat does not meet the standards and intent of this or any other regulations.
D. Grant the Public Works Director authority to recommend approval of preliminary plats which meet all requirements of this and any other applicable regulations. The City of Baldwin will present the approved plat to the City of Baldwin at the next regular meeting to obtain formal approval of the plat.

9.22.6 Notation of Action

Action of the city council shall be noted on three copies of the preliminary plat. One copy of the plat shall be returned to the applicant.

9.22.7 Expiration of Approval

A certificate of preliminary plat approval shall expire 12 months following the date of approval. The applicant must have, at a minimum, received an approved grading inspection within the 12 months in order to continue work on the subdivision without an extension

9.22.8 Appeals

Should an applicant disagree with the comments of the city, concluding that factual or interpretive errors have been made, the following appeal procedure is designed to resolve the issues:

A. Submit to the city a written statement clearly defining the nature of the disagreement, the specific reference to the section of these regulations at issue, and the applicant's own opinion.
B. Should the city, after review of the applicant's statement, conclude that neither these regulations nor other applicable regulations or conditions of zoning would be violated, the city shall modify its comments accordingly. However, should the city conclude that these or other applicable regulations would be violated, the case shall be referred to the city council at the earliest regularly scheduled meeting.
C. The Baldwin City Council shall, after receiving a report from the Public Works Director, decide the issue. This decision shall constitute the final administrative appeal.

9.23 Issuance of Soil Erosion, Sedimentation, and Pollution Control Permit

Following the approval of the soil erosion, sedimentation, and pollution control plan by Georgia Environmental Protection Division and review and approval of the preliminary plat by the City of Baldwin, a soil erosion and sedimentation control permit may be issued by the Georgia Environmental Protection Division.

9.24 Implementation of Soil Erosion, Sedimentation, and Pollution Control Permit

Upon the issuance of a soil erosion, sedimentation, and pollution control permit:

A. Erosion control measures must be installed by the subdivider and inspected and approved by the City of Baldwin prior to any grubbing or grading; and
B. Sediment retention facilities must be installed and operational prior to major grading operations.

9.25 Extension of Time on Development

Before a certificate of preliminary plat approval has expired, the subdivider may request an extension of the certificate. An application shall be made in writing to the City of Baldwin. The City of Baldwin shall take action on the application in the same manner as an original application. However, if modifications are made to regulations, the plat must meet these changes in order to receive the extension.

9.26 Construction Inspection Schedule

Each phase of the subdivision shall be constructed according to the following schedule. Care should be taken to observe the schedule, as unnecessary delay and additional expense may result if the construction is varied substantially from the schedule.

9.27 Completion of Water, Sewer, and Storm Drain Installations

All underground water, sewer, and storm drain installations, including sewer cross taps to individual lots, shall be completed prior to the application of the base course of any new street within the subdivision.

9.28 Required Inspections

The inspection of all construction is required. The subdivider shall be responsible for notifying the inspection authority at least 24 hours prior to the work being performed and coordinate with the inspector as to when to perform the work so that it can be monitored. Before reinspection of any subdivision development site by the city, the developer of such site shall pay the reinspection fee as established in Appendix "C" City of Baldwin, GA Plan Review and Inspection Fee Schedule if the reinspection is necessitated by the developer's failure to comply with these regulations. From time to time, upon the recommendation of the Public Works Director and approval of the Baldwin City Council, said schedule may be revised as deemed necessary by adoption of a new schedule by resolution of the City Council in a public meeting.

9.29 Stages for Notification of Public Works Director

The Public Works Director shall be notified:

A. At completion of clearing and grubbing and prior to grading;
B. Prior to installation of storm drainage pipe;
C. At completion of grading and restaking the centerline prior to setting curb forms and lines;
D. For subgrade and curbing inspection prior to application of base course;
E. At completion of the base course and prior to the application of the prime coat;
F. At completion of the prime coat and prior to the application of the paving course in order to schedule the presence of a city inspector during application of plant mix;
G. Upon construction of sidewalk formwork, prior to pouring of concrete. (Note: Inspections on sidewalks poured on a lot-by-lot basis are handled by city building inspections.)
H. After pouring and finishing of sidewalks. (Note: Inspections on sidewalks poured on a lot-by-lot basis are handled by city building inspections.)
I. At completion of shoulder reconstruction and shaping, prior to final seeding;
J. At completion of construction and final plat;
K. Fifteen months from acceptance of the maintenance bond or 75 percent build-out, whichever occurs last; (publicly maintained residential subdivisions)
L. One year from acceptance of maintenance bonds for paving only in any subdivision with roads built to industrial standards (depths of base and asphalt only);
M. One year from acceptance of the maintenance bond in privately maintained subdivisions and;
N. At such other times as the Public Works Director should specify.

9.30 Private Utility Inspection Schedule
The owner of any utility serving a subdivision shall set its own inspection schedule.

9.31 Inspection of Water or Sewer System, Storm Drain Pipes, and Roads
The inspection of any water system or any sewer system shall be as required by the Public Works Director and the applicable state agency.

9.32 Use of Testing Agency
If tests of materials or construction are required, a recognized testing agency shall be used, and the Owner of the subdivision shall bear any expense.

9.33 Final Plat

9.33.1 Approval
Whenever the provisions of these regulations have been complied with and while the certificate of preliminary plat approval is in effect, the subdivider shall submit to the Public Works Director, for final plat review and approval, the following items in the sections below.

9.33.2 Application for Approval
The subdivider shall submit an application signed by the subdivider or the subdivider's designated agent, stating:

A. Total acreage;
B. Number of lots;
C. Minimum lot size;
D. Proposed use of each lot;
E. Water supply system;
F. Sewer system;
G. Stormwater management and conveyance systems;
H. Length of roads;
I. Phasing of the subdivision;
J. An outline of any proposed organizations to control a portion or all of the tract, i.e., a homeowners' association or equivalent body; and
K. Notice of intent to dedicate any portion of the property to the public.

9.33.3 Agency Approvals and Surveyor's Certificate
The subdivider shall submit 3 copies of the final plat, drawn according to this section, having affixed to them the stamps or signatures of the following applicable agencies or firms.

A. Approval of the City Engineer and Public Works Director if to be served by a public water system;
B. Approval of the Georgia Environmental Protection Division and Public Works Director if to be served by a community water system;
C. Approval of the City Engineer and Public Works Director if to be served by a public sewer system;

D. Approval of the Georgia Environmental Protection Division and Public Works Director if to be served by a community sewer system;
E. Approval of the county health department if served by septic system;
F. Approval of stormwater management and conveyance systems by the Public Works Director;
G. Surveyor's certificate;
H. Approval of construction by the Public Works Director.

9.33.4 Improvement Guarantee

The subdivider may submit a copy of any improvement guarantee for which provision is made.

9.33.5 Review

A. The subdivider shall be responsible for compliance with all appropriate regulations.
B. The City of Baldwin's designee shall review the final plat for compliance with these regulations, the zoning ordinance, latest edition, conditions of zoning, City of Baldwin, Georgia Minimum Development Standards Ordinance, and the regulations of other departments and state agencies, as appropriate.

9.33.6 Approval Requirements and Maintenance Bond

A. An as-built stormwater management report and survey of all structural stormwater controls, stormwater conveyance systems, and sanitary sewer lines, including as-built profiles and channel cross-sections, shall be submitted to the city for review and approval prior to final plat approval.
B. Submit a maintenance agreement that includes all structural stormwater controls.
C. As-built survey record drawings shall be prepared by a registered surveyor in the state of Georgia.
    1. As-built drawings shall be submitted to the city for review and approval prior to final plat approval. The as-built drawings shall include a plan view with the location of all stormwater controls, stormwater conveyance systems, sanitary sewer manholes, valves, fire hydrants, water meters, water lines, vaults, structures, earth embankments, etc. including as-built profiles of all storm drain pipe, sanitary sewer lines and force mains and as-built channel cross-sections.
    2. All horizontal locations shall be referenced to the state plane coordinate system and to existing streets or major structures.
    3. Elevations of all drainage structures, gravity sewers, structure inverts and tops shall be shown.
    4. Submit an ASCII text file in PNEZD (point, northing, easting, elevation, description) format of all structures (i.e., drainage structures, valves, hydrants, meters, manholes, etc.). Coordinates shall have an accuracy of +/- 0.1 foot. Elevations shall be based on mean sea level.
    5. Submit digital files of as-built drawings in Auto Cad "DWG" format and Adobe "PDF" format to the City on a compact disc, flash drive, or SD card.
D. Submit professional certifications for installation of site specific items such as retaining walls, proprietary devices, etc.

E. Submit a third-party pipe installation inspection report for all pipes. The report must be submitted prior to the final inspection by the city. The pipe installation report shall include at least the following:
   1. Description of subgrade and bedding used in installation.
   2. Pipe material certifications.
   3. Description of backfill methods used.
   4. Certification from a Registered Professional Engineer that the pipe was installed in accordance to the approved Construction Plans and any applicable Georgia DOT, AASHTO or American Concrete Pipe Association Standards. The city can request additional information for the pipe installation report as a condition of issuing the Land Disturbance Permit. The Public Works Director shall be notified before the pipe installation begins so the city may also periodically inspect the installation process. All other pipe materials may be used in applications approved by the Georgia Department of Transportation.

F. Complete all items from the field inspection.

G. Final approval by the City of Baldwin shall not be shown on the final plat until all requirements of these regulations have been met, and the Public Works Director has certified by letter or endorsement on the plat that a maintenance bond (either in the form of a guaranty bond or cash deposited for the city in escrow), or an irrevocable letter of credit, has been received providing for the maintenance of all installations and improvements required by these regulations for a period of 15 months following the date of final plat approval for base, paving, grassing, stormwater management facilities, and sidewalks. Either a guaranty bond or escrow must be accompanied by completed forms provided by the Public Works Director. Irrevocable letters of credit must be valid for a minimum 24 months from the date of issuance.

H. Developers will need to provide a new bond for the cost of any construction not completed at the 24-month time period for an additional 1 year and provide the new bond to the City. Failure to provide the new bond prior to the expiration of the current bond shall be cause to make claim against the current bond.

I. Stormwater management facilities will need to be cleaned of silt accumulation and maintained as provided in this ordinance prior to release of bonds.

J. The amount of the bonding mechanism will equal 30 percent of all completed infrastructure including base, paving, grassing, stormwater management facilities, and sidewalks plus 100 percent of the cost of all incomplete infrastructure such as remaining sidewalks and asphalt topping. The unit cost data used in the calculations will be based upon the latest Georgia Department of Transportation Item Mean Summary or the latest City of Baldwin contract data, whichever is higher.

K. Request for final acceptance and release of bonds can occur after all asphalt road construction has been in place for a minimum of one year, and all infrastructure is installed to the satisfaction of the City of Baldwin. Release of bonding mechanism may occur only upon a favorable vote by the Baldwin city council.

L. The Public Works Director shall confirm that:

1. All improvements and installations to the subdivision required for approval of the final plat under the rules and regulations of the city have been completed in accordance with the appropriate specifications; and
2. All of the drainage and retention facilities, grading, water and sewer utilities, street base and curbing construction, and grassing required for approval of the final plat have been completed.

9.33.7 Certification of Approval

When the City of Baldwin or the City's designee has approved the final plat and other affected departments and agencies of government as required have certified compliance and signed the original, the Public Works Director shall certify by his signature on the plat that all of the requirements of these regulations, the zoning regulations, and the conditions of zoning approval have been met. The final plat shall not be deemed approved until it has been signed by the Public Works Director and duly authorized representatives of the engineering department, water department and health department, as applicable. The director will present the approved plat to the City Council at the next regular meeting.

9.33.8 Issuance of Certificates of Occupancy

Where an improvement guarantee has been required for a subdivision, no certificate of occupancy for any building on any lot fronting a proposed road in the subdivision shall be issued prior to completion of improvements under the guarantee.

9.33.9 Revisions

No change, erasure, or revision shall be made on any preliminary or final plat, nor on accompanying data sheets, after approval of the City has been endorsed in writing on the plat or sheets, unless authorization for such changes has been granted in writing by the City. In no case shall the City approve a revision thereof unless the fact that it is a revised plat is clearly stated thereon.

9.33.10 Filing for Recordation

A. An approved final plat shall be filed for recording by the subdivider in the office of the Clerk of Superior Court within 60 days after final approval thereof. Otherwise, such approval shall be void. No Clerk of Superior Court shall file or record a plat of a subdivision until such plat has been approved by the Public Works Director.
B. The approval of a plat by the City Council shall not be deemed to constitute or effect acceptance by the City of any street or other public improvement shown on the plat.

9.33.11 Recordation

The Clerk of Superior Court shall file and record in his office maps or plats relating to real estate in the City.

9.33.12 Specifications for Maps and Plats

Maps or plats to be filed and recorded in the office of the Clerk of Superior Court shall be prepared in accordance with the following minimum standards and specifications:

A. Material
   1. Any such maps or plats shall conform to the Georgia Plat Act, as amended;
   2. When a map or plat is filed for recording, a legible original print, which shall not be larger than 17 inches by 23 inches, and a digital file of the original print shall be submitted to the Clerk or in accordance with the requirements of Georgia statutory law in effect at the time of filing.

B. Caption. The maps or plats shall have a title or name which shall be contained in the caption, and the caption shall also provide the following information:
   1. The county, city, town, or village, land district and land lot, and subdivision, if the property lies within a particular subdivision;
   2. The date of plat preparation;
   3. The scale, stated and shown graphically;
   4. The name of the land surveyor and his registration number.

C. Size. Maps or plats shall not be less than 8½ inches by 11 inches and not larger than 17 inches by 23 inches.

D. Data. Maps or plats shall be prepared in a professional manner and in accordance with the standards of good drafting procedures and shall show the following information, as specified:
   1. All maps or plats shall show the direction and distance from a point of reference to a point on the boundary of the individual survey, and such additional data as may be required to relocate the boundary point from the point of reference with the same degree of accuracy required of the parcel surveyed. The point of reference shall be an established monument position which can be identified or relocated from maps, plats, or other documents on public record.
   2. All maps or plats of boundary surveys or subdivision surveys shall show bearings and distances of all lines, and area of the parcels expressed in acres or square feet.
   3. All maps or plats of boundary surveys shall show the closure precision of the field survey as the ratio of one foot to the traversed distance in which an error of one foot would occur and a statement as to the method of adjustment. The closure may be stated as follows: "The field data upon which this map or plat is based has a closure precision of one foot in _____ feet, and an angular error of _____ per angle point, and was adjusted using _____ rule."
   4. All maps or plats of boundary surveys shall show the closure precision of the data shown on the map or plat. The closure may be stated as follows: "This map or plat has been calculated for closure and is found to be accurate within one foot in _____ feet."
   5. All maps or plats shall show the width, and the former widths if pertinent, of all rights-of-way adjacent to or crossing the property or adjacent to any point of reference.
   6. All maps or plats shall show easements and apparent encroachments, if pertinent.
   7. In the case of curved lines, pertinent data must be given for regular curves. Chord distances and directions shall be given for irregular curves.
   8. All land lot lines, land district lines, land section lines and city and county boundaries intersecting or adjacent to the surveyed property shall be indicated by lines drawn upon the map or plat with appropriate words and figures.

9. All corner markers and markers of pertinent reference points shall be fully described and indicated as to their material or types and shall be constructed of a permanent material such as iron, steel, concrete, or stone.
10. An arrow shall be shown on the map or plat to indicate the principal meridian, and a notation shall be made as to the reference of bearing to magnetic north, astronomic north, or grid north. A grid north reference shall indicate the zone.
11. All linear distances shown on maps or plats shall be horizontal.
12. All angular directions shown on maps or plats shall be represented in degrees and minutes. Where plats state or surveys require accuracy in excess of one in 5,000, the angular direction shall be represented in degrees, minutes, and seconds. All angular direction shall be referenced to the principal meridian.
13. A statement shall be shown on the map or plat to indicate the type of equipment used to obtain the linear and angular measurements used in the preparation of the map or plat.

9.34 Plat Requirements

Plats submitted to the City of Baldwin shall contain the following information as specified in this section.

9.34.1 Preliminary Plat

All applications for a certificate of preliminary plat approval for a subdivision shall be accompanied by 3 copies of the plat setting forth the proposed design of such subdivision. The original copy of such plat shall be drawn on a transparent medium with either black ink or soft pencil. The scale of such plats shall be not less than 100 feet to the inch. Such plats shall contain the following information:

A. Proposed name of subdivision, proposed unit division or stage development, if any, as proposed by the subdivider;
B. Name and address of the owner of record;
C. Name, address, telephone number, seal, and signature of the registered Professional Engineer, Surveyor or Landscape Architect responsible for the construction plans and Surveyor responsible for the boundary survey;
D. Name, address, and telephone number of the subdivider;
E. Date of survey, north point and graphic scale, source of datum, date of plat drawing, and space for revision dates;
F. Natural features within the proposed subdivision, including drainage channels, bodies of water, wooded areas and other significant features. On all water courses leaving the tract, the direction of flow shall be shown;
G. Community features within the proposed subdivision, including right-of-way and pavement widths, and names of existing and platted streets adjoining or abutting the subdivision, all easements, city and county lines and other significant information. Location and dimensions of bridges, utility lines and structures, buildings, culverts, cemeteries, and other features should also be indicated;
H. Location (land district and land lot), county, acreage;
I. Location sketch locating the subdivision in relation to the surrounding area with regard to well-known landmarks such as major thoroughfares, railroads or others. Sketches may be

drawn in freehand and at a scale sufficient to show clearly the information required, but not less than one inch to 2,000 feet. U.S. Geological Survey maps may be used as a reference guide for the location sketch;

J. Name of former subdivision, and the plat book and page numbers where it was recorded, of any or all of the preliminary plat that has been previously subdivided;

K. The location and specifications of proposed streets, including right-of-way lines, proposed roadbed type, roadbed width, and proposed grades;

L. Exact boundary lines of the tract indicated by a heavy line giving lengths and bearings;

M. Proposed layout, including lot lines with rough dimensions, lot numbers, block letters, street lines with letter designations for proposed street names, right-of-way widths, and sites reserved through covenants, easements, dedication or otherwise for public uses, for single family dwellings, for nonresidential uses, and for multifamily dwellings;

N. Contour lines based on sea level datum. These shall be drawn at intervals of two feet. Contour lines shall be based on field surveys or photogrammetric methods for aerial photographs. The basis for the topographic contour shown shall be specified. Topographic data based on geological survey maps which have been adjusted by field survey data may be accepted if the Public Works Director determines that such data will be adequate to evaluate the layout of lots and streets, drainage and other service requirements;

O. The preliminary plan of any existing and proposed water lines, sanitary sewers and storm drain pipe. Such plans shall include the proposed size and material of the pipe to be installed and the proposed percent grades with invert elevations of the lines of all sanitary sewer and storm drain pipes and top of structure elevations included on sanitary sewer and storm drain pipe profiles;

P. The distance and direction to public water lines and sanitary sewer lines;

Q. Location of drainage easements for all storm drain facilities, outlets, and subsequent drainage ways, streams and at other locations as required;

R. Location of 5 ft. wide sidewalks along both sides of the street;

S. Location of street lights;

T. Location of construction easement(s);

U. Location of perpetual easements;

V. Location and dimension of right-of-way, roads, cul-de-sacs, curb and gutter, and radii at intersections;

W. Location and results of percolation tests for lots which will not be served by a public or community sanitary sewer system, as required by the health department;

X. Location of stormwater management systems;

Y. Location or statement of flood hazard areas;

Z. Such other information as may be required by the health department and city council to determine whether or not the proposed design of the subdivision will conform to the design requirements of these regulations.

9.34.2 Preliminary Plat Supplemental Information

The preliminary plat shall be accompanied by the following information when same is not shown on or evident from the preliminary plat:

A. A written summary of the proposal giving information as to the overall development plan, giving type of structure, number of dwelling units, and types of business and industry, so that the effects of the development can be determined by the city council;
B. Source of water supply;
C. Statement of provision for sewage disposal and drainage;
D. Drainage information:
    1. Location and size of all proposed drainage structures;
    2. Acreage of drainage area;
    3. Location of land subject to flooding;
E. Engineering data as listed below:

1. A ground run profile of proposed streets shall show original centerline elevations, vertical curve data, minimum length, K value, and road, intersection, and cul-de-sac grades. The profile shall be drawn on standard plan and profile sheets with the plan section showing street layout, horizontal curvature data, drainage required, centerline station numbers, tangent length between reverse curves, minimum radii of centerline, edge of pavement and right-of-way;
2. Where sanitary sewer lines or storm drain pipes are to be installed, size of pipe, material, and location of manholes shall be indicated on the street profile;
3. Profiles of streets that are extensions of existing streets shall include elevations at 50-foot intervals for a minimum distance of 200 feet back of beginning point and forward of ending, or such additional distance as may be required by the Public Works Director;
4. The above plans shall be drawn to a scale no less than as follows: a horizontal scale of one inch to 100 feet, and a vertical scale of one inch to ten feet;
5. Cross-sections at all cross drain locations extending 25 feet beyond the pipe: a horizontal scale of one inch to ten feet, and a vertical scale of one inch to ten feet;
6. Where a proposed street construction limits or abuts the plat boundary, cross-sections and the necessary slope easement shall be submitted. A slope easement shall also be submitted under such other conditions as may be required by the Public Works Director;
7. Municipal, county, or land lot lines tied to the lines of the subdivision by distance and angles when such lines traverse the subdivision;
8. Exact locations, widths, and names of all streets within and immediately adjoining the plat;
9. Street centerlines showing stations and standard curve data of intersection, radii, length of tangents and arcs, and degree of curvature;
10. Lot lines with dimensions to the nearest foot, and minimum lot area;
11. Lots numbered in numerical order and blocks lettered alphabetically;
12. Name of each street;
13. Minimum setback lines on all lots and other sites;
14. Location and description of monuments;
15. Names of recorded owners of adjoining unplatted land;
16. Reference to recorded subdivision plats of adjoining platted land by record name, data, and number, when known;
17. Certification by a surveyor certifying to accuracy of the survey and plat;
18. Militia district and, when applicable, the land lot number;

19. When lots are located on a curve or when side lot lines are at angles other than 90 degrees, the lot width at the building line shall be shown;
20. Location, dimension and purpose of all drainage structures and of any easements, including slope easements, if required, and public utility right-of-way lines, and any areas to be reserved, donated, or dedicated to public use of sites for other than residential use with notes stating their purpose and limitations; and of any areas to be reserved by deed covenant for common uses of all property owners;
21. Certificates, statements, and notes on checklist;
22. Plans must show clearly the elevation and/or contour of the 100-year floodplain of any stream or backwater area on the site.

9.34.3 Contents of Final Plat

All applications for a recording permit shall be accompanied by electronic plans (AutoCAD and pdf) and paper copies of the final plat of the subdivision to be recorded. The submitted prints of such final plat shall be not greater than 17 inches by 23 inches at a scale of not less than 60 feet to the inch. Where necessary, the final plat may be on several sheets accompanied by an index sheet showing the entire subdivision. The final plat shall contain the following information:

A. Name of the subdivision, unit division or stage development, if any;
B. Name and address of owner of record;
C. Name and address of subdivider;
D. Date of survey and plat drawing, graphic scale, north point, and notation as to the reference of bearings to magnetic, true north, or grid north;
E. Location of tract (militia district, land district and land lot), tax parcel number, address, county, zoning;
F. Primary control point to which all dimensions, angles, bearings, and similar data on the plat shall be referred;
G. Tract boundary survey with lines, right-of-way lines of streets, easements and other right-of-way and property lines of all lots with accurate dimensions; bearings or deflection angles, radii arcs, curved property lines with chord bearings, chord lengths, arc lengths, arc radii and central angles;
H. Name and length of each street;
I. Road centerline with station numbers, horizontal curve data, and minimum radii of centerline, tangent length between reverse curves, street jogs, centerline offset, angle at intersections;
J. Temporary cul-de-sac if phasing;
K. Minimum setback lines on all lots and other sites;
L. Location and description of monuments;
M. Names of recorded owners of adjoining unplatted land;
N. Reference to recorded subdivision plats of adjoining platted land by record name, date, and number, when known;
O. Certification by Surveyor as to accuracy of the survey and plat;
P. Lot layout, lot lines with dimensions and lot area, numbering, minimum lot size, average lot size;

Q. When the tract of land to be subdivided abuts on U.S. government property, then the final plat of the subdivided land shall show a tie or ties of land lot lines conforming to U.S. government take line descriptions;
R. When lots are located on a curve or when side lot lines are at angles other than 90 degrees, the lot width at the building line shall be shown;
S. Lots or sites numbered in numerical order and blocks lettered alphabetically. In general, all lots should be numbered in numerical sequence without using block letters;
T. Location, dimensions and purpose of entire drainage, stormwater management, sewerage, water and public utilities systems and of any easements, including slope easements, if required, and public utility right-of-way lines, and any areas to be reserved, donated, or dedicated to public use of sites for other than residential use with notes stating their purpose and limitations, and of any areas to be reserved by deed covenant for common uses of all property owners;
U. Location and dimension of right-of-way, roads, cul-de-sacs, curb and gutter, and radii at intersections;
V. Location of 5 ft. sidewalks on both sides of the street;
W. Location of street lights;
X. Perpetual easements;
Y. Mapping of soils from USDA soil survey;
Z. Certificates, statements, and notes on checklist;
AA. Signed and dated Professional Engineer's seal;
BB. Organization to control portion or all of the tract;

9.34.4 Conformity of Final and Preliminary Plat

The final plat shall conform to the preliminary plat and it may constitute only that portion of the approved preliminary plat which the subdivider proposes to record and develop at any one time, provided that such portion conforms to the staging established in preliminary plat procedure and to the requirements of these rules and regulations.

9.34.5 Preliminary Plat Certificates

Each preliminary plat submitted to the City Council shall carry the following certificates printed or stamped thereon substantially as follows:

A. Preliminary engineering certificate
   I hereby certify that this proposed Development Plat correctly represents construction plans completed by me on _____/_____/_____, 20_____.
   By _____, Registered P.E., Surveyor or Landscape Architect
   Number _____
   Date _____/_____/_____
B. Certificate of preliminary plat approval
   All requirements of the city subdivision regulations relative to the preparation and submittal of a Preliminary Plat having been fulfilled, approval of this plat is hereby granted, subject to further provisions of said regulations. This Certificate shall expire _____/_____/_____.

Name _____
Mayor, City of Baldwin
Date _____ / _____ / _____

C. Development Plat—Not to be Recorded.

9.34.6 Final Plat Certificates

Each final plat submitted to the Public Works Director for approval shall carry the following certificates printed or stamped thereon substantially as follows:

A. Surveyor's certificate

It is hereby certified that this plat is true and correct and was prepared from an actual survey of the property made by me or under my supervision; that all monuments shown hereon actually exist or are marked as "Future," and their location, size, type, and material are correctly shown; and that all relevant requirements of the City of Baldwin Zoning Ordinance, Subdivision Regulations, and City of Baldwin, Georgia Minimum Development Standards Ordinance have been met.

By_____
Registered GA Land Surveyor
Number _____
Date _____ / _____ / _____

B. Owner's dedication certificate (when appropriate).

(STATE OF GEORGIA) or (CITY OF BALDWIN)

The owner of the land shown on this plat and whose name is subscribed thereto, and in person or through a duly authorized agent, acknowledges that this plat was made from an actual survey and dedicates to the use of the public forever, all streets, parks, drains, easements, and public grounds thereon shown, which comprise a total of _____ acres, for the purposes therein expressed.

Owner _____
Date _____ / _____ / _____

C. Place for approval of the county health department.

D. Place for approval of the Public Works Director as follows:

Pursuant to the City of Baldwin Subdivision Regulations, this plat is given final approval by the Baldwin City Council. All of the conditions of approval having been completed, this document is hereby accepted and this approval granted under the authority of said Regulations.

Name _____
Public Works Director
Date _____ / _____ / _____

9.35 Planned Development

A. The standards and requirements of this section may be modified in the case of a plan and program for a community or planned development which is not divided into customary lots, blocks and streets, which in the judgment of the city council provides adequate public spaces and improvements for the circulation, recreation, light, air and service needs of the tract when fully developed and populated, provided density standards for the entire tract are not

exceeded, and which also provides such covenants or other legal procedures as will assure conformity to the achievement of the plan. Plans for such development shall be submitted to and approved by the City Council whether or not such plat is to be recorded, and no building permit shall be issued until such approval has been given.

B. Prior to processing such a planned development, the developer shall indicate his willingness to increase the processing time specified. However, in no case shall the City Council authorize a use prohibited in the district in which the project is to be located, or a smaller lot area per dwelling unit than the minimum required in such district.

9.36 Minimum Design Standards

All subdivisions hereafter established shall be developed in accordance with the minimum design standards and requirements set forth in this section.

9.37 Suitability of Land

Land subject to flooding, improper drainage, erosion, or which is for topographical, geological or other reasons unsuitable for residential use, shall not be platted for residential use or for any other uses that will be a danger to health, safety, or property destruction, unless the hazards can be corrected. Determination will be made by study of topographic maps, inspection of the property and/or discussion in a meeting of the City Council.

9.38 Subdivision Name

The name of the subdivision must have the approval of the City of Baldwin. The name shall not duplicate or closely resemble the name of an existing subdivision.

9.39 Traffic Analysis

New developments that will generate a significant amount of traffic may be required to perform a traffic analysis. The City will review each proposed development on a case-by-case basis to determine if a traffic study is required. If the City deems the size of the project warrants a traffic study, then the developer shall have a qualified design professional perform a traffic study. Three (3) copies of the traffic analysis, if required, shall accompany the application for the proposed development.

Traffic studies shall describe the extent, nature, and location of traffic impacts for all property for which the application is being sought and further all contiguous property owned by the applicant. The study area shall include the entire site being developed, future phases of multi-phase development, and the surrounding roadways, which are likely to be significantly impacted. At a minimum, the surrounding roadways to be included are:

A. The expected routes of access to the site as far as the nearest major arterials serving the site from each direction nearest the site;
B. The routes and site access to major intersections expected to carry fifteen (15) percent of the project's traffic; and
C. Other roadways expected to carry 1,000 additional daily vehicles as a result of the development.

It is recommended that a preliminary traffic assignment be performed to establish the scope of study before beginning the inventory of existing conditions.

A traffic study shall include the following elements;

A. Conceptual plan or site plan of the proposed development;
B. Inventory of existing conditions including adjacent land users, existing peak hour volumes and turning movement data with six (6) months of applications data, levels of service for peak hour period, and existing problems of deficiencies in curvature, sight distance, drainage, etc.;
C. Trip generation;
D. Trip distribution;
E. Trip assignment;
F. Planned transportation improvements;
G. Identification of traffic impacts, problems, and deficiencies; and
H. Recommended transportation improvements and other impact mitigation measures, including but not limited to, entrance requirements, number of entrances, traffic circulation with the project, etc.

9.39.1 Trip Generation

The traffic study shall include trip generation data for each phase of the overall project.

Trip generation data shall include the total number of vehicles computed to be entering and exiting the development on an average weekday and during A.M. and P.M. peak hours. Trip generation rates will usually be based on the peak hour of adjacent roadways described in the latest edition of Trip Generation (ITE). If the planned development includes more than 250,000 square feet of retail space, include similar trip generation data for Saturdays. If the existing site is zoned for a use other than single-family residential, include trip generation data for the site developed as zoned.

Trip generation rates shall be taken from the latest edition of the ITE Trip Generation publication unless suitable documented local data are provided from the least three similar developments collected within the past five (5) years. Suitable documentation includes the type, location, and size of each development; the dates and hours of data collection; the availability of public transportation; and the vacancy rate for the development. Copies of actual trip data may be required.

Vehicle trips shall be computed by multiplying appropriate trip generation rates by the appropriate units for which the rates were intended. There are exceptions of this procedure:

A. When mixed-use developments are designed to encourage a significant number of internal trips, the total vehicle trips may be reduced by the estimated number of internal person trips, divided by the average auto-occupancy rate. The study must provide adequate published documentation or evidence of its assumptions concerning internal trips.

B. When retail developments are located along an arterial where a significant number of passerby traffic is reasonable, an appropriate adjustment may be made if adequate published documentation or evidence is provided in the study.

9.39.2 Trip Distribution

The trip distribution process will estimate the directional distribution of travel to and from the site for the approximate year of occupancy. Note that trip distribution for residential development (home-based work trip productions) and non-residential development (home-based work trip attractions) are different. Retail distribution process may be accomplished by one of three means:

A. Use appropriate trip distribution rates from trip tables prepared by State or Regional planning agencies; or
B. Prepare a custom trip distribution based on the "area of influence" method described in the American Planning Association publication Traffic Impact Analysis by Greenberg and Hecimovich (PAS Advisory Service Report No. 387,1984); or
C. Prepare another acceptable distribution and assignment using data approved in advance by the City of Baldwin or its representative in the preliminary conference.

9.39.3 Vehicle Trip Assignment

The traffic analysis study shall prepare vehicle trip assignments for peak hour period of times which represent the worst case in terms of the sum of existing traffic and the traffic generated by the overall proposed development. Normally this would be the P.M. peak hour. If the trip generation for the A.M. peak hour exceeds 75 percent of the traffic generated by the P.M. peak hour, then both A.M. and P.M. peak hour trip assignments shall be prepared. Two trip assignments shall be prepared for each peak hour period stipulated above:

A. Generated vehicle trips added to existing traffic assigned on the existing roadway system; and
B. Generated vehicle trips added to existing traffic and to traffic from other planned developments near the site, assigned on the system of existing roadways including recommended improvements; include other nearby large developments which have been rezoned or issued a development permit during the past 24 months. When information about nearby developments is not available, growth factors may be used to inflate existing traffic from other developments. Growth factors shall be computed from the forecast population and employment of the Census tract which include the site.

These trip assignments shall be prepared and illustrated for the internal roadways and driveways within the overall development, along with the surrounding roadways, intersections, and interchanges in the study area. Trip assignments will describe the peak hour directional vehicle volumes and turning movements at intersections.

9.40 Access

Access to every subdivision lot shall be provided from a public road or a common access driveway which meets the standards set forth in the driveway regulations. The City of Baldwin may control access to freeway, expressway, arterial, and collector roads by requiring all buildings to face and have access to only minor roads. In any subdivision not involving the

construction of new roads and in any minor subdivision, all new lots accessing a road designated as an arterial or collector shall have a minimum frontage of 150 feet.

9.41 Through Traffic
Minor streets shall be configured so that their use by through traffic will be discouraged.

9.42 Continuation of Existing Street Pattern
Whenever topography, ownership, and design objectives allow, the street pattern within a subdivision shall provide for the continuation or appropriate projection of the existing street pattern.

9.43 Conformance to Comprehensive Plan
All proposed subdivisions shall conform to the comprehensive plan and development policies in effect at the time of submission.

9.44 Reservation of Public Spaces
A. Where features of the comprehensive plan such as school sites, parks, streets other than local subdivision streets, or other public spaces are located in whole or in part in a proposed subdivision, or when these features have not been anticipated by the comprehensive plan and planning policy, but are considered essential by the City of Baldwin, such features may be dedicated, or in lieu of dedication shall be reserved by the subdivider. Whenever such reserved land, or any portion thereof, is not acquired, optioned, or condemned by the appropriate public agency within a six-month period from the date of recording the subdivision or by the next budget year, whichever is the longer period of time, the subdivider may claim the original reservation, or portion thereof, and cause it to be subdivided in a manner suitable to the subdivider, subject to the provisions of these rules and regulations.
B. The Public Works Director may waive the platting and reservation requirements whenever the public body responsible for land acquisition executes a written release stating that such a planned feature is not being acquired.
C. The City of Baldwin shall disapprove plats when such planned features, as specified by the comprehensive plan, are not incorporated into the plat.

9.45 Suitability of Land Dedicated for Public Use
Whenever the plat proposes the dedication of land to public use and the City of Baldwin finds that such land is not required or suitable for public use, the City of Baldwin may either refuse to approve said plat or he may require the rearrangement of lots to include such land.

9.46 Most Restrictive Standards Apply
Whenever there is a discrepancy between minimum standards or dimensions required herein and those contained in zoning regulations, the building code, or other official regulations or resolutions, the most restrictive shall apply.

9.47 Subdivisions Adjacent to or Containing Dams

The subdividing of land, any portion of which is or will be adjacent to a proposed or existing dam, shall be such that:

A. Subdivision lots shall have a minimum of 50 feet frontage on a street dedicated to public use which meets the requirements for acceptance into, or which is part of, the city road maintenance system.
B. Such lots shall be accessible by streets that meet the requirements for acceptance into, or which are currently part of, the city road maintenance system.
C. There shall be no lots which are accessible only by use of a street or streets which cross a proposed or existing dam.
D. No lot shall be allowed on any portion of an entire street which crosses a proposed or existing dam unless such lot fronts on a street which meets the requirements for acceptance into, or which is part of, the city road maintenance system.
E. There shall be no dwellings or other buildings designed for human occupancy below any dam within the breach floodway of the dam.

9.48 Construction of Streets on Railroad Rights-of-Way

The subdivider shall be responsible for obtaining all permits and paying all costs associated with the construction of a subdivision street on railroad rights-of-way.

9.49 Alternate Design Standards

Alternate design standards for subdivision streets shall be considered only in planned residential developments. Each alternate design must be justified in writing by the registered engineer, surveyor or landscape architect.

9.50 Subdivision Streets

Subdivision streets and rights-of-ways shall be designed and constructed in accordance with the streets and driveway specifications in this ordinance.

9.51 Water System Requirements

The standards listed herein are not intended to cover all aspects of design, but rather to mention the basic guidelines and requirements of the City of Baldwin. In addition to the design criteria presented herein, proposed public water systems shall meet all requirements of the Minimum Standards for Public Water Systems (Minimum Standards) published by Georgia EPD.

9.51.1 Preliminary Plan Review

Preliminary plans of proposed water and sanitary sewer systems shall be prepared and submitted for review to the City of Baldwin. Questions relating to availability of water and proposed locations of connections should be resolved at this stage before proceeding with final planning. A submittal for preliminary plan review shall include all land to be developed including land that is to be developed in several phases or units. Water capacity determinations will be made for the total project.

9.51.2 Final Plan Review

All final plans for public water facilities shall be submitted to the City and approved by the City Engineer and Public Works Director. The City of Baldwin has received approval from the Georgia Environmental Protection Division (EPD) for delegation of review and approval for limited water system additions.

9.51.3 Water Lines Along Public Right-of-Ways

A. Water lines within a Commercial, Industrial or Residential Subdivision shall be located within a ten foot permanent utility easement outside of the public right-or-way for right-of-ways 60 feet wide and less.
B. Water lines installed along existing roadways or along new roadways where right-of-way widths are 80 feet and wider will be allowed within the right-of-way of any roadway unless as determined by the City or GDOT there are compelling design or safety issues which would demand consideration of an alternate location.
C. Water lines installed inside the road right-of-way shall be located in the back five feet of the right-of-way unless existing utilities prohibit this.
D. GDOT should be contacted at the preliminary plan stage to determine the acceptability of locating water lines under the pavement and/or within the right-of-way of State roadways.

9.51.4 Easements

A. All easements shall allow adequate room to construct the water line and appurtenances. Permanent easements shall be a minimum of 20 feet wide except that when the depth of the water line exceeds ten (10) feet the required easement width shall increase such that the easement width is at least twice the depth from the ground surface to bottom of the pipe. Easements with more than one utility shall be wider as required by the City.
B. It shall be the responsibility of the Developer to obtain any off-site easements required to connect the project to the existing public water system.
C. Easements shall be conveyed to the City of Baldwin for all facilities that are to be dedicated to the City. Final plans cannot be approved until all necessary off-site easements have been submitted, approved and recorded.

9.51.5 Fire Flow and Pressure Test

A. A water flow test shall be performed on the existing water line nearest the proposed subdivision or development prior to submitting design drawings for approval to determine the adequacy of the existing water supply line for the project. The test shall consist of a fire hydrant pressure and flow test conducted per the National Fire Protection Association (NFPA) 291, Recommended Practice for Fire Flow Testing and Marking of Hydrants. A 24-hour pressure recording from this same point will also be required. The test results submitted to the City shall consist of:
    1. Static pressure and approximate elevation of the Static gauge.
    2. Residual pressure and recorded flow rate in gallons per minute (GPM) and approximate elevation of the Residual gauge.
    3. Projected flow at the test hydrant in GPM at 20 psi.
    4. 24-hour pressure chart

5. Site map including fire hydrant locations tested.

9.51.6 Fire Flow Requirements

A. An adequate supply of water to meet the instantaneous flow and peak domestic water demand requirements of the proposed project must be available prior to approval of any plans. Water systems shall be designed to provide fire flows in accordance with Insurance Services Office (ISO) requirements, plus the domestic demand required by the City. Residual pressures of not less than 20 pounds per square inch (psi) shall be maintained throughout the City's water distribution system during a fire flow event.

B. The minimum fire flows in the table below entitled Fire Flow Requirements for Single-Family Detached and Two-Family Dwellings apply to new development. Where the size and the scope of the development exceed these requirements, additional flow shall be provided in accordance with Insurance Services office (ISO) requirements.

C. Fire flow requirements may be met in single-family residential and two-family developments with a single hydrant within 300 or 500 feet hose lay of a structure in accordance with this table. In special circumstances, a written waiver from these requirements may be obtained from the Fire Chief and State Fire Marshall.

D. In areas of multi-use development, other residential (i.e., multi-family, condominium, townhouse), commercial, institutional, and industrial developments shall provide a fire flow in accordance with Insurance Services office (ISO) requirements.

Fire Flow Requirements for Single-Family Detached and Two-Family Dwellings

Unit to Unit Exposure Distance (Feet)	Flow Requirements per Hydrant (GPM)
0 to 10	1,500
10 to 30	1,000
Greater than 30	1,000

9.51.7 Hydraulic Design

A. All main lines of a public water system shall be a minimum of eight inches in diameter for mains along roadways that are not looped or connected at both ends to other portions of the public water system.

B. Water mains along roadways or interior streets that will allow the water lines to loop shall be a minimum of six inches in diameter.

C. Public water systems shall have an average pressure of 35 pounds per square inch at each meter and shall meet the requirements of the Instantaneous Water Demands for Residential Areas table, the requirements herein, and the Standard Details and Specifications for Construction of Water and Sewer Mains for the City of Baldwin. Developments that cannot meet these requirements shall design and fund improvements to the existing system that will enable the proposed development to meet said fire flow and average demand requirements.

D. The system shall be designed by a Professional Engineer licensed in the State of Georgia.

E. In accordance with plumbing code, pressure reducing valves are required on service lines entering a building to reduce high water pressure.

Instantaneous Water Demands for Residential Areas Table

Total Number of Lots Served	GPM
5	40
10	40
20	58
30	73
40	85
50	96
60	106
70	115
80	124
90	132
100	140
150	175
200	205
300	255
400	295
500	335
750	480
1,000	600

Source: Minimum Standards for Public Water Systems (Minimum Standards) published by Georgia EPD, latest edition.

9.51.8 Hydraulic Calculations

A. The Developer shall submit complete hydraulic calculations and computer generated modeling data for each proposed development. The calculations and hydraulic model shall include the items listed below.

1. Input
   a. State all source and assumptions made for input- i.e. C factors, demands, elevations, tank(s) elevations, fire flow desired, peak factors, etc.
   b. State how average and peak demands were determined
   c. State flow testing data that the model was calibrated by.
   d. State how model was calibrated.
   e. State how calculations were performed, i.e. which equations or which software.
2. Results
   a. Analysis should show at a minimum the following scenarios: 1) static conditions with pressures at all important nodes, 2) service pressure at all nodes during average flow- 3) service pressures at all nodes during peak flow 4) fire flow availability at each node keeping 20 psi at all nodes.

b. State the minimum pressure in the system during a peak and average demand that is spread appropriately throughout the system junctions. At what location is this minimum pressure?
c. Include an overall map of the developments water system that labels all junctions and pipe numbers indicated in the hydraulic model.
d. State at what location the maximum and minimum total flow available (fire flow) is while maintaining a 20 p.s.i. residual. What is the location of the 20 p.s.i. residual for these flows? What is this maximum and minimum flow in gallons per minute in the development?
e. State the engineering conclusion and recommendations.

9.51.9 Fire Hydrants and Valves

Fire hydrants shall be required for all subdivisions with water systems. Fire hydrants shall be located no more than 500 feet apart and at least six feet behind the curb or ditch line. To eliminate future street openings, all underground utilities for fire hydrants, together with the fire hydrants themselves and all other water supply improvements, shall be installed before any base course application of a street shown on the subdivision plat. All fire hydrants shall be set plumb with outlets 18 inches above finished grade or 12 inches above a finished concrete surface. No valves shall be located within the pavement or curb area.

9.52 Sanitary Sewer System Requirements

The standards listed herein are not intended to cover all aspects of design, but rather to mention the basic guidelines and requirements of the City of Baldwin. Sanitary Sewer Systems shall be designed in accordance with the Standard Details and Specifications for Construction of Water and Sewer Mains in the City of Baldwin. In addition to the design criteria presented herein, proposed public sanitary sewer systems shall meet all requirements published by Georgia EPD.

9.52.1 Connections to Public Sanitary Sewer Systems

Except as provided below, all proposed buildings within the City's corporate limits that requires sanitary sewerage facilities shall be connected to the public sanitary sewer system.
Waiver of the requirement to connect to public sanitary sewers will be considered on a case-by-case basis for non-subdivided, single-lot buildings when the nearest connection point to a public sanitary sewer is more than 200 feet from the property line, when such buildings are to be used for single-family dwelling or some other use where the wastewater loading is no more than that of a single-family dwelling. Requests for waiver must be accompanied by appropriate documentation as may be required by the County Health Department.

9.52.2 Design of Sanitary Sewer Systems

All improvements and extensions to the public sewer system shall be designed by a Professional Engineer licensed in the State of Georgia. Developments that only involve gravity sanitary sewers and small connections connecting sewers less than 1,000 linear feet may have plans and specifications prepared and stamped by a Registered Land Surveyor licensed in the State of Georgia.

9.52.3 Water and Sanitary Sewer System Design Approval

All water and sewer system construction plans and specifications shall be approved by both the City Engineer and Public Works Director. The City of Baldwin has received approval from the Georgia EPD for delegation of review and approval of certain types of public sanitary sewer system extensions.

9.52.4 Preliminary Plan Review

Preliminary plans of proposed water and sanitary sewer systems shall be prepared and submitted for review to the City of Baldwin. Questions relating to availability of sanitary sewers and proposed locations of connections should be resolved at this stage before proceeding with final planning. A submittal for preliminary plan review shall include all land to be developed including land that is to be developed in several phases or units. Water and sanitary sewer capacity determinations will be made for the total project.

9.52.5 Final Plan Review

All final plans for public sanitary sewer facilities shall be submitted to the City and approved by the City Engineer and Public Works Director.

9.52.6 Easements

A. All easements shall allow adequate room to construct the sanitary sewer line and appurtenances. Permanent easements shall be a minimum of 20 feet wide except that when the depth of the sewer line exceeds ten (10) feet the required easement width shall increase such that the easement width is at least twice the depth from the ground surface to bottom of the pipe. Easements with more than one utility shall be wider as required by the City.
B. It shall be the responsibility of the Developer to obtain any off-site easements required to connect the project to the existing public sewer system.
C. Easements shall be conveyed to the City of Baldwin for all facilities that are to be dedicated to the City. Final plans cannot be approved until all necessary off-site easements have been submitted, approved and recorded.

9.52.7 Georgia DOT and Railroad Permits

A. The Developer (not the City) shall prepare all plans, details, etc. required for submittal to DOT and the railroad company for encroachment permits in their respective right-of-ways. The Developer shall submit said plans and details to the City. The City or the City's representative will prepare and submit the required permit requests to these agencies with the plans and details provided by the Developer.
B. All costs for preparation and submittal of permits and all fees shall be paid by Developer.

9.52.8 Plan and Profiles

Profiles shall have a horizontal scale of not more than 1"=100' for cross-country lines and 1"=50' for (existing and proposed) developed areas, and a vertical scale of not more than 1"=10'. The plan view shall be drawn to the corresponding horizontal scale. The plan view shall normally be shown on the same sheet as the profile. In any case, both the plan and profile view shall have line designations, station numbers, manhole numbers and any other indexing

necessary to easily correlate the plan and profile view. The vertical datum used should be the elevation above mean sea level with benchmarks shown on the plans and the horizontal datum should be tied to State Plane coordinates. Plans and profile shall show location of streets, storm sewer, water lines, all other utilities and their easements.

9.52.9 Crossing Streams and Standing Bodies of Water

A. Sewer lines crossing streams or standing bodies of water, both above and under water, present special problems, and should be discussed with the City's Engineer and Public Works Director before final plans are prepared.
B. Aerial crossings of sewers laid on piers across ravines or streams shall be allowed only when it can be demonstrated that no other alternative exists.

9.52.10 Sanitary Sewers Adjacent to State Waters

Cross-country sanitary sewers adjacent to state waters shall be designed and constructed to comply with the buffer requirements, including Georgia DNR Rules 391-3-7, the Georgia Erosion and Sediment Control Act OCGA 12-7-1, and any other ordinances the City of Baldwin. In cases where these regulations differ, the most protective (greatest distance from the edge of the stream) will serve as the standard. Sanitary sewers crossing streams shall be kept to a practicable minimum. Where sewers parallel state waters, the sewers and their respective easements shall be located outside the buffer area. Reasons for requesting sewer lines to be located within stream buffers shall be provided in the preliminary plan application and a Stream Buffer Variance application must be made by the Developer to Georgia EPD.

9.52.11 Sanitary Sewer Design Calculations

A. Sanitary sewer design calculations shall be submitted for all proposed mains and pump stations as part of the development plan submittal according to the items below.
    1. Gravity sewer mains shall be no less than 8" diameter.
    2. Sanitary sewer service laterals shall be no less than 6" diameter.
    3. New residential sanitary sewer systems shall be designed on the basis of an average daily flow of sewage of not less than 200 gallons per household per day.
    4. Peak factors for residential sanitary sewers shall be no less than 2.5 times the average flow. Peak factors for commercial and industrial areas shall be a minimum of 3.0 and a maximum of 4.0. Peak factors for educational and government/institutional areas shall be a minimum of 4.0 and a maximum of 6.0.
    5. Sanitary sewers shall be designed to carry the peak flow when flowing at a depth of 70% of the pipe diameter.
    6. All sanitary sewers shall be so designed and constructed to give mean velocities, when flowing full of not less than two (2) feet per second. The table below indicates the minimum slopes allowable by the City of Baldwin, which allow for slopes greater than 2 feet per second.

Pipe Size (inches)	Minimum Slope (%)
8	0.50
10	0.40
12	0.30
15	0.22
18	0.15
21	0.12
24	0.10
27	0.08
30	0.07
36	0.06

7. Where velocities greater than 15 feet per second are attained, special provision should be made to protect against displacement by erosion and impact.

9.52.12 Sanitary Sewer Pump Stations

A. The following minimum requirements apply to the design of sanitary sewer pump stations.
   1. Pump stations having less than 500 gpm capacity (per pump) shall utilize two submersible centrifugal pumps each having a capacity equal to the design flow. Pump stations having a capacity of 500 gpm or more shall be reviewed on an individual basis and may have requirements differing from those outlined herein.
   2. Force mains shall be sized to provide a velocity of at least three (3) feet per second.
   3. The design shall allow for removal of any pump or equipment item without the need to shutdown the entire lift station. Lift assembly shall be provided for pump or equipment removal.
   4. The Design Engineer shall consult with the City Engineer and Public Works Director after preliminary design data has been developed for information on approved pump manufacturers. The City reserves the right to review each application on an individual basis and to reject the use of non-approved manufacturers.

9.52.12.1 Sanitary Sewer Pump Station Plan and Design Requirements

A. Construction plan submittals shall include the following pump station information:
   1. System head calculations; tabulated and plotted on the pump curve, along with a plot of force main velocity.
   2. Standard drawings, details and specifications sufficient to ascertain compliance with these regulations.
   3. Calculations showing determination of wet well volume and cycle time at design conditions. Wet well volume should be sufficient to provide a cycle time of no less than ten (10) minutes from a pump "on" to the next pump "on" time. In addition to short cycles, the Design Engineer should ensure that cycle times will not be too long and create a nuisance condition.
   4. Backup power shall be provided for pump stations in the event of a power outage.
   5. Buoyancy calculations showing that structures are protected against flotation.

B. Shop Drawings
   1. After construction plan approval, but before purchasing any pump station equipment, shop drawings shall be submitted to the City including the following information:

a. Manufacturer's catalog sheets, performance curves, installation drawings, specifications and list of options for the specific pump that is offered for approval.
b. Similar catalog data for controls, valves, hatches, yard hydrants, pre-cast wet well and other manufactured items.

C. Certification
1. After installation and before placing the system into full operation, the work must be inspected by the Developer's Engineer who must then issue a certification to the City verifying that all work has been complete in accordance with approved plans. This certification shall include all construction of the lift stations and force mains. After acceptance of the work by the Engineer, a factory representative shall inspect and start up the system certifying rotation, capacity, amperage draw, lack of vibration and other standard checks. This certification shall state the beginning date of the warranty and include a copy of the warranty. The pump shall have a minimum manufacturer's warranty of five (5) years with no prorating.
2. After start up by the manufacturer's representative but before the pump station is placed into service the City's Engineer shall conduct pump performance and draw down tests to verify the pump station performs as designed. The Developer's Contractor shall provide all technical support required by the City Engineer including provisions to fill the wet well for pump testing with potable water. Sewerage shall not be used for these tests.

D. Operation & Maintenance Manuals
1. On or before the date of start-up, two (2) hard copy sets and one (1) digital copy in portable document format (pdf) of factory O & M Manuals shall be delivered to the Public Works Director. These manuals shall include the name of the purchaser, the serial numbers of pumps, detailed wiring schematics, telephone number and address for purchase of parts.

9.53 Stormwater Management Facilities

A. Construction and Design Standards
1. The stormwater drainage system and easements shall be separate and independent of any water or sanitary sewer system and associated easement.
2. Storm drain hydrology shall be designed by the rational method for drainage areas of 500 acres or less, and by the Soil Conservation Service method for drainage areas exceeding 500 acres. Other methods require prior approval by the City of Baldwin. A copy of design computations for 25 year storms shall be submitted along with the construction plans. Inlets shall be provided so that surface water is not carried for a distance of more than 500 feet in the gutter. When calculations or street design indicate that curb capacities are exceeded at a point, no further allowance shall be made for flow beyond that point, and basins shall be used to intercept flow at that point. All turnarounds shall require standard 6-inch vertical curb section for negative grades. All streets with curb and gutter shall have standard 6-inch vertical curb.
3. When storm drain pipe is required, it shall extend along the right-of-way to a natural and adequate drainage way or otherwise along an easement to the rear property lot boundary, subdivision boundary, 200 feet from the right-of-way or 25 feet beyond the rear setback of the adjoining lot.

4. Storm drainage conveyance systems shall be designed in accordance with the Stormwater Conveyance Systems section of this ordinance.
5. Stormwater management facilities shall be designed in accordance with the Stormwater Management section of this ordinance.
6. The stormwater management and conveyance systems shall be designed by a Professional Engineer licensed in the State of Georgia.

B. Drainage of Springs or Surface Water

The applicant will be required to drain via pipe any spring or surface water that may exist either previously to or as a result of the subdivision. Such drainage facilities shall be located or in perpetual unobstructed easements (minimum width 20 feet) and shall be constructed in accordance with the construction standards and specifications.

C. Accommodation of Upstream Drainage Area

A culvert, cross drain, or other drainage facility shall in each case be large enough to accommodate potential runoff from its entire upstream drainage area whether inside or outside of the subdivision. The City of Baldwin shall approve the necessary size of the facility which has been designed based on a 25-year storm or 100 year storm depending on the type and location of the drainage facility and on the provisions of the construction standards and specifications assuming conditions of maximum potential development density permitted by the zoning ordinance.

D. Effect on Downstream Drainage Areas

1. A hydrologic study shall be required to determine the effect of the subdivision on existing downstream drainage facilities outside the area of the subdivision improvements. Where it is anticipated that the additional runoff due to the development of the subdivision will overload an existing downstream drainage facility, the City of Baldwin may withhold approval of the subdivision until provision has been made for the improvement of said potential condition in such sum as the City of Baldwin shall determine.
2. No preliminary plans for subdivision streets shall be approved unless adequate drainage will be provided to an adequate watercourse or facility.

E. Drainage Easements Required

Where a subdivision is traversed by a watercourse, drainage way, channel, or stream, a stormwater easement or drainage right-of-way conforming substantially to the lines of such watercourse, shall be provided of such width and construction or both as will be adequate for the purpose. Whenever possible, it is desirable that the drainage be maintained by an open channel with grassed or landscaped banks and adequate width for maximum potential volume of flow.

F. Dedication of Drainage Easements

1. Where topography or other conditions are such as to make impractical the inclusion of drainage facilities within road right-of-way, perpetual unobstructed easements at least 20 feet in width for such drainage facilities shall be provided across property outside the road lines and with satisfactory access to the road. Easements for all stormwater outlets shall be indicated on the plat. Drainage easements shall be carried from the road through a natural or constructed watercourse or to other drainage facilities.

2. The applicant shall dedicate, by drainage or conservation easement of land on both sides of existing watercourses, for a distance of ten feet on each side or wider as determined by the City of Baldwin.
3. Low-lying land along watercourses subject to flooding or overflowing during storm periods, whether or not included in areas for dedication, shall be preserved and retained in their natural state as drainage ways.

G. New or Existing Lake

If it is proposed to make a new or existing lake a part of a subdivision, or if the subdivision is located downstream from a water impoundment, the Developer shall be required to submit a breach analysis and show the dam breach zone on the plans.

9.54 Required Improvements

No improvements may be made before the preliminary plat is accepted and approved by the City of Baldwin. All improvements shall meet the minimum standards set forth in this section.

9.55 Street Improvements

All street construction shall be in accordance with the streets section of this ordinance.

A. On-Site Inspection

All construction may be tested following on-site inspection as determined necessary by the City of Baldwin. Should the City of Baldwin determine that laboratory analysis and/or testing procedures are required to evaluate the quality and/or quantity of a particular improvement, the City of Baldwin shall be authorized to employ a recognized consultant or a recognized testing laboratory or testing service to conduct any necessary examinations. All reports shall be made in writing to the City of Baldwin and the Owner of the subdivision. Following the collection of samples, the Owner shall repair all deficiencies

B. Inspection Cost

The Owner of the subdivision shall bear all expense of all testing or examination of street improvements.

C. Delay of Installation of Paving

Paving shall be completed under one of the two options listed below:

1. Application of the bituminous plant mix surface may be completed before the filing of a final plat;
2. Application of the bituminous plant mix surface may be delayed because of unsuitable weather until no later than June 1 of the year following the filing of the final plat if the final plat is submitted for approval after October 1 of the first year; provided that all other required improvements, including grassing, shall be completed prior to approval of the final plat. In such case, the subdivider shall present to the City of Baldwin an improvement guarantee in the form of a signed contract with a known Contractor for paving and a surety or escrow agreement payable to the City for the cost of the paving, not less in amount than the average City contract price for the paving established by the Georgia Department of Transportation or the contract price, whichever is greater. The City of Baldwin shall approve the amount and may increase the amount for increases due to normal inflation. The City of Baldwin may require that paving be completed at the first instance of suitable weather and availability of paving materials.

9.56 Completion of Water and Sanitary Sewer Improvements
All work on water and sewer systems except final individual service connections shall be completed prior to the filing of the final plat. All installations under the proposed pavement surface shall be completed prior to the application of the base course.

9.57 Approval of Water and Sewer Improvements
Approval from the City of Baldwin of all required testing shall be obtained prior to final plat approval.

9.58 Notification of Utility Owners Prior to Completion of Street Grading
All utility service shall be determined by the Developer prior to the completion of street grading. The Developer shall notify each affected utility owner of his contracted agreement so that the utility owners may coordinate their development schedules.

9.59 General Lot Specifications
All lots shall conform to the provisions of the City zoning regulations, specifically those provisions governing minimum area, frontage, and setbacks. The lot arrangement shall be such that there will be no foreseeable difficulties, for reasons of topography or other conditions, in securing building permits to build on all lots in compliance with City regulations and in providing driveway access to buildings on such lots from an approved street.

9.60 Lot Dimensions
Lot dimensions shall comply with the minimum standards of the zoning regulations. All lots approved under these regulations shall front on a publicly dedicated road. Where lots are more than double the minimum required area for the zoning district, the City of Baldwin may require that such lots be arranged so as to allow further subdivision and the opening of future streets where they would be necessary to serve such potential lots, all in compliance with the zoning ordinance and these regulations. In general, side lot lines shall be at right angles to street lines (or radial to curving street lines) unless a variation from this rule gives a better street or lot plan. Dimensions of corner lots shall be large enough to allow for construction of buildings, observing the minimum front-yard setback from both streets. Depth and width of properties reserved or laid out for business, commercial, or industrial purposes shall be adequate to provide for the off-street parking and loading facilities required for the type of use and development contemplated, as established in the zoning regulations.

9.61 Flag Lots
The minimum required lot frontage as established by the city zoning regulations shall be maintained as the minimum lot width for all of that portion of the lot between the front property line (frontage) and the actual building site on the lot, even if the building site is a greater distance from the front property line than the minimum required front setback.

9.62 Double Frontage Lots

Double frontage lots shall be prohibited except where necessary to provide separation of residential development from arterial thoroughfares or to overcome specific disadvantages of topography and orientation. Double frontage lots which are necessary shall be required to have a no-access easement across them, preventing access to arterial or collector streets.

9.63 Burying Debris and Waste Under Roadway or Within Right-of-Way

No cut trees, timbers, debris, rocks, stones, junk, rubbish, or other waste materials of any kind shall be buried in any area of the right-of-way or under any roadway fill sections.

9.64 Preservation of Natural Features, Historic Sites and Other Amenities

Existing features which would add value to residential development or to the City as a whole, such as watercourses and falls, historic sites, and similar irreplaceable assets, shall be preserved in the design of the subdivision. Any such historic sites must be listed on the National Historic Register.

9.65 General Requirements of Nonresidential Subdivisions and Planned Developments

A. If a proposed subdivision includes land that is zoned for commercial or industrial purposes or is a planned development, the layout of the subdivision shall conform to these regulations.
B. A nonresidential subdivision or planned development shall also be subject to all of the requirements of site plan approval set forth in these subdivision regulations and the zoning ordinance. Site plan approval and nonresidential subdivision plat approval may proceed simultaneously at the discretion of the City of Baldwin. A nonresidential subdivision and planned development shall be subject to all the requirements of these regulations and the City of Baldwin, Georgia Minimum Development Standards Ordinance as well as such additional standards required by the City of Baldwin, and shall conform to the proposed land use and standards established in the land use plan and zoning ordinance.

9.66 Specific Standards of Nonresidential Subdivisions and Planned Developments

In addition to the principles and standards in these regulations, which are appropriate to the planning of all subdivisions, the applicant shall demonstrate to the satisfaction of the City of Baldwin that the street, parcel, and block pattern proposed is specifically adapted to the uses anticipated and takes into account other uses in the vicinity. The following principles and standards shall be observed:

A. A preliminary plat of a planned development shall conform in all respects with the approved master development plan for the project and any conditions associated with the planned development zoning.
B. Proposed industrial parcels shall be suitable in area and dimensions to the types of industrial development anticipated.
C. Street rights-of-way and pavement shall be adequate to accommodate the type and volume of traffic anticipated to be generated thereupon.
D. Special requirements may be imposed by the City with respect to street, curb, gutter, and sidewalk design and construction.

E. Special requirements may be imposed by the City with respect to the installation of public utilities, including water, sewer, and stormwater drainage.
F. Every effort shall be made to protect adjacent residential areas from potential nuisance from a proposed commercial or industrial subdivision, including the provision of extra depth in parcels backing up on existing or potential residential development and provisions for a permanently landscaped buffer strip when necessary.
G. Streets carrying nonresidential traffic, especially truck traffic, shall not normally be extended to the boundaries of adjacent existing or potential residential areas.

9.67 Construction Schedule

9.67.1 Prerequisites Prior to Construction

No construction activity of any kind, including grading, installation of improvements, or building shall begin on any land subject to these regulations without prior approval of the preliminary plat and construction plans. A preconstruction meeting shall be required between the City and the Developer after preliminary plat approval and prior to any construction activity.

9.67.2 Grading

Grading or land disturbing activities may commence only after the soil erosion permit is approved.

9.67.3 Utilities

Utility installation shall not occur until the City of Baldwin has approved the rough grade of the street and shoulder preparation.

9.67.4 Inspections

Periodic inspection during the installation of the required improvements in a subdivision shall be made by the City of Baldwin to ensure conformity with the approved plans and specifications. The subdivider shall notify the Public Works Director or his designee at least 24 hours before an inspection is needed prior to each phase of the installation of improvements.

9.68 Recording of Final Plat Required Prior to Sale or Transfer of Lots

No lot or parcel of land shall be sold or transferred or a building permit issued until the final plat, of which said lot or parcel is a part, shall have been approved and recorded as provided for in these regulations.

9.69 Recording of Final Plat Required Prior to Issuance of Building Permits

The City Building Official shall not issue any permit for the construction of any building or structure to be located in any subdivision, a plat whereof is required to be recorded pursuant to the provisions of these regulations, until such plat shall have been approved and recorded as provided for in these regulations.

9.70 Completion of Improvements Required Prior to Occupancy

Within each phase of development, no building may be occupied for dwelling or other purposes nor shall an occupancy permit be issued for any building until all streets and required utility installations, including the water supply and sanitary sewer systems, have been completed to the satisfaction of the Public Works Director and the building official.

9.71 Amendments

The Baldwin City Council may from time to time recommend amendments to these subdivision regulations. Prior to acting on any proposed amendment, the City Council shall hold a public hearing on the amendment with 2 readings, having first published a notice of the time and place of the hearing in a newspaper of general circulation in the county at least 15 days prior to the hearing.

9.72 Appeals on Plat Approval

Appeals from decisions of City of Baldwin regarding preliminary plat approval and final plat approval shall be taken to the City Council. All appeals shall be filed with the appropriate body within 30 days of a decision.

9.73 Modification of Standards

9.73.1 Permitted Modifications

Where the City of Baldwin finds that extraordinary hardships or practical difficulties may result from strict compliance with these regulations and/or the purposes of these regulations may be served to a greater extent by an alternative proposal, it may approve modifications to these subdivision regulations so that substantial justice may be done and the public interest secured; provided that such modification shall not have the effect of nullifying the intent and purpose of these regulations; and further provided that the City of Baldwin shall not approve modifications unless it shall make findings based upon the evidence presented to it in each specific case that:

A. The granting of the modification will not be detrimental to the public safety, health, or welfare or injurious to other property;
B. The conditions upon which the request for a modification is based are unique to the property for which the modification is sought and are not applicable generally to other property;
C. Because of the particular physical surroundings, shape or topographical conditions of the specific property involved, a particular hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations were carried out;
D. The modifications will not in any manner vary the provisions of the zoning ordinance.

9.73.2 Approval with Conditions

In approving modifications, the City of Baldwin may require such conditions as will, in its judgment, secure substantially the objectives of the standards or requirements of these regulations.

9.73.3 Petition for Modification

A petition for any such modification shall be submitted in writing by the subdivider at the time when the preliminary plat is filed for the consideration of the City of Baldwin. The petition shall state fully the grounds for the application and all of the facts relied upon by the petitioner and be accompanied by a plat or plan showing the proposed modification.

9.73.4 Review of Modification

The City of Baldwin shall review the proposed modification and may request the review of any applicable agency.

9.73.5 Action by City of Baldwin

The City of Baldwin shall act upon the application in a regularly scheduled council meeting, shall enter its action into its records and shall notify the applicant in writing.

9.74 Fees

See Appendix C for City of Baldwin Plan Review and Inspection Fee Schedule. The fee schedule may be amended by resolution passed by the City Council in a public council meeting.

9.74.1 Preliminary Plat

A fee as established in the City of Baldwin Plan Review and Inspection Fee Schedule will be charged per linear foot of a proposed street and sanitary sewer lines in addition to fees required by plan review and EPD for soil, erosion and sedimentation control. From time to time, upon the recommendation of the Public Works Director and approval of the Baldwin City Council, said schedule may be revised as deemed necessary.

9.74.2 Final Plat

A fee as established in the City of Baldwin Plan Review and Inspection Fee Schedule will be charged. This review fee allows for an initial review of the final plat and associated stormwater as-builts as well as an additional fee for final plats and associated stormwater as-builts that require second and subsequent reviews to ensure that the redlined comments have been addressed. From time to time, upon the recommendation of the Public Works Director and approval of the Baldwin City Council, said schedule may be revised as deemed necessary.

9.74.3 Extension of Time Limit on Preliminary Plat

A fee as established in the City of Baldwin Plan Review and Inspection Fee Schedule will be charged for an extension of time limit on a preliminary plat per linear foot of a new street proposed. From time to time, upon the recommendation of the Public Works Director and approval of the Baldwin City Council, said schedule may be revised as deemed necessary.

9.74.4 Appeals

A fee as established in the City of Baldwin Plan Review and Inspection Fee Schedule will be charged for appeals to the Baldwin City Council of any City of Baldwin decision on the regulations of this section. From time to time, upon the recommendation of the Public Works

Director and approval of the Baldwin City Council, said schedule may be revised as deemed necessary.

9.75 Enforcement, Violation, and Penalty

9.75.1 Enforcement Official
It shall be the duty of the City of Baldwin to enforce these regulations and to bring to the attention of the city attorney any violations or lack of compliance herewith.

9.75.2 Unlawful Transfer of Title
No owner, or agent of the owner, of any parcel of land located in the subdivision proposed shall transfer title to any such parcel before a plat of such subdivision has been approved by the City of Baldwin, in accordance with the provisions of these regulations, and filed with the Clerk of Superior Court.

9.75.3 Denial of Building Permit
No building permit shall be issued for the construction of any building or structure located on a lot or plat subdivided or sold in violation of the provisions of these regulations.

9.75.4 Civil Enforcement
Appropriate actions and proceedings may be taken by law or in equity to prevent any violation of these regulations, to prevent unlawful construction to recover damages, to restrain, correct, or abate a violation, or to prevent illegal occupancy of a building, structure or premises, and these remedies shall be in addition to the penalties described in this section.

9.75.5 Penalty
Any person, firm, corporation, association, partnership, or proprietorship violating any provision of this section as the same exists or as it may hereinafter be amended, or shall fail to do anything required by this title as the same exists or as it may hereafter be amended, shall be guilty of a misdemeanor, amenable to the process of the Baldwin Municipal Court and upon conviction, shall be punished as provided in the City of Baldwin, Georgia Minimum Development Standards Ordinance for each violation in the discretion of the court.

9.76 Installation and Maintenance of Custom Support Signage Assemblies on City Right-of-Way

9.76.1 Purpose
The purpose of this section is to allow a duly constituted maintaining authority the privilege to install and maintain custom support traffic sign assemblies within the maintaining authority's designated subdivision. Permission shall be granted by the City of Baldwin.

9.76.2 Designation of Maintaining Authority
During residential subdivision construction and/or prior to the legal formation of a homeowners association, the developer will be the maintaining authority.

9.76.3 Responsibilities of Maintaining Authority

The maintaining authority will assume all costs associated with the installation and maintenance of custom support traffic sign assemblies within the maintaining authority's jurisdiction.

9.76.4 Liability

The maintaining authority willfully accepts any and all liability that may arise from the use of custom support traffic sign assemblies. The maintaining authority also agrees to hold harmless City of Baldwin and duly authorized representatives from any and all liability that may be incurred from the use of custom traffic sign assemblies.

9.76.5 Regulations for the Installation of Custom Support Traffic Sign Assemblies

A. The restrictive covenants of the development must express the maintaining authority's responsibilities associated with the installation and maintenance of custom support traffic sign assemblies.
B. The final plat of the subdivision must contain a provision signed by the Developer which notifies all property owners of their responsibility for the installation and maintenance of custom support traffic sign assemblies.
C. Street name signs must utilize the standard vane height of 6 ¾ inches be of fixed length with a maximum of 48 inches. Street name signs may be installed on top of the appropriate intersection traffic control signage. The three-eighths-inch white reflective stripe on top and on bottom must remain visible.
D. Sign poles or posts must be of "breakaway" or other design which meets the requirements of Chapter 7 of the American Association of State Highway and Transportation Officials (AASHTO), "Standard Specifications for Highway Signs, Luminaries, and Traffic Signals." A list of supports which meet these standards can be obtained by contacting the Atlanta office of the Federal Highway Administration. It is the responsibility of the maintaining authority to provide documentation to the City of Baldwin Public Works Director of the Federal Highway Administration's approval of the proposed signage supports.
E. A detailed plan for each sign assembly depicting typical installation, pole or post type, sign type and size, and FHWA approval must be provided to and approved by the City of Baldwin prior to installation.
F. All signs must meet the requirements outlined for construction and installation in the current edition of the Manual on Uniform Traffic Control Devices.
G. Prior to the installation of any signage assemblies, the locations must be marked by the maintaining authority and reviewed by the City of Baldwin. Failure to have locations reviewed may result in signage relocation at the maintaining authority's expense.

9.76.6 Regulations for the Maintenance of Custom Support Traffic Sign Assemblies

A. The maintaining authority understands that periodically signs are damaged, vandalized, stolen, or deteriorate. The following maintenance schedule must be followed:
    1. Stop signs must be replaced within one day.
    2. Other regulatory signs must be replaced within one week.
    3. All other signs must be replaced within three weeks.

B. It is recommended by the City of Baldwin that the maintaining authority stock a supply of all utilized signs, especially "Stop" signs and poles or posts to facilitate timely maintenance.

9.76.7 Inspections

City of Baldwin will make periodic inspections for substandard signage assemblies. If found, the maintaining authority will be notified. If the maintaining authority fails to replace the defective signs and/or supports within the time constraints outlined above, City of Baldwin will install city standard sign assemblies and bill the maintaining authority for materials and labor.

9.76.8 Failure to Adequately Maintain the Signage Assemblies

If the maintaining authority fails to adequately maintain the signage assemblies within its jurisdiction, City of Baldwin may revoke the permit and assume maintenance of all affected signage. Once the permit has been revoked and City of Baldwin has assumed maintenance, all custom support signage assemblies will be removed and replaced with standard signage assemblies. The cost for this process will be assessed to the maintaining authority.

9.76.9 Request to Relinquish Maintenance of Custom Supports and Signage Assemblies

If the maintaining authority wishes to relinquish maintenance of custom supports and signage assemblies, a written request with a petition signed by 70 percent of the maintaining authority's membership shall be provided to the Public Works Director. The request will be evaluated and along with a recommendation forwarded to the Baldwin City Council for consideration. If approved, City of Baldwin will remove all custom signage support assemblies and install City of Baldwin standard signage assemblies. The cost for this process will be assessed to the maintaining authority.

9.76.10 Authorization to Remove Signage

Any signage that has been installed by City of Baldwin may not be removed and/or replaced by the maintaining authority without authorization from the Public Works Director.

Responsible Government Agency

The responsible government agency and its location is as follows:
City of Baldwin
Attn: Public Works Director
186 US Hwy 441
P.O. Box 247
Baldwin, GA 30511-0247

10.0 Developments of Regional Impact

10.1 Purpose

The Georgia Planning Act authorizes the Department of Community Affairs (the Department) to establish specific thresholds, rules, and procedures for Developments of Regional Impact (DRI) that are applicable to all local governments and Regional Commissions in Georgia.
The purpose of this section is:

A. To improve local, regional, and state level communication about new growth in the state.
B. To maximize the positive benefits of new development projects while minimizing their adverse effects.

10.2 Rules

The rules require that:

A. City of Baldwin considering action on any development project that may meet or exceed the thresholds specified in this section must submit the project to their Regional Commission for determination of whether it is a DRI.
B. If the Regional Commission determines that the project is a DRI, the project must be handled in accordance with the procedures outlined in this section.
C. City of Baldwin may not take final action approving the project while the DRI process is ongoing.
D. The Regional Commission will manage the distribution of information about the project to neighboring jurisdictions, potentially affected parties, and State entities and will coordinate a process guaranteeing those jurisdictions, parties, and entities an opportunity to provide official comment upon projects that may impact them.
E. Upon the request of the City, the Regional Commission may evaluate the development project for its local impacts, economic benefits, potential effects on neighboring jurisdictions, consistency with quality growth principles and/or considerations identified in the Regional Commission's Regional Plan.
F. At the completion of the DRI process, which shall not last more than 30 calendar days (unless process extensions are taken as provided for in this section, the Regional Commission will assemble a report including comments received from neighboring jurisdictions, potentially affected parties, and State entities along with the results of any analysis it may have been requested to conduct pursuant to this section, including any recommendations for maximizing potential positive outcomes and economic benefits, reducing potential adverse interjurisdictional impacts and other suggestions for improvement of the project. City of Baldwin is encouraged to consider the contents of the DRI report in making its decisions related to the project.
G. These rules and regulations may from time to time be revised by the Department pursuant to the Administrative Procedure Act. The Department is the final authority for interpretation of these rules.

10.3 Definitions

Affected Parties means: 1) any local governments within geographic proximity that may be impacted by a DRI project located outside of its jurisdictional limits; and 2) any local, state, or federal agencies including the Department that could potentially have concern about a project's impact on regional systems and resources; and 3) the host Regional Commission plus any Regional Commission within geographic proximity that could potentially have concern about a

project's impact on regional systems and resources. This term should be liberally construed to ensure that all potentially affected local governments, public agencies, or Regional Commissions are included in the DRI Communication Procedures.
Airport is land areas and related facilities that are maintained for the landing and takeoff of aircraft and for receiving and discharging passengers and/or cargo.
Asphalt Plant and Concrete Plant are facilities that produce asphalt and concrete including a ready-mix concrete plant.
Attractions and Recreational Facility are an establishment or set of establishments that provide leisure time recreational or entertainment activities occurring in either an indoor or outdoor setting.
Commercial is activity within land areas that are predominantly associated with the sale of goods and/or services.
Council is the Board of Directors of a Regional Commission as per O.C.G.A. 50-8-32.
Days is calendar days.
Department is the Department of Community Affairs.
Final Action is a vote by the governing authority of the City that is considering action on a proposed project.
*Gross Square Footage i*s the total area of each floor of a building, measured from the exterior faces of the exterior walls or from the centerline of a wall separating two buildings. The gross square footage measurement is exclusive of areas of unfinished basements, unfinished cellars, unfinished attics, attached or detached garages, space used for off street parking or loading, breezeways, enclosed or unenclosed porches and accessory structures.
Hospital and Health Care Facility is a structure, or set of structures, primarily intended to provide health care services for human in-patient medical or surgical care for the sick and injured.
Hotel is an establishment that provides temporary lodging and may also provide food and beverage service, entertainment, and/or convention services.
Housing is land area used predominantly for residential purposes, including one family, two family, and multiple family dwellings.
Incomplete Portion of the Project is any part of a development project that is not completed to the point of being ready for occupancy or, if applicable, the final certificate of occupancy has not yet been issued by the City.
Industrial is activity within land areas predominantly connected with manufacturing, assembly, processing or storage of products.
Interjurisdictional is among two or more local governments or Regional Commissions.
Intermodal Terminal is an area and building where the mode of transportation for cargo or freight changes and where the cargo and freight may be broken down or aggregated in smaller or larger loads for transfer to other land based vehicles. Such terminals do not include airports or seaports or facilities primarily intended for the transfer of people from passenger rail to other modes.
Local Government is any county, municipality, consolidated government or other political subdivision of the state.
Metropolitan is all local governments located within counties with a population of 50,000 persons or more, according to the most recent U.S. Census.
Mixed Use is a type of development that is comprised of multiple land uses (e.g. commercial, residential, office, etc.) which may also include multiple density and intensity of each use.

Non-metropolitan is all local governments within counties with a population less than 50,000 persons according to the most recent U.S. Census.
Office is a building(s) wherein services are performed involving predominantly administrative, professional, or clerical operations.
Petroleum Storage Facility is a facility used to store gasoline, motor fuel, or other petroleum products.
Post-Secondary School is a facility (buildings, open space, dormitories, recreational facilities, and parking) of public and private vocational and technical schools, and colleges and universities.
Project is any proposed development.
Quarry is an open excavation used for obtaining building stone, slate, or limestone.
Redevelopment is new construction, possibly including clearing or rehabilitation of existing structures, on a site that was previously developed.
Regional Commission is a regional commission established under O.C.G.A. 50-8-32.
Regionally Important Resource is any natural or cultural resource area identified for protection by a Regional Commission following the minimum requirements established by the Department.
Regional Plan is the comprehensive plan for a region prepared by the Regional Commission in accordance with the requirements established by the Department.
Regional Resource Plan is a plan for management and protection of the Regionally Important Resources in the region, developed by the Regional Commission following the procedures established by the Department.
Threshold is a level of development beyond which a project is likely to affect areas or regions outside the boundaries of the local government in which the project occurs.
Truck Stop is an establishment that provides fuel, parking, and related goods and services to primarily support interstate truck transportation. Such facilities do not include convenience stores that have the primary purpose of selling goods and services to support the traveling public.
Waste Handling Facility is a structure or system designed for the collection, processing or disposal of solid waste, including hazardous wastes, and includes transfer stations, processing plants, recycling plants, and disposal systems.
Wastewater Treatment Facility is a structure or system designed for the treatment of sewage. This definition does not include septic tanks.
Wholesale and Distribution is activity within land areas that are predominantly associated with the receipt, storage, and distribution of goods, products, cargo and materials.
Water Supply Intake, Public Well, Reservoir, Treatment Facility is a facility constructed, excavated, drilled, dug or impounded that are used for the supply or pre-consumption purification of potable water for general public consumption.

10.4 DRI Communication Procedures

10.4.1 Request for Action

Whenever City of Baldwin is considering action on a development project that meets or exceeds the DRI thresholds for that development type, the City must require that the applicant (developer, builder, or landowner who is proposing the new development) provide enough information about the project to complete the DRI Information Form.
This form is available on the Department's web site and is intended to:

A. Identify basic information about the proposed project;

B. Provide this information to the Regional Commission in order for them to determine if the project is a DRI; and
C. Provide information about the proposed project to affected parties upon which they may base their comments.

10.4.2 DRI Notification
When completed, the City shall electronically submit the DRI Information Form to the Regional Commission and the Department using the DRI website. When completing this form, the City should ascertain that plans for the proposed project are sufficiently finalized that no, or only minor, modifications of the proposed project are anticipated prior to project construction. The City may proceed with its development review process during the DRI process steps specified below, provided that it does not take final official action approving a project until the DRI process is completed and it has had adequate time to consider the Regional Commission's DRI report.

10.4.3 DRI Determination
Within 5 days of receiving a fully and accurately completed DRI Information form, the Regional Commission must evaluate whether the project is a DRI. The Regional Commission's determination of whether the project is a DRI shall be made in consultation with the City of Baldwin and considering the guidelines provided in this section. The Regional Commission must then issue notice to the City of Baldwin, applicant, and the Department using the DRI website, stating whether or not the project has been designated as a DRI. If the Regional Commission determines the project is not a DRI, the process is terminated.

10.4.4 Notice to Affected Parties and Comment Period
Within 5 days of issuing the DRI determination, the Regional Commission will provide a DRI information packet for review and comment to all affected parties. This packet shall include a project summary, a copy of the DRI Information Form, and any additional information the Regional Commission may have obtained regarding the project. The DRI information packet will also include a notice stating, at a minimum, the following:
A. The beginning and end dates of a 15-day period during which the Regional Commission will accept comments for inclusion in the DRI report to be delivered to the host jurisdiction;
B. The manner in which affected parties should submit comments; and
C. A list of all of the jurisdictions and affected parties receiving the notice.

10.4.5 DRI Report
Within 5 days of the conclusion of the 15-day comment period, the Regional Commission must assemble a DRI report. The materials presented in the DRI report are purely advisory and under no circumstances should be considered as binding or infringing upon the City's right to determine for itself the appropriateness of development within its boundaries.
The DRI report shall include the following:
A. All of the comments received from affected parties in the DRI report.
B. The Regional Commission's assessment of any likely interjurisdictional impacts resulting from the proposed development and how the project relates to the policies, programs, and projects articulated in the Regional Plan and Regional Resource Plan.
C. Evaluation and analysis which may have been completed by the Regional Commission. The Regional Commission may, depending on its assessment of the City's need for advice and

assistance, include recommendations or offer technical assistance to the City for addressing impacts of the proposed development. Furthermore, the Regional Commission may provide in-depth recommendations or offer technical assistance to other affected parties relative to mitigating potential impacts of the proposed project.

10.4.6 Notification Requirements
The DRI report must be transmitted to the City, the applicant, the Department, and all affected parties not more than 30 days after issuing the DRI determination (unless process extensions are taken as provided for in this section. Transmittal of the DRI report officially completes the DRI process.

10.4.7 City of Baldwin Action
After the DRI process is completed, the City may proceed with whatever final official action(s) it deems appropriate regarding the proposed project, but it is encouraged to take the materials presented in the DRI report into consideration when rendering its decision.

10.4.8 Withdrawal of DRI
If, at any time during the DRI process, an applicant desires to withdraw a DRI project from the process, the City must inform the Regional Commission in writing of the request. The Regional Commission must provide notice of this withdrawal to all affected parties.

10.4.9 Alternative Dispute Resolution
Alternative dispute resolution of conflicts relating to the Developments of Regional Impact may be initiated in accordance with the Rules for Alternative Dispute Resolution (DCA Rules 110-12-5) adopted by the Board of Community Affairs.

10.4.10 Optional Activities
A. **Evaluation and Recommendations.** Upon request by the City, the Regional Commission may evaluate the development project for potential positive and negative outcomes. The Commission may provide recommendations intended to maximize the potential positive effects and economic benefits, minimize the project's local impacts and impacts upon neighboring jurisdictions, or otherwise further quality growth principles and/or the goals of the regional plan. The extent of this evaluation and recommendations shall be whatever the Regional Commission deems appropriate, but in no circumstance shall it delay the completion of the DRI process. The Regional Commission, in attempting to facilitate this optional activity, shall not compel the City or applicant to provide information regarding the project beyond that routinely collected in the course of the DRI process.
B. **Consultations.** If, at any point during the DRI Communications Procedures covered in this section, it appears to the Regional Commission that the outcomes of the process would be improved by more direct communication, the Regional Commission may at its own discretion bring the City, the applicant, and the affected parties together to discuss the development proposal, the DRI process, any comments received, or results of any evaluation conducted by the Regional Commission.
C. **Process Extensions.** The Regional Commission's Executive Director may approve up to three 30-day extensions of the DRI process to permit negotiations, conflict resolution, or similar activities related to the project. An extension may be approved only upon receiving written request, submitted at any time during the DRI process, from two or more of the

following parties: the applicant, the City, or any affected party. Each additional 30-day extension must be requested and approved by the Regional Commission's Executive Director separately, and notice given to the City, the applicant, and all affected parties.

D. **Appeals.** In case of disagreement regarding the administration of DRI process, the applicant, City, Regional Commission, or any affected party may submit a written request that the Department review how the DRI process was conducted. The Department will only act on appeals requested by at least two of these parties. The request for Department review may be submitted at any time during the DRI process, but no later than 5 days after the Regional Commission transmits the DRI Report. For duly submitted requests, the Board of Community Affairs may evaluate the situation and provide recommendations to resolve any procedural discrepancies that are identified.

10.5 City of Baldwin Responsibilities

The City must follow the applicable procedures identified under DRI Communication Procedures detailed in this section when an applicant (developer, builder, or landowner who is proposing the new development) requests some type of City action related to a proposed development project, such as, but not limited to, a request for rezoning, annexation, zoning variance, building or land disturbance permit, hookup to a water or sewer system, master or site plan approval, acceptance of a public street, signing off on a subdivision plat, comprehensive plan amendment, or entering into a contract; and it appears that the proposed development may meet or exceed the applicable DRI thresholds.

When the City proposes a project that may meet or exceed the DRI thresholds, the City becomes the applicant and must submit the project to the Regional Commission as a potential DRI.

If a proposed development will be located in more than one jurisdiction and, in total, the proposed development meets or exceeds a DRI threshold; the local government in which the greatest acreage of the project is to be located is responsible for submitting the project to the Regional Commission as a potential DRI.

The City may proceed with its development review process during the DRI process, provided that it does not take final official action approving a project until the DRI process is completed and the City has had adequate time to consider the Regional Commission's DRI report. It is intended that the DRI process should take place simultaneously with local development review procedures in order to minimize administrative delay for review and approval of large developments. Examples of local development review activities that may take place during the DRI process include, but are not limited to, preliminary staff administrative functions, project evaluation/assessment, community participation meetings and hearings, site visits, and planning commission meetings to discuss, but not vote on, the proposed local action that triggered the DRI process.

Failure of the City to submit a project that exceeds the applicable DRI thresholds to the Regional Commission for determination of whether it qualifies as a DRI or to wait until the DRI process is completed before taking final action will result in the following corrective course of action:

A. On the first occurrence, the Regional Commission staff will meet with the City to carefully explain the DRI process, benefits of participating in this process, and possible consequences of not participating.

B. If, within two years of the meeting above, the City again fails to submit a qualifying project or to wait until the DRI process is completed prior to taking final action the project, the Regional Commission will inform the Department. The Board of Community Affairs will evaluate the situation and determine an appropriate response which may include suspension of the City's Qualified Local Government status for a period of up to 1 year.

10.6 Regional Commission Responsibilities

A. Each Regional Commission is encouraged to establish alternative DRI requirements, specifically tailored to the needs of their region, which may be either more restrictive or less restrictive than those promulgated by the Department in these rules. These alternative requirements may include alternative DRI thresholds, alternative set of reviewable development types qualifying for DRI review, and amendments to the DRI Communication Procedures. These alternative DRI requirements may apply to the entire region or to specific areas requiring special attention or regionally important resources that are identified in the Regional Commission's Regional Plan. The alternative requirements must be developed and approved as follows:
   1. The Regional Commission must first solicit input about desired alternative DRI requirements from the local governments in its region and any potentially affected parties.
   2. The proposed alternative DRI requirements must be approved by a majority of the Regional Commission's Council and subsequently submitted to the Department for consideration.
   3. The Board of Community Affairs must adopt a resolution approving the alternative DRI requirements for that Regional Commission.

B. Whenever a development is submitted to a Regional Commission for DRI determination by one of its constituent local governments, the Regional Commission must undertake the DRI Communication Procedures identified in this section. As appropriate or where duly requested, the Regional Commission may also undertake any of the optional activities identified in this section.

C. Whenever, within 60 days of local final action on a project, it comes to the Regional Commission's attention that a local government has taken final action upon a project designated as a DRI prior to the completion of the DRI process, or has allowed a development that exceeds DRI thresholds to proceed without complying with DRI Communication Procedures, the Regional Commission must:
   1. Hold a meeting with the local government to carefully explain the DRI process, benefits of participating in this process, and possible consequences of not participating.
   2. If, within two years of the meeting above, a local government again fails to submit a qualifying project or to wait until the DRI process is completed prior to taking final action the project, the Regional Commission will inform the Department. The Board of Community Affairs will evaluate the situation and determine an appropriate response which may include suspension of the local government's Qualified Local Government status for a period of up to 1 year.

10.7 Determining if a Project is a DRI

Regional Commissions must use the following criteria to determine if a development project is a DRI. The determination of the Regional Commission is final.

10.7.1 Meets or Exceeds DRI Thresholds

The table below identifies the minimum DRI thresholds for each type of development and for two distinct planning tiers within the state. These population tiers are:

A. Metropolitan Areas which include counties with population of 50,000 or more as defined by the most recent decennial U.S. Census; and

B. Non-Metropolitan Areas which include the remaining counties within the state. A map delineating these tiers is available from the Department. Regional Commissions and local governments within each county must utilize the appropriate thresholds associated with their population tier, unless the Regional Commission has adopted alternative thresholds for its region as provided in this section. Proposed developments that do not equal or exceed these thresholds are not subject to the DRI Communication Procedures.

Thresholds Table

Developments of Regional Impact Development Thresholds		
Development	**Metropolitan Tier**	**Non-Metropolitan Tier**
Office	Greater than 400,000 gross square feet	Greater than 125,000 gross square feet
Commercial	Greater than 300,000 gross square feet	Greater than 175,000 gross square feet
Wholesale, Distribution	Greater than 500,000 gross square feet	Greater than 175,000 gross square feet
Hospital, Health Care Facility	Greater than 300 new beds or generating more than 375 peak hour vehicle trips per day	Greater than 200 new beds or generating more than 250 peak hour vehicle trips per day
Housing	Greater than 400 new lots or units	Greater than 125 new lots or units
Industrial	Greater than 500,000 gross square feet or employing more than 1,600 workers or covering more than 400 acres	Greater than 175,000 gross square feet or employing more than 500 workers or covering more than 125 acres
Hotel	Greater than 400 rooms	Greater than 250 rooms
Mixed Use	Gross square feet greater than 400,000 (with residential units calculated at either 1,800 square feet per unit or if applicable, the minimum square footage allowed by local development regulations) or covering more than 120 acres or if any of the individual uses meets or exceeds a threshold as identified herein	Gross square feet greater than 125,000 (with residential units calculated at either 1,800 square feet per unit or if applicable, the minimum square footage allowed by local development regulations) or covering more than 40 acres or if any of the individual uses meets or exceeds a threshold as identified herein
Airport	All new airports, runways, and runway extensions	Any new airport with a paved runway or runway additions of more than 25% of existing runway length
Attraction, Recreational Facility	Greater than 1,500 parking spaces or a seating capacity of more than 6,000	Greater than 1,500 parking spaces or a seating capacity of more than 6,000
Post-Secondary School	New school with a capacity of more than 2,400 students or expansion by at least 25 percent of capacity	New school with a capacity of more than 750 students or expansion by at least 25 percent of capacity

Waste Handling Facility	New facility or expansion of use of an existing facility by 50 percent or more	New facility or expansion of use of an existing facility by 50 percent or more
Quarry, Asphalt Plant, Concrete Plant	New facility or expansion of existing facility by more than 50 percent	New facility or expansion of existing facility by more than 50 percent
Wastewater Treatment Facility	New major conventional treatment facility or expansion of existing facility by more than 50 percent or community septic treatment facility exceeding 150,000 gallons per day or serving a development project that meets or exceeds an applicable threshold as identified herein	New major conventional treatment facility or expansion of existing facility by more than 50 percent or community septic treatment facility exceeding 150,000 gallons per day or serving a development project that meets or exceeds an applicable threshold as identified herein
Petroleum Storage Facility	Storage greater than 50,000 barrels if within 1,000 feet of any water supply, otherwise, storage capacity greater than 200,000 barrels	Storage greater than 50,000 barrels if within 1,000 feet of any water supply, otherwise, storage capacity greater than 200,000 barrels
Water Supply Intake, Public Well, Reservoir, Treatment Facility	New facility	New facility
Intermodal Terminal	New facility	New facility
Truck Stop	New facility with more than 3 diesel fuel pumps or containing a half acre of truck parking or 10 truck parking spaces	New facility with more than 3 diesel fuel pumps or containing a half acre of truck parking or 10 truck parking spaces
Correctional, Detention Facility	Greater than 300 new beds or generating more than 375 peak hour vehicle trips per day	Greater than 200 new beds or generating more than 250 peak hour vehicle trips per day
Any other development type not identified above (including parking facility)	1000 parking spaces or if available, more than 5,000 daily trips generated	1000 parking spaces or if available, more than 5,000 daily trips generated

When it is not easily determined whether a project equals or exceeds the applicable DRI threshold, the Regional Commission must consider the following factors in making its determination:

A. **Speculative Developments**. If final development type is difficult to determine because project tenants have not yet been identified, use the thresholds for the highest intensity development type allowed by current land use regulations. If there are no such local development regulations, estimate the likely type and scale of development based on the real estate market potential of the project site.
B. **Multi-phased Developments.** Applicants shall submit all phases of the project at inception of the project, rather than submitting each phase one at a time. However, if the applicant seeks City approvals for smaller phases individually, the determination of whether the project is in fact a multi-phased development should be based on considerations as to whether a master plan has been prepared for the overall project or whether any approvals have been sought for the entire project as a unit. If the multi-phased nature of the project cannot be established in advance, whenever a phase is submitted for approval that, when combined with all previously approved phases of the project built during the past five years, cumulatively equals or exceeds the applicable DRI threshold, the proposed new phase, plus any incomplete portions of the project must be submitted as a DRI.
C. **Multiple Land Parcels.** If parts of the project are located on separate land parcels, the decision whether the project is a single (perhaps multi-phased) development, or actually separate projects should be based on such considerations as whether the separate parcels are owned by the same entity, whether a master plan has been prepared for the overall project, or whether any approvals have been sought for the overall project as a unit.

10.7.2 Project Specificity

Frequently, proposed development projects are submitted for a DRI determination before project specifics are available, such as at the time of an initial rezoning of a large tract of land, establishment of an industrial park, etc. In such cases, the Regional Commission must make a determination of whether the project should proceed through the DRI process presently and/or should be resubmitted when project specifics become available. In making this determination, the Regional Commission must consider factors including, but not limited to:

A. Whether the potential for project impacts is likely to change substantially once project specifics are clarified.
B. The benefit of an earlier notification to affected parties, in terms of need to plan infrastructure expansions well in advance of development, or act otherwise to mitigate potential interjurisdictional impacts.

10.7.3 Project Changes

The Regional Commission may determine that a previously submitted DRI is nevertheless subject to another round of comment by affected parties if the project changes are substantial enough to warrant this. Such determination should be made after consultation with the City and affected parties. Examples of project changes that may lead a Regional Commission to determine that an additional comment opportunity is warranted include but are not limited to substantial increase of project size or substantial change in the mix of uses (based on the applicable measures used for the DRI thresholds). In making this determination, the Regional Commission must consider such factors as:

A. Whether the potential for project impacts will change substantially for the altered project.

B. Whether significant time has passed since the previous DRI process (thus increasing likelihood that the views of affected parties on the project have changed).

10.7.4 Redevelopment

Proposed redevelopments that exceed a DRI threshold must be considered a new DRI, even if the previous development on the site was processed as a DRI.

11.0 Walls

A. A wall permit is required for all retaining walls that are greater than 4 feet in height measured from top of footing to top of wall. A wall permit is also required for all stormwater/detention pond retaining walls regardless of height and all retaining walls less than four feet in height when the slope of the backfill material exceeds a 1 foot vertical to 3 feet horizontal slope or when the retaining wall will be required to support a surcharge load.

B. Retaining wall plans shall be submitted for review and approval prior to the issuance of a land disturbance permit. Wall plans shall bear a seal and signature of a professional engineer registered in the state of Georgia.

C. Wall plans shall include a plan view of each wall with stations numbers and top and bottom of wall elevations.

D. Wall plans shall include a profile of each wall with top of wall elevations, top and bottom of footing elevations, and ground elevations on both sides of the wall.

E. Wall plans shall include structural construction details for each retaining wall and each stormwater/detention pond wall shown on the site grading plan that specify required materials, concrete design strength, 28 day design compressive strength of concrete, steel reinforcement (type, size, spacing, ASTM designation, yield strength), wall and footing dimensions, minimum required concrete cover for reinforcement, minimum required lap splice lengths, type of backfill material, slope of backfill at finished grade on both sides of wall, and drainage method for backfilled walls.

F. Provide applicable soil parameters utilized in each wall design including allowable soil bearing pressure, equivalent lateral fluid pressure (active and passive), surcharge load, internal angle of friction, coefficient of friction, and soil density.

G. For each retaining wall greater than 10 feet high measured from top of footing to top of wall, the soil bearing pressure used for foundation design shall be based on the results of soil testing performed at the wall location by an approved geotechnical testing firm. The geotechnical report signed and sealed by a Georgia professional engineer shall be submitted with the wall plan to the City of Baldwin.

H. Include the following note on the plans for each wall:
Prior to construction, soil design parameters stated on the construction wall details including but not limited to allowable soil bearing pressure, equivalent lateral fluid pressure (active and passive), internal angle of friction, coefficient of friction, and soil density shall be field-verified by a geotechnical firm. A corresponding written report with the seal and signature of a professional engineer registered in the state of Georgia and employed by the geotechnical firm field verifying the soil design parameters shall be submitted to the Public Works Director prior to construction of the wall. If there is a discrepancy between field-verified soil parameters and those specified on the construction plan, construction shall not proceed until applicable design modifications have been submitted by the wall design engineer of record and have been reviewed by City of Baldwin.

I. A handrail shall be required along the top of all walls greater than 30 inches in height measured from the ground adjacent to the wall on the low side to the top of the wall.

12.0 Tree Protection

12.1 Purpose

The City of Baldwin aspires to minimize the loss of trees due to growth and development. Tree roots aid in soil stabilization and tree photosynthesis converts carbon dioxide to oxygen. The loss of trees contributes to soil erosion and sedimentation. Areas experiencing growth and development that have reduced natural wooded areas and green spaces are also experiencing a reduction in air quality due the presence of less trees to transform into oxygen and an increase in carbon dioxide from emissions. Therefore, since trees:

A. Provide a reduction in temperature of three to ten degrees;
B. Provide protection from winds thereby reducing heating costs and the burning of fossil fuels;
C. Provide a reduction in the velocity of runoff from a rain event, assist in the infiltration of stormwater into the soil, settle particulates, minimize soil erosion, and assist in water quality protection;
D. Provide a noise and glare buffer;
E. Provide oxygen and remove carbon from the atmosphere; and
F. Provide a physical buffer and shade;

It is imperative to the health, safety, and welfare of everyone living or working within the jurisdiction to protect significant existing trees and require the planting of new trees.

Authority for questions of tree characteristics or urban and community forestry shall be referred to the USDA Forest Service, Georgia Forestry Commission, Cooperative Extension Service of the University of Georgia College of Agriculture, American Forest Foundation, The National Arbor Day Foundation or any other authority found acceptable by the city.

12.2 Applicability

A. The tree protection zone shall apply to the entirety of a tract of land for which no tree protection plan has been approved. After such approval, the tree protection zone shall correspond to that part of a tract of land designated as a tree conservation area in the approved plan.
B. The tree protection zone shall not apply to the following:
    1. Property already occupied by an owner-occupied single-family dwelling; unless nonresidential uses are proposed for such property, except that any construction, paving, or other activity on the property that will damage trees on the public right-of-way is subject to the restrictions of Section 12.5, "Protection of Existing Trees."
    2. Public utility companies and government agencies conducting operations on public and utility rights-of-way and easements or on sites for electric power substations and similar facilities, which operations are for the purpose of assuring uninterrupted utility and governmental services and unobstructed passage on public streets.
    3. Property in use for tree farming (as defined herein) or other agricultural activities (as defined herein), provided the best management practices established by the Georgia Forestry Commission or the state department of agriculture are observed.

4. Family held property the subdivision of which is affected for the sole purpose of transferring a portion of such property to one (1) or more family members for use as the family member's primary residence.
5. Minor subdivisions as defined in Chapter 9.0.

C. Undisturbed buffers are required adjacent to state waters. See Chapter 5.0.

12.3 Definitions

As used in this chapter, the following words and terms shall have the meanings ascribed to them:

Agricultural activities are (a) good-faith commercial production from the land or on the land of agricultural products, including horticultural, floricultural, dairy, livestock, poultry, and apiary products, but not including forestry products (see "tree farming" herein); and (b) clearing trees for the purpose of planting crops, providing pasture for livestock, or constructing buildings necessary for the production of agricultural products.

Building tree line is the line extending from the corners of a building nearest a street to the side lines of the lot (not including a street right-of-way), parallel to the right-of-way line or to the chord of that line.

Caliper is the tree trunk diameter measured at a point six inches above ground level. (See also DBH.)

Canopy tree is a species of tree that normally reaches a height at maturity in excess of 40 feet and in which the layers of leaves and branches of the tree are so arranged or formed to provide shade. Examples of canopy trees would include scarlet oak, northern red oak, shumark oak, water oak, white oak, yellow poplar, red maple, sugar maple, American elm, winged elm, Chinese elm, trident maple, pin oak, American beech, pecan, southern magnolia, sweetgum, and willow oak.

Clear cut is the large-scale, indiscriminate removal of trees, shrubs, and undergrowth with the intention of preparing real property for non-agricultural development purposes.

Critical root zone is the land area circular in shape and centered on the trunk of a tree, the radius of which circle is determined by the farthest extent of the drip line from the trunk.

DBH (diameter-at-breast-height) is the tree trunk diameter (in inches) at a height of four and one-half feet above the ground. If a tree splits into multiple trunks below four and one half feet, then each trunk is measured as a separate tree. (See also caliper.)

Development site is that portion of a tract of land that will be dedicated to a proposed development, including that land containing trees that will be counted toward satisfying the requirements of these provisions. Where a development site is smaller than the tract in its entirety, only those trees specified to be within the construction area shall be counted toward meeting the 15 units per acre requirement.

Drip line is a perimeter formed by the points farthest away from the trunk of a tree where precipitation falling from the branches of that tree lands on the ground.

Significant tree is a tree in fair or better condition which has been determined to be of a high value by an arborist or professional because of its species, size, age, or other professional criteria. A tree is considered in fair or better condition if:

1. Its life expectancy is greater than 15 years;

2. It has a relatively sound and solid trunk with no extensive decay or hollow with less than 29 percent radial tip die-back; and
3. It has no major insect or pathological problems.

Hardwood trees such as oaks and hickories and softwood trees such as pines and cedars whose diameters are 18 inches DBH or more and small hardwoods such as dogwoods, redbuds or sourwoods whose diameters are eight inches DBH or more shall be considered significant trees due to size. A tree of lesser size than the preceding shall be significant if it is a rare or unusual species or is of historical significance or is specifically used by design as a landscape focal point of the project.

Tree farming is the planting, cultivating, and harvesting of trees in a continuous cycle as a regular practice on a tract of land, not including the removal of trees for purposes of development or the removal of trees without replanting.

12.4 Removal of trees other than during construction of development

A. Permit. On properties which are not exempted under the above section, a permit shall be required to remove or cause the death of existing significant trees and any other trees ten inches DBH (diameter at breast height) or larger located within the tree protection zone or for grading or other work adjacent to a tree which would adversely affect it. An approved tree protection plan is required for issuance of a permit. Permit requirements are waived where the city determines that trees to be removed are dead, diseased, infested to the extent that removal is necessary, or have been damaged by lightning, wind, ice, or other disasters to the extent that endangers public safety.

B. Retention. The property owner shall retain trees on the property equivalent to 15 units per acre of development site, as defined herein, (not including land area covered by buildings) in accordance with these regulations and the approved plan, including, if necessary, replacing trees which die or are irreparably damaged.

12.5 Protection of Existing Trees

A. Priority among existing trees. When a choice is available as to which existing trees to save, emphasis shall be given to the preservation of significant trees, even isolated individual trees, over retention of other trees. Nonsignificant trees, however, should be saved in stands rather than as individual trees scattered over a site. Removal of significant trees and other trees ten inches DBH or larger shall be permitted only in conjunction with an approved preliminary tree protection plan, an approved grading plan, and actual grading of building pads not to clear cut the lot.

B. On properties which are not exempted under the above section, the following provisions shall apply; except that encroachment on the critical root zone of a tree is permitted where necessary to the development such as construction of a driveway, provided the tree is not counted toward the required 15 units per acre of development site (not including land area covered by buildings):
   1. Damage of trees is prohibited. No person shall:
      a. Cut, carve, or otherwise damage or remove any tree except in accordance with the provisions of this chapter;

b. Attach any wire, nails, advertising posters, or other gadgets harmful to any tree;
c. Allow any gaseous, liquid, or solid substance which is harmful to trees (such as concrete washout, fuel, lubricants, herbicides, or paint) to come in contact with them; or
d. Set a fire or permit any fire to burn when such fire or the heat thereof will injure any portion of any tree.

2. Fence required. During excavation, filling, construction, or demolition operations, each tree or stand of trees to remain on the property shall be protected against damage to bark, roots, and low-hanging branches with a fence enclosing the critical root zone. Fencing shall be either plastic construction area fencing, silt fencing, 12-gauge two-inch by four-inch wire mesh, double one-inch by four-inch rails on two-inch by four-inch posts, or high-visibility surveyors' tape on one-inch by two-inch posts. Height of the latter three fence types shall be four feet.
3. Compaction prohibited. All building materials, vehicles, construction equipment, dirt, debris, or other objects likely to cause soil compaction or above-ground damage shall be kept outside the drip line (critical root zone). Where a limited amount of encroachment is unavoidable and is approved by the city, the area within the drip line shall be mulched with a four-inch layer of processed pine bark or wood chips or a six-inch layer of pine straw prior to the encroachment.
4. Grade change prohibited. There shall be no raising or lowering of the ground level within the drip line. Stripping of topsoil within the drip line shall not be permitted. Where necessary, the use of moderate fill is permitted only with prior installation of an aeration system approved by the city. Deposition of sediment within the drip line shall be prevented by placement of sediment barriers, which shall be backed by two-inch by four-inch wire mesh in areas of steep slope.
5. Ditches prohibited. No person shall excavate any ditch or trench within the drip line. Where such encroachment is unavoidable and is approved by the city, ditches or trenches shall be so located as to minimize root damage. If roots must be cut, root pruning procedures approved by the city must be employed.
6. Paving prohibited. No person shall install concrete, asphalt, or other impervious material within the drip line.

12.6 Criteria for Replacement Trees

A. Spacing and the potential size of species chosen shall be compatible with spatial limitations of the site.
B. The species must be ecologically compatible with the specifically intended growing site.
C. The trees must have the potential for size and quality comparable to those removed.
D. The trees must be compatible in extent of crown and root systems at maturity with nearby utilities.
E. Planting preference shall be given to specimens of no more than three inches DBH.
F. Where trees must be added to achieve the required 15 units per acre of development site (not including land area covered by buildings), pines may not comprise more than 30 percent of the required units. Where existing pines already comprise 30 percent or more

of the required units, no more pines may be credited toward the required units. At least 25 percent of the replacement tree units must be canopy trees.

G. Authority for questions of tree characteristics shall be publications of the Georgia Forestry Commission, publications of the Cooperative Extension Service of the University of Georgia College of Agriculture, or other authority acceptable to the county.

12.7 Tree Measurement Units

The diameter of a tree's trunk will be measured and a value assigned in "units" in accordance with the following table. The values assigned to trees of the same size will be different for existing and new trees, as indicated. One unit is not the same as one tree.

Values for Existing Trees

Diameter at Breast Height

Caliper (inches)	**Tree Units**	**Caliper** (inches)	**Tree Units**
1 to 4	0.1	28	4.3
5 to 6	0.2	29	4.6
7	0.3	30	4.9
8	0.4	31	5.2
9	0.5	32	5.6
10	0.6	33	5.9
11	0.7	34	6.3
12	0.8	35	6.7
13	0.9	36	7.1
14	1.1	37	7.5
15	1.2	38	7.9
16	1.4	39	8.3
17	1.6	40	8.7
18	1.8	41	9.2
19	2.0	42	9.6
20	2.2	43	10.1
21	2.4	44	10.6
22	2.6	45	11.0
23	2.9	46	11.5
24	3.1	47	12.0
25	3.4	48	12.6
26	3.7	49	13.1
27	4.0	50	13.6

Tree Unit Values for New (Replacement) Trees

Caliper (inches)	**Tree Units**	**Caliper** (inches)	Tree Units
1	0.4	9	1.5
2	0.5	10	1.7
3	0.6	11	1.9
4	0.7	12	2.1
5	0.8	13	2.3
6	1.0	14	2.5
7	1.2	15	2.7
8	1.3		

Tree caliper for new replacement trees shall be measured 6 inches above ground. Tree caliper fractions may be rounded up to the next whole number if the fraction is 0.5 inches or greater or rounded down to the next whole number if the fraction is less than 0.5 inches. New replacement multi-trunked trees shall be given credit by measuring the single largest trunk only. Shrubs and ornamental flowering trees shall receive no credit as new replacement trees.

Note: For existing trees, a "unit" is one square foot of trunk cross-section area.

12.8 Tree Protection Plan

All construction plans for a proposed development or improvement of any tract of land shall include a tree protection plan. The tree protection plan may be included on the erosion, sedimentation, and pollution control plan. Such plan shall be submitted to and approved by the City prior to any grading, clearing, or other removal of existing vegetation.

A. A tree protection plan shall show the following:
   1. The extent of the development site.
   2. All significant trees to be removed and all other trees ten inches DBH or larger to be removed.
   3. All significant trees and all other trees ten inches DBH or larger that will remain on the development site and be protected during construction; and trees less than ten inches DBH which are submitted for credit as part of the required 15 units per acre of development site (not including land area covered by buildings).
   4. In heavily wooded areas that will not be disturbed, the plan may show only the boundaries of each stand of trees and a list of the number, size, and type (e.g., hardwood, softwood, deciduous, evergreen) of trees in each stand which are submitted for credit.
   5. Areas subject to provisions of the soil erosion and sedimentation control ordinance regarding retention of undisturbed natural vegetative buffers adjacent to state waters shall also be shown.
   6. Locations of proposed on-site underground utility lines.

7. Locations of existing on-site and off-site utility lines. Indicate areas where trees cannot be planted because of interference with (1) existing or proposed utilities on public rights-of-way or on utility rights-of-way or easements and (2) existing utilities on adjoining properties.
8. Limits of land disturbance, clearing, grading, and trenching.
9. Limits of tree conservation areas, showing trees to be maintained and planted, specifying type and size.
10. Grade changes or other work adjacent to a significant tree or any other tree ten inches DBH or larger which would adversely affect it, with drawings and descriptions as to how the grade, drainage, and aeration will be maintained around the tree.
11. Planting schedule, if applicable.

B. A preliminary tree protection plan may be submitted for development of an industrial park where multiple sites will be cleared and graded for purposes of marketing vacant sites to industrial prospects. Planting of new trees will not be required on a lot until a use is developed on that lot and locations of new trees need not be shown on the preliminary plan. The preliminary tree plan for industrial/office or commercial parks protection shall show the following:
   1. The extent of the development site.
   2. Limits of land disturbance, clearing, grading, and trenching.
   3. All significant trees to be removed and all other trees ten inches DBH or larger to be removed.
   4. Grade changes or other work adjacent to a significant tree or any other tree ten inches DBH or larger which would adversely affect it, with drawings and descriptions as to how the grade, drainage, and aeration will be maintained around the tree.
   5. Units of trees that will be required on the lot when it is developed, calculated both (a) without subtracting any building footprint area from the acreage and (b) by subtracting one-third of the lot area as assumed building area.

C. Where property has been clear cut of trees in violation of the Best Management Practices as established by the Georgia Forestry Commission, or in violation of the provisions of this ordinance, no rezoning or permissive use application shall be made for that property for a minimum of three years.

12.9 Tree Requirements for Non-Single-Family Residential Developments

The following shall apply to the development of tracts for non-single-family residential uses.

A. Upon completion of development, all properties shall have a number of trees equivalent to 15 units per acre of development site (not including land area covered by buildings).
B. Existing significant trees or any other trees ten inches DBH or larger that are in excess of the required 15 units per acre of development site (not including land area covered by buildings) but outside the construction area (buildings, accessory uses, parking area) shall not be removed unless adjacent development would cause irreparable damage to the critical root zones.
C. Flowering ornamental trees shall not be used in density calculations.

D. Trees located within the 25 foot undisturbed buffer of a creek or stream shall not count toward the unit requirement.

E. Frontage landscape strips shall be provided between any parking lot designed or intended to accommodate five cars or more and any street frontage of the property on which the parking lot is located. Landscaping shall be provided as follows unless the parking area is otherwise screened from the street by a building or other means. The depth of such strips shall be ten feet for commercial and industrial zoned properties, and 20 feet for residentially zoned property.
   1. Landscape strips shall contain no structures, parking areas, patios, stormwater detention facilities, or any other accessory uses except for retaining walls or earthen berms constructed as part of an overall landscape design, pedestrian-oriented facilities such as sidewalks and bus stops, underground utilities, driveways required to access the property, and signs otherwise permitted by this ordinance.
   2. One tree shall be provided within the landscape strip for every 40 feet of length of street frontage, or portion thereof. Such trees must be of a type that is suitable to local growing conditions and that will normally reach at least 12 inches at diameter breast height upon maturity.
   3. All portions of a landscape strip shall be planted in trees, shrubs, grass, or ground cover, except for those ground areas that are mulched or covered by permitted structures.
   4. Upon planting, new trees shall have a caliper of no less than two inches, and may be clustered for decorative effect following professional landscaping standards for spacing, location, and design.
   5. Plant materials in the landscape strip are not to extend into the street right-of-way unless specifically allowed by the City of Baldwin.
   6. Where, for any reason, trees cannot be saved or planted within the required planting strips, the depth of the strip shall be extended beyond the minimum indicated to such depth as necessary to accommodate the required number of units. (Uniform extension of the depth is not required.)

F. Deciduous shade trees shall be provided within any parking lot designed or intended to accommodate five cars or more, in accordance with the requirements of this chapter.
   1. One deciduous shade tree shall be provided within the parking lot for every ten parking spaces, or portion thereof. Each tree shall be located within the parking lot in reasonable proximity to the spaces for which the tree was required. Trees provided to meet the minimum requirements of any landscape strip or buffer may not be counted toward this requirement.
   2. A landscaping island shall be located at the end of every parking bay between the parking space and an adjacent travel aisle or driveway. The island shall be no less than eight feet wide and extend the entire length of the adjacent parking space. The island shall be planted in trees.
   3. Tree planting areas shall be no less than eight feet in width and shall provide at least 100 square feet of planting area per tree. No tree shall be located less than two and one-half feet from the back of curb.

4. Landscaping islands and tree planting areas shall be well drained and contain suitable soil and natural irrigation characteristics for the planting materials they contain.
5. To facilitate a more efficient and functional parking lot design, the City of Baldwin may approve modifications to the above requirements (such as the clustering of landscape islands or expansion of frontage strips) to the above planting requirements, provided the total landscaping area is not reduced.

G. Trees between building and street. Where trees must be added to achieve the required 15 units per acre of development site (not including land area covered by buildings), such additions shall be made between the street right-of-way and the building tree line (as defined herein) in locations approved by the City of Baldwin.

H. Parking lot and buffer trees. Trees required by this regulation in relation to parking lot landscaping may be included in calculating the required 15 units per acre. However, trees existing or planted in a buffer shall not be counted as part of the minimum 15 units per acre requirement.

I. On properties on which all of the requirements of this chapter would exceed the required 15 units per acre, the City of Baldwin shall approve of the location and design of the landscape plan.

12.10 Tree Requirements for Single-Family Residential Development

The following shall apply to single-family residential developments.

A. A tree plan shall accompany all preliminary plat submissions. The tree plan shall include the location of all significant trees and existing tree stands and the limits of clearing proposed to accommodate the construction of roads, utilities, and other infrastructure necessary for the development of the subdivision.

B. The removal or clearing of trees or other existing vegetation shall be prohibited outside the appropriate clearing limits as defined on the approved preliminary plan.

C. Lots shall not be cleared and prepared during the construction of the roads, infrastructure, utilities, etc. Where limited clearing is necessary, a note shall be placed on the final plat indicating a tree plan for the lot in its entirety shall be required.

D. In order to encourage the preservation of significant trees and the incorporation of these trees into the design of the development, additional density credit will be given for significant trees that are successfully saved. Credit for any significant tree saved will be two (2) times the assigned unit value shown in the table "Values for Existing Trees."

E. Any significant tree that is removed without the appropriate review and approval by the department of planning must be replaced by trees with a total density equal to twice the unit value of the tree removed.

F. Preference is given to existing trees that will be maintained on the property.

G. Each residential subdivision development shall, upon completion, achieve a tree count equivalent to 15 tree units per acre. It is expected that this requirement shall be achieved through the preservation of existing trees on the site. However, where a site is primarily pasture land (90 percent open space or greater) prior to the initiation of the subdivision development, the tree units required shall be calculated using the total acreage from disturbed areas only (i.e. acreage from road and utility construction).

H. For subdivision developments in which trees must be planted to achieve the required tree units, the final plat shall include a landscaping plan specifying the method in which the requirement shall be met. Any new trees required shall be planted prior to the issuance of an occupancy permit for any dwelling located on a lot that requires a tree unit(s).

12.11 Distance from Curb and Sidewalk

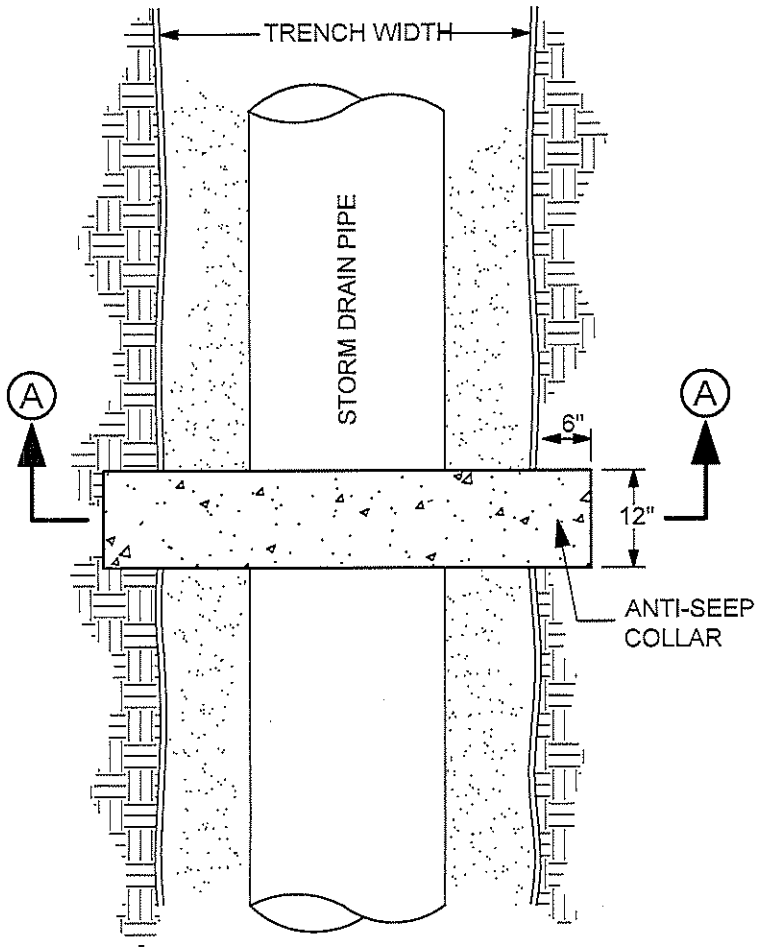
The distance trees may be planted from the curb and sidewalk shall not be closer than 2 feet for small trees, 3 feet for medium trees, and 4 feet for large trees.

12.12 Distance from Street Corners and Fire Hydrants

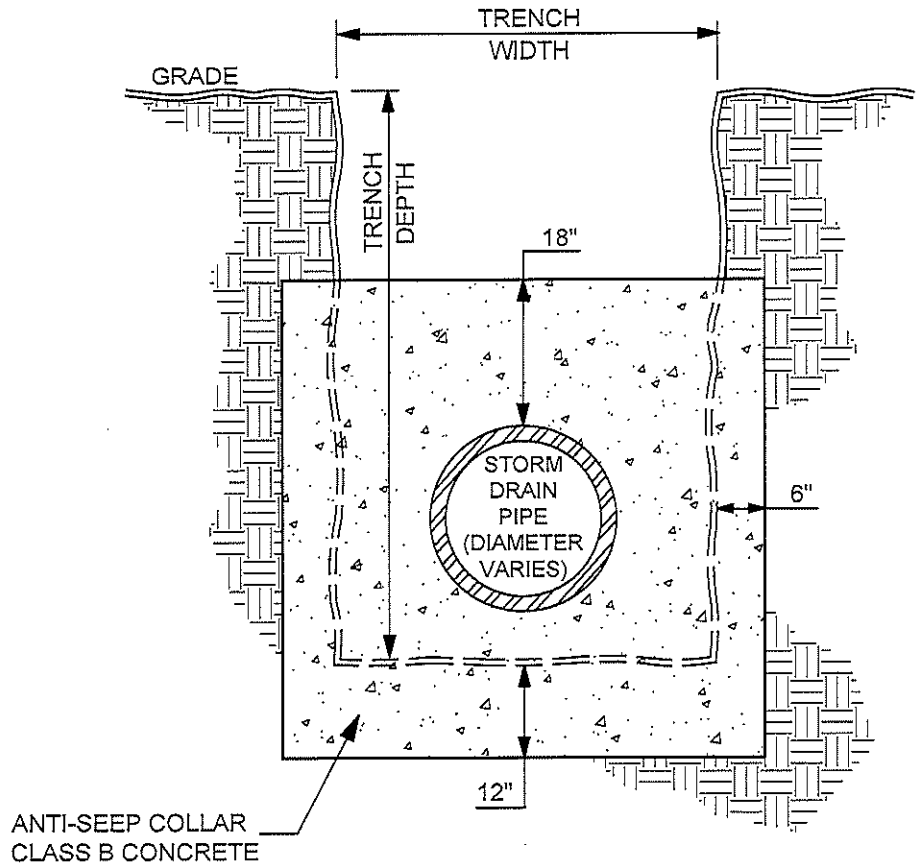
No tree shall be planted closer than 35 feet from any street corner measured from the point nearest intersecting curb or edge of pavement radius. No street tress shall be planted closer than 10 feet from any fire hydrant.

12.13 Distance from Utilities

No tree shall be planted under or within 10 lateral feet of an overhead utility wire, or over or within 5 feet of any underground water line, sanitary sewer line, storm drain pipe, transmission line, or other utility.

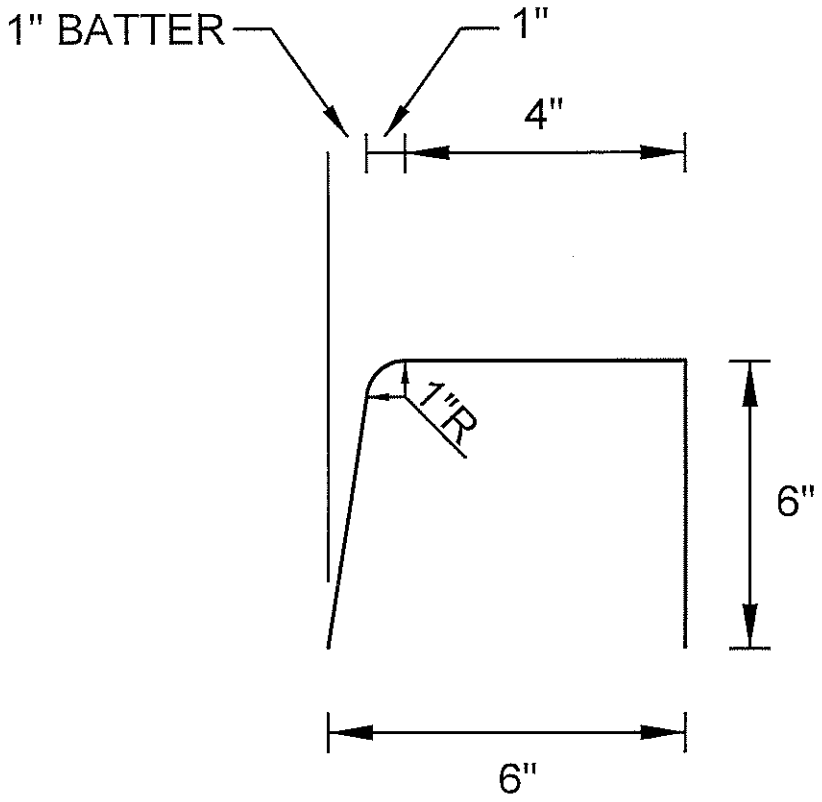


PLAN VIEW

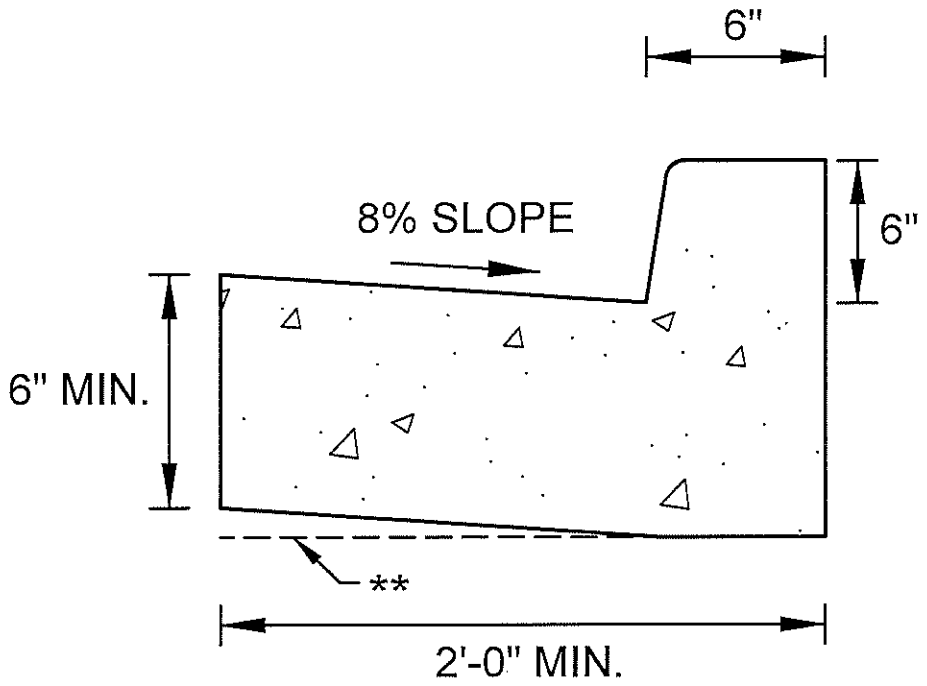


SECTION A-A

CITY OF BALDWIN	ANTI-SEEP COLLAR DETAIL



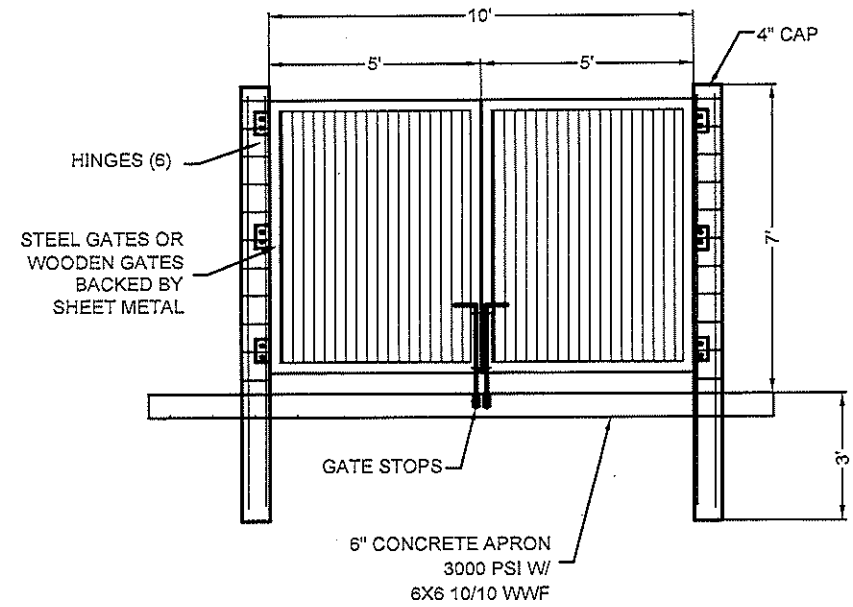
CURB FACE DESIGN

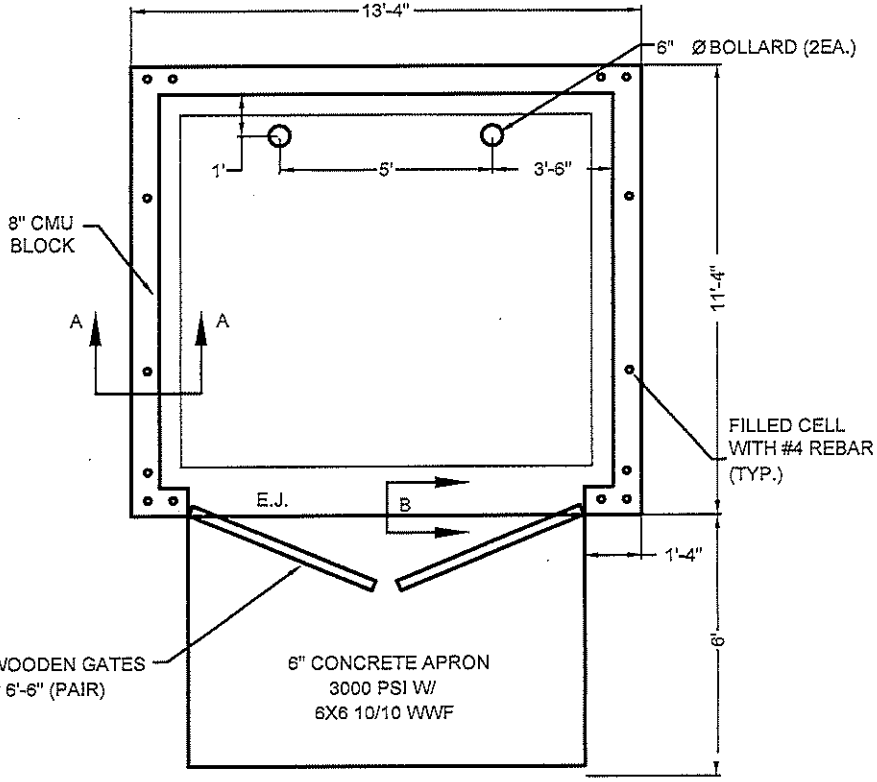


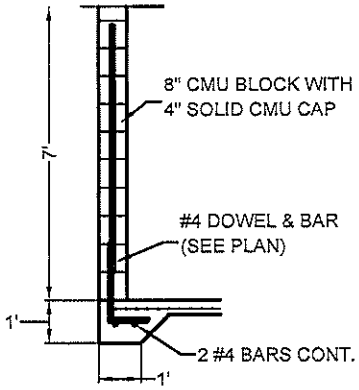
** AT CONTRACTOR'S OPTION THE GUTTER THICKNESS MAY BE INCREASED AT EDGE OF PAVEMENT TO MAKE BOTTOM OF GUTTER PARALLEL WITH PAVING OF BASE COURSE. THE GUTTER THICKNESS SHALL NOT BE LESS THAN 6 INCHES AT ANY POINT.

NOT TO SCALE

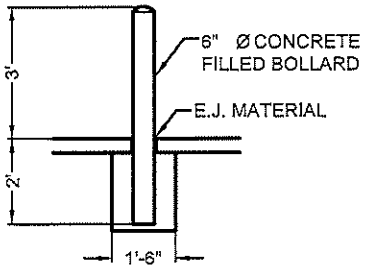
CITY OF BALDWIN	CONCRETE CURB AND GUTTER DETAIL (TYPE 2)



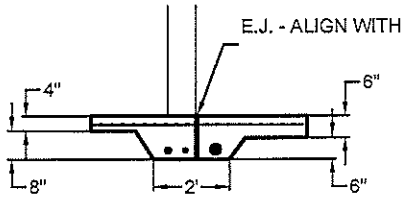




WALL SECTION A-A



WALL SECTION A-A



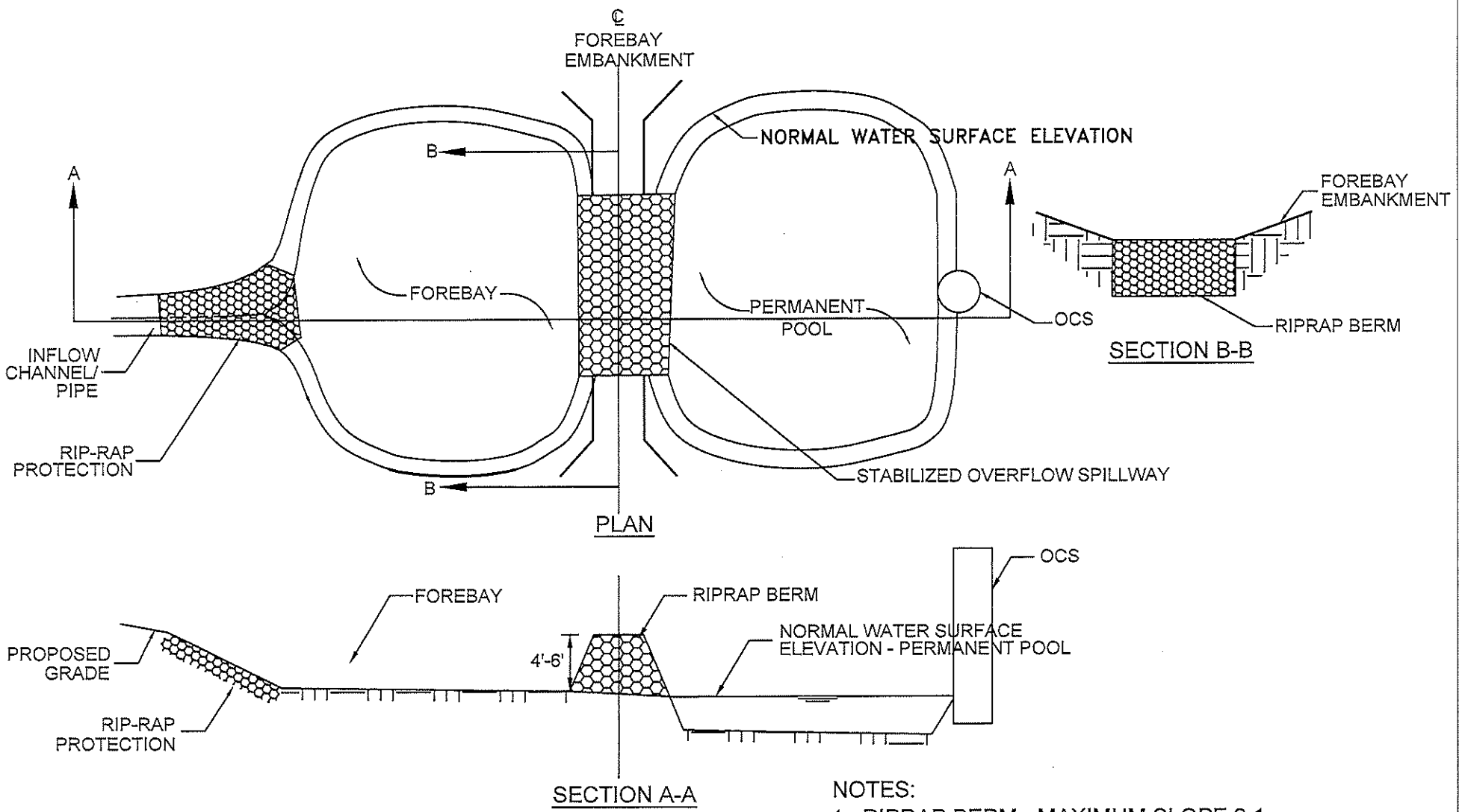
SECTION B-B

NOTES:

1. GATES SHALL BE CONSTRUCTED SO THEY CAN SUPPORT THEIR OWN WEIGHT IN A FREE SWINGING POSITION.
2. STEEL GATES SHALL BE PRIMED AND PAINTED.
3. GATE STOPS SHALL BE INSTALLED ON ALL GATES TO SECURE GATE IN OPEN OR CLOSED POSITIONS.
4. WOODEN SCREENING SUFFICIENTLY SUPPORTED MAY BE ALLOWED IN LIEU OF CMU/BRICK WALLS IN CERTAIN LOCATIONS IF DEEMED APPROPRIATE BY THE CITY OF BALDWIN.

NOT TO SCALE

CITY OF BALDWIN	DUMPSTER ENCLOSURE DETAIL

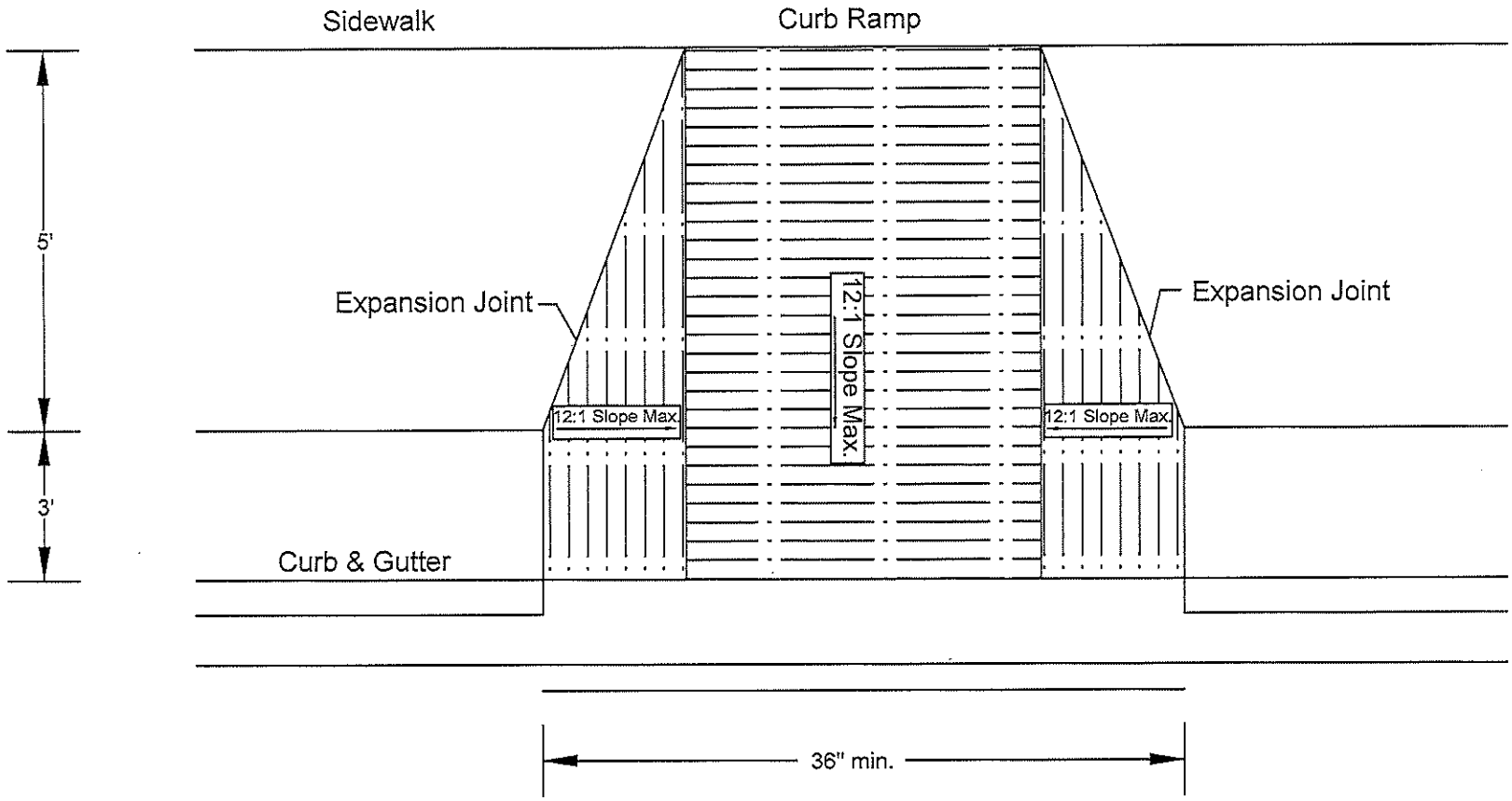


NOTES:

1. RIPRAP BERM - MAXIMUM SLOPE 2:1
2. IF PIPE IS USED INSTEAD OF IN-FLOW CHANNEL, PIPE INVERT SHALL DISCHARGE ABOVE NORMAL POOL.
3. MULTIPLE PIPES MAY DRAIN TO FOREBAY.

NOT TO SCALE

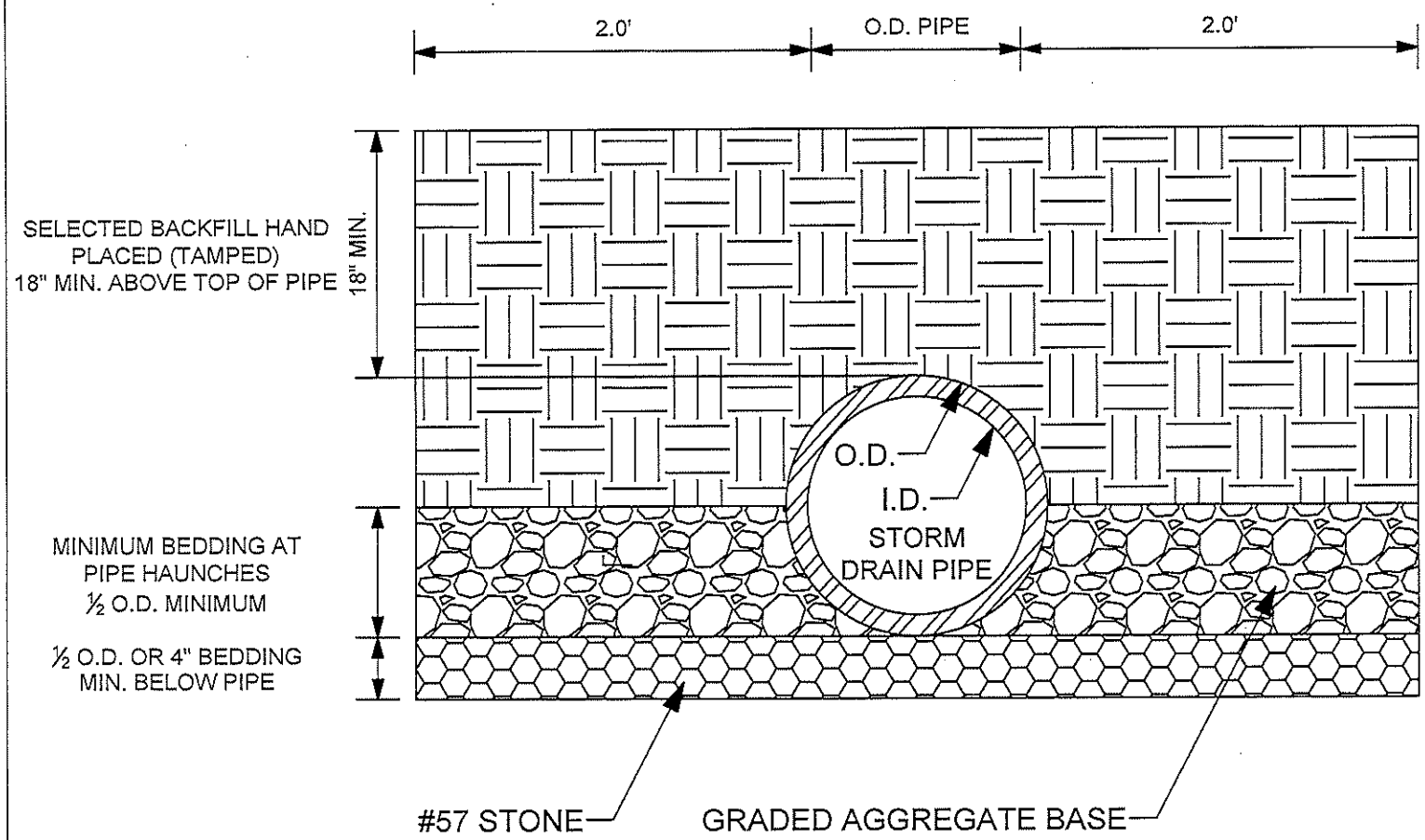
CITY OF BALDWIN	FOREBAY/PERMANENT POOL DETAIL



NOTES:

1. Curb ramps shall comply with ADA and the Georgia Accesibility Code.
2. Ramps shall be located where sidewalks cross a curb.
3. Max slope of Ramp is 12:1.
4. Ramps shall be flared and max slope of flares is 12:1.
5. Detectable warnings shall be installed on ramps and flares.

CITY OF BALDWIN	HANDICAP RAMP DETAIL

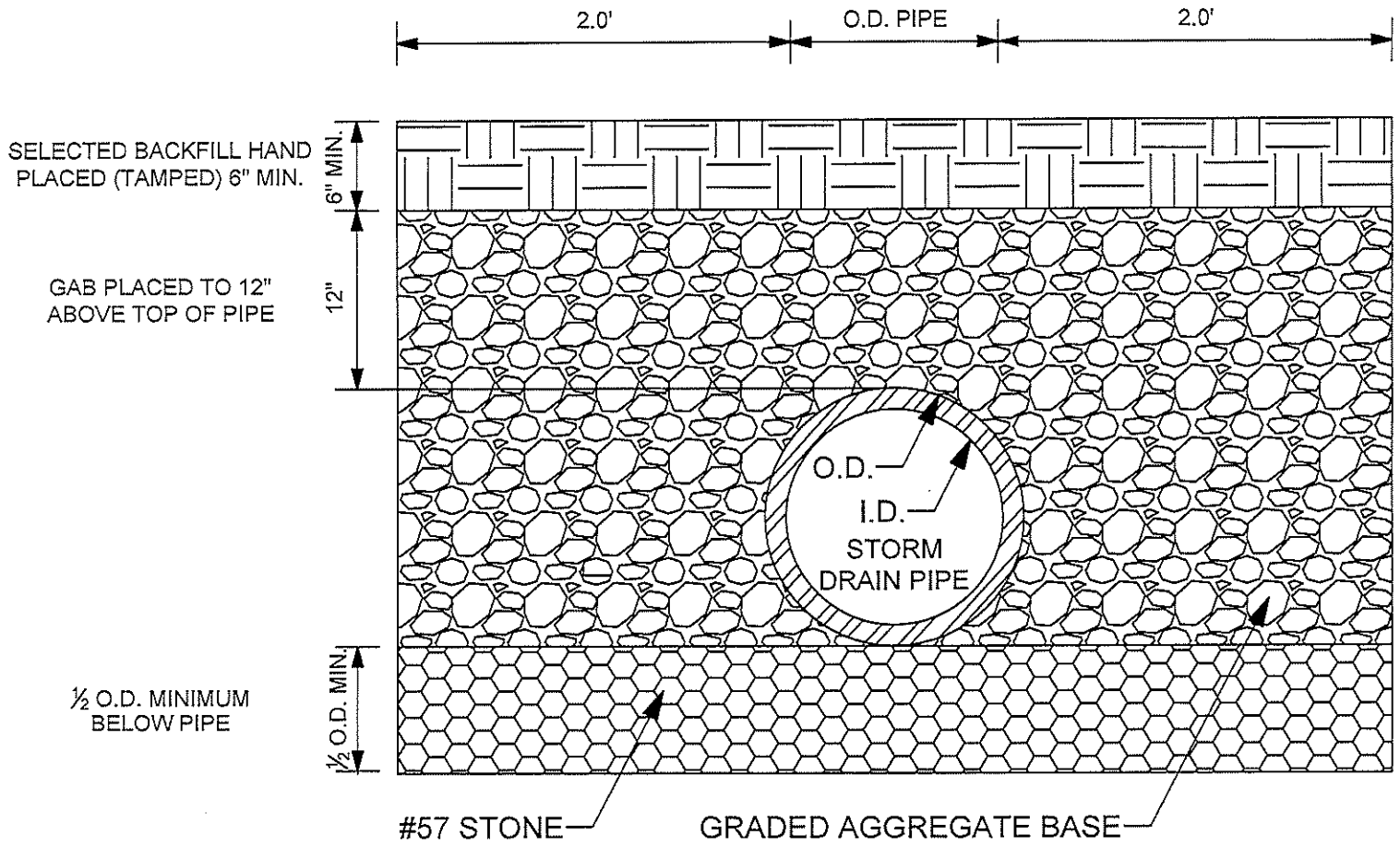


NOTES:

1. THE SUBGRADE SHALL BE COMPACTED TO 100% MAXIMUM DRY DENSITY.
2. THE #57 STONE COURSE SHALL BE COMPACTED.
3. THE GRADED AGGREGATE BASE COURSE SHALL BE CONSTRUCTED IN 8 INCH MAXIMUM LIFTS AND COMPACTED TO 100% OF THE MAXIMUM DRY DENSITY.

N.T.S.

CITY OF BALDWIN	HDPE STORM DRAIN PIPE BEDDING DETAIL (OUTSIDE OF PAVEMENT)

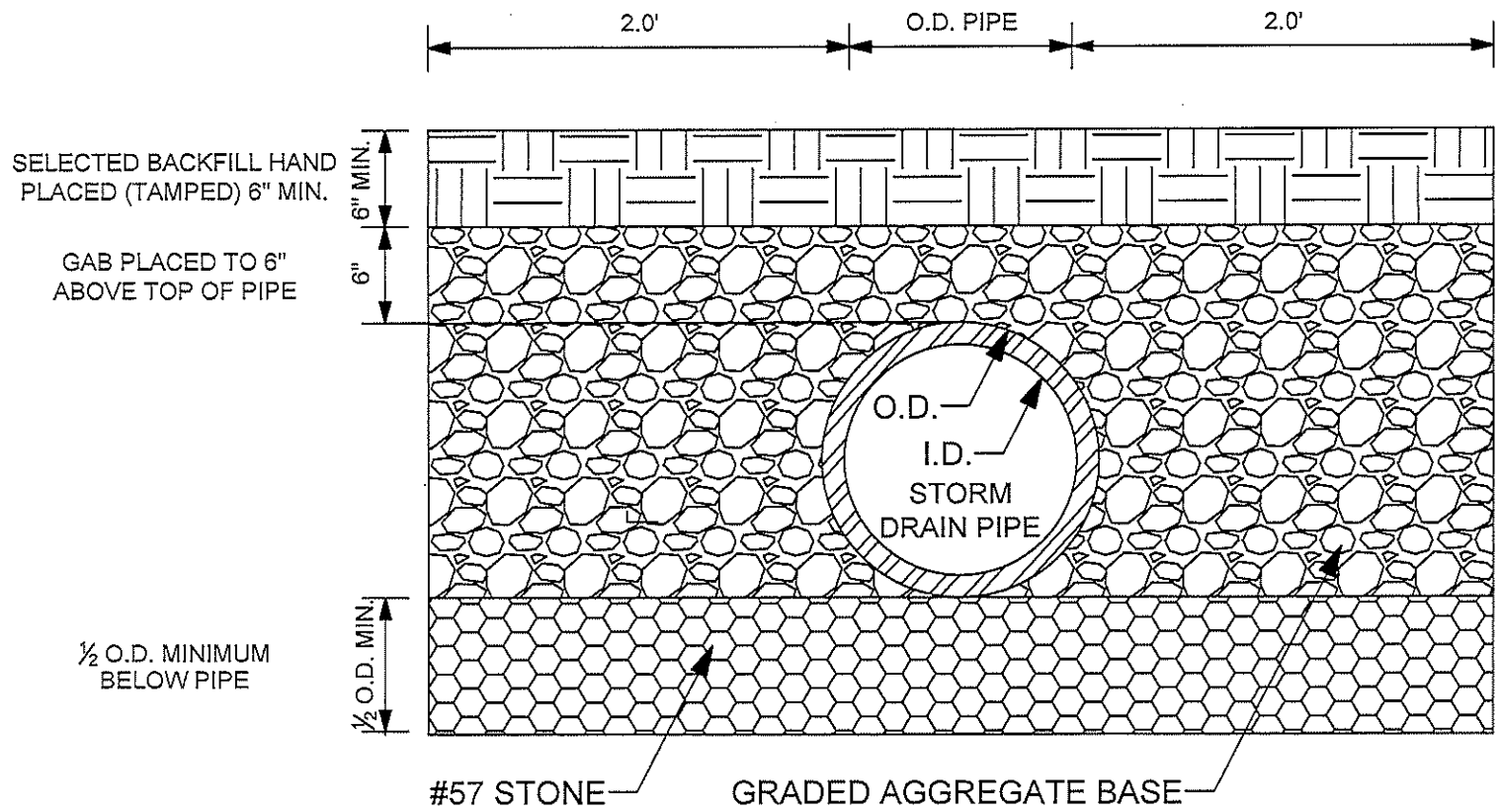


NOTES:

1. THE SUBGRADE SHALL BE COMPACTED TO 100% MAXIMUM DRY DENSITY.
2. THE #57 STONE COURSE SHALL BE COMPACTED.
3. THE GRADED AGGREGATE BASE COURSE SHALL BE CONSTRUCTED IN 8 INCH MAXIMUM LIFTS AND COMPACTED TO 100% OF THE MAXIMUM DRY DENSITY.

N.T.S.

CITY OF BALDWIN	HDPE STORM DRAIN PIPE BEDDING DETAIL (UNDER INDUSTRIAL PAVEMENT)



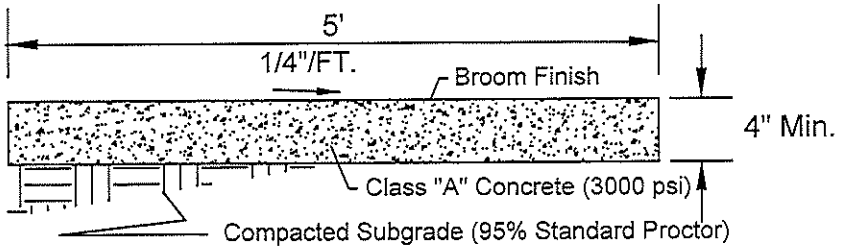
NOTES:

1. THE SUBGRADE SHALL BE COMPACTED TO 100% MAXIMUM DRY DENSITY.
2. THE #57 STONE COURSE SHALL BE COMPACTED.
3. THE GRADED AGGREGATE BASE COURSE SHALL BE CONSTRUCTED IN 8 INCH MAXIMUM LIFTS AND COMPACTED TO 100% OF THE MAXIMUM DRY DENSITY.

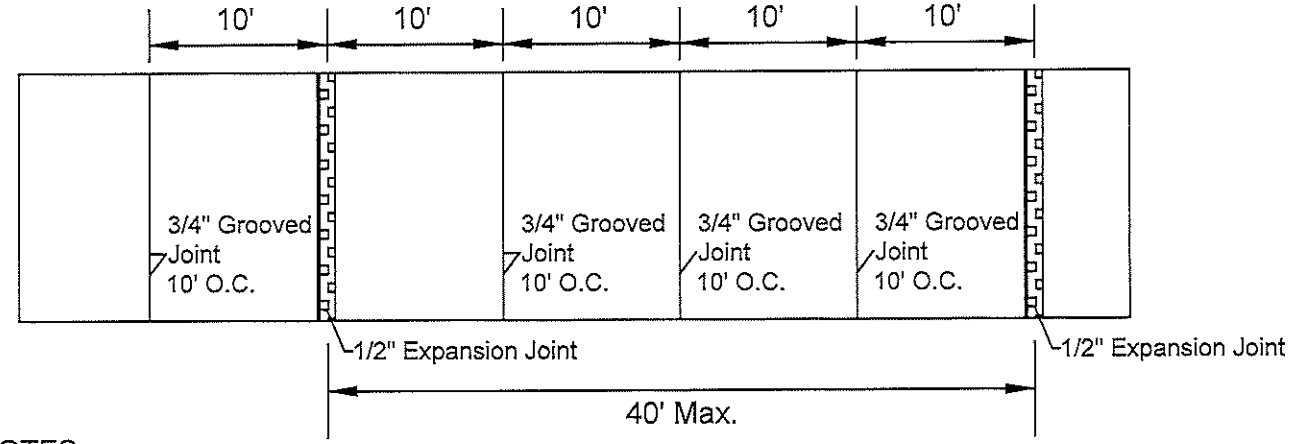
N.T.S.

CITY OF BALDWIN	HDPE STORM DRAIN PIPE BEDDING DETAIL (UNDER PAVEMENT)

PROFILE



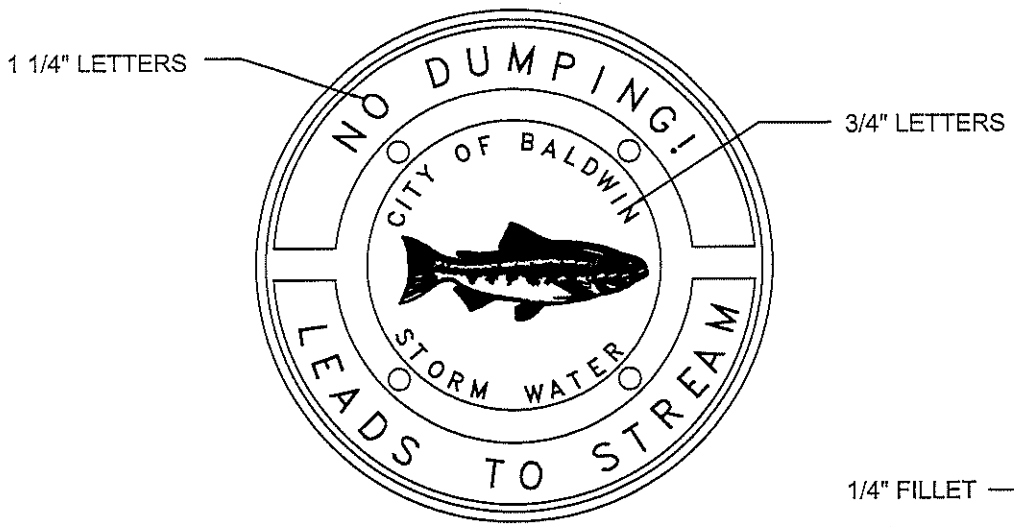
PLAN



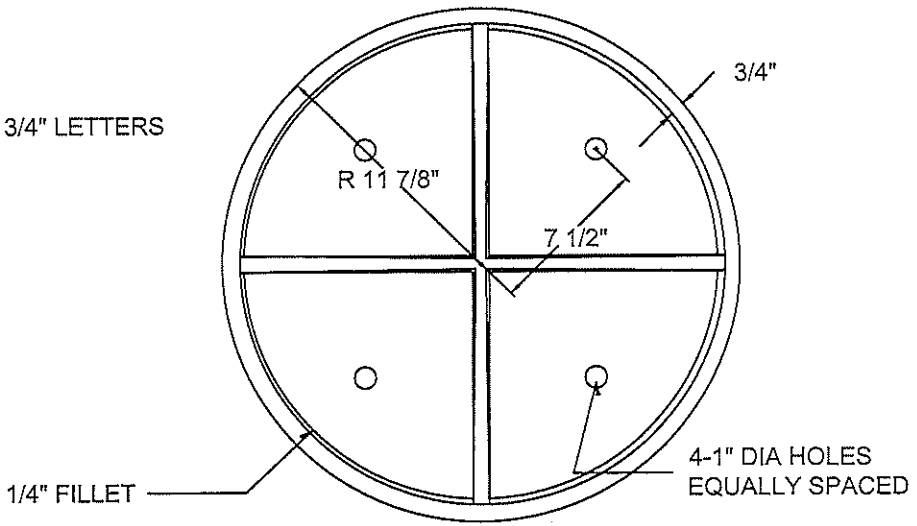
NOTES:

1. 5' wide x 4" thick Concrete Sidewalk
2. Class "A" Concrete (minimum 28 day compressive strength of 3000 psi)
3. 3/4" Grooved Joint 10' O.C.
4. 1/2" Expansion Joint 40' Max. and adjacent to any drainage structures, driveways, roads, etc.
5. Broom Finish
6. 1/4"/ft Cross Slope
7. Compact subgrade to 95% standard proctor density

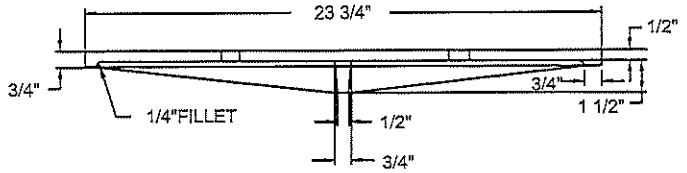
CITY OF BALDWIN	SIDEWALK DETAIL



TOP VIEW



BOTTOM VIEW

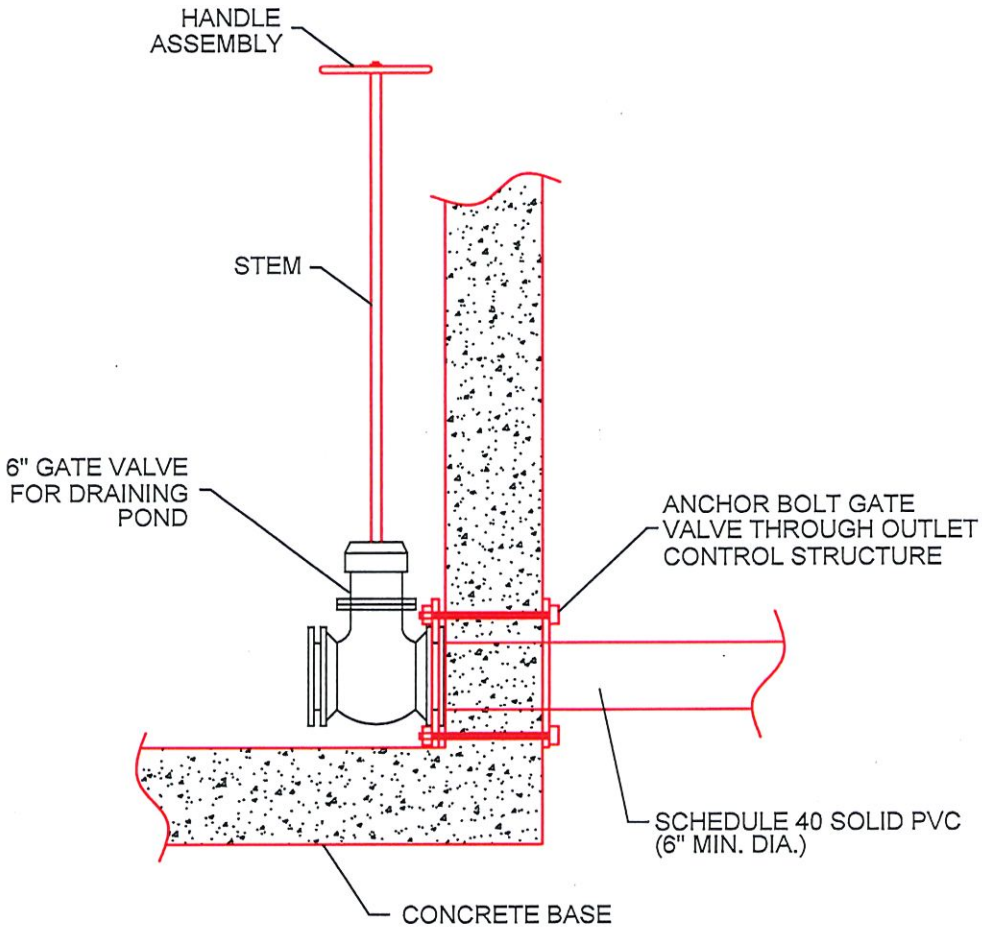


COVER SECTION

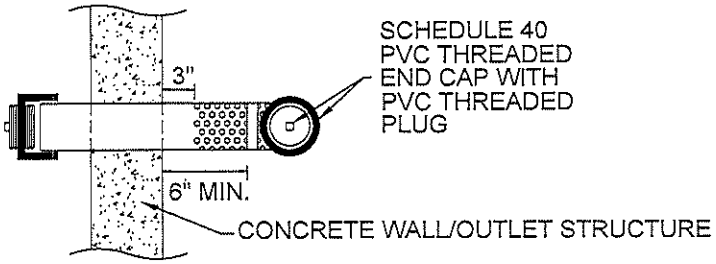
NOTES:

- Approximate Weight: C.I. Cover 63 lbs.
- Load Rating: Non-Traffic
- Engraving Depth Max.: 3/16"

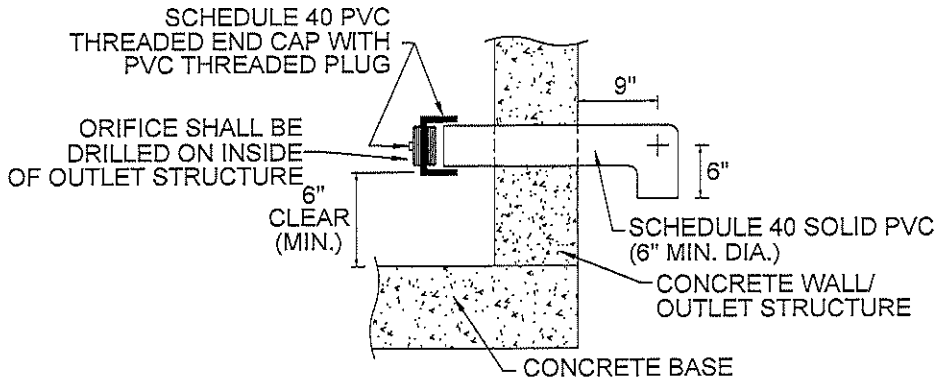
CITY OF BALDWIN	STORMWATER MANHOLE CASTINGS - NON-TRAFFIC AREAS DETAIL



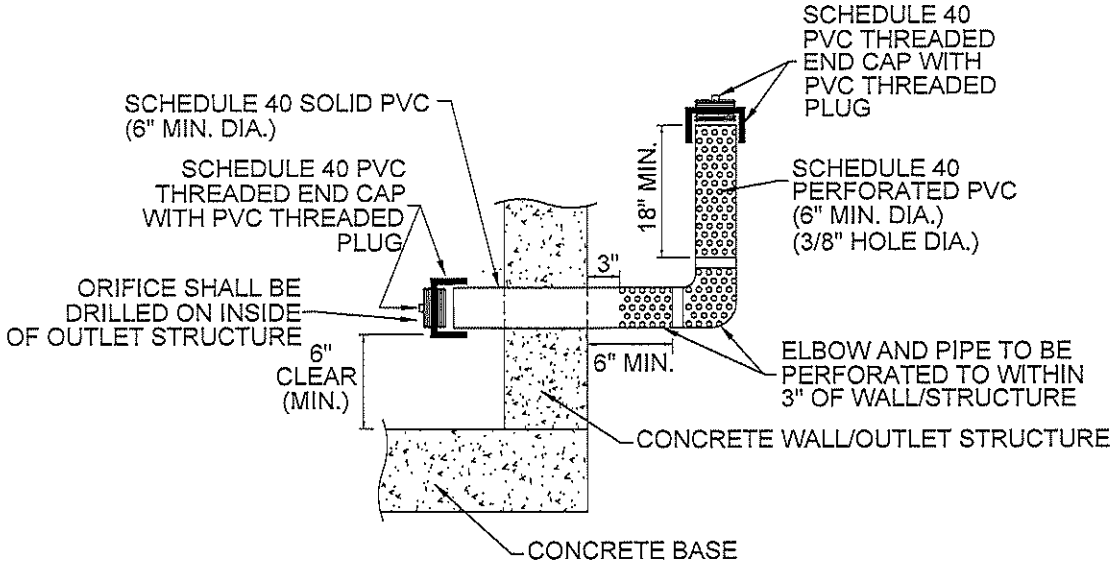
CITY OF BALDWIN	STORMWATER POND GATE VALVE DETAIL



WATER QUALITY
PLAN VIEW
(AERIAL VIEW)



CHANNEL PROTECTION (CP)
ORIFICE END-CAP



WATER QUALITY (WQ)
ORIFICE END-CAP

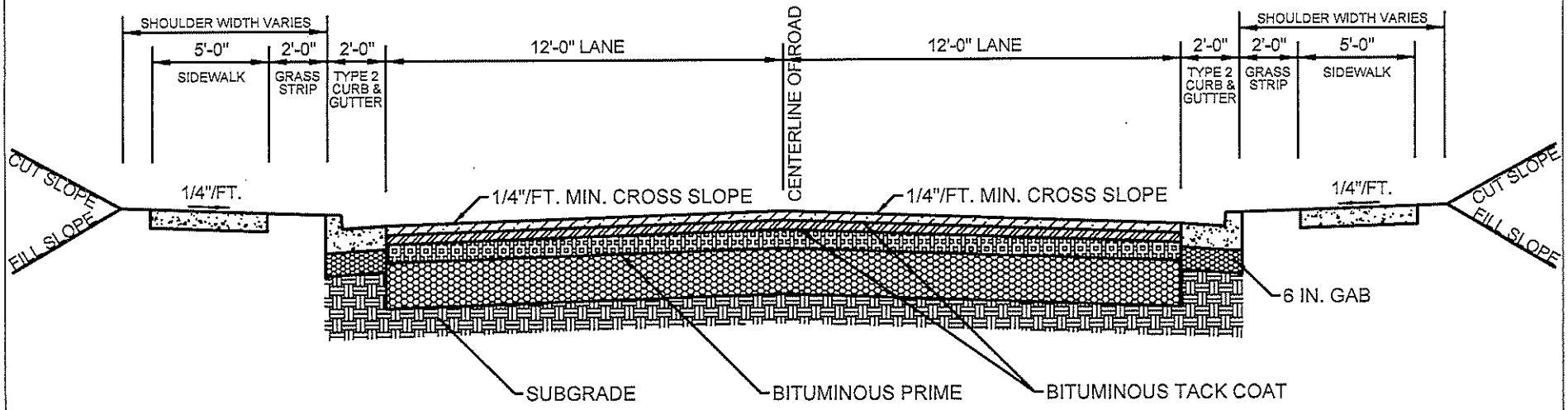
NOTES (TO APPLY TO ALL):

1. FILL GAP BETWEEN STRUCTURE AND PVC PIPE WITH MORTAR OR INSTALL A FERNCO ADAPTER.
2. SIZE ORIFICE AS REQUIRED.
3. PIPE DIAMETER SHALL BE SPECIFIED PER TABLE BELOW. PIPE DIAMETERS SHALL BE CONSISTENT FOR EACH END-CAP ASSEMBLY.
4. IF CHANNEL PROTECTION ORIFICE DIAMETER IS LESS THAN OR EQUAL TO 3", USE WATER QUALITY ORIFICE END-CAP ASSEMBLY.

OUTLET ORIFICE DIAMETER	PIPE SIZE
<3"	6"
3" TO <5"	8"
5" TO <11"	12"

NOT TO SCALE

CITY OF BALDWIN	WATER QUALITY/CHANNEL PROTECTION ORIFICE DETAIL



2 IN. 12.5 MM SUPERPAVE SURFACE COURSE

2 IN. 19 MM SUPERPAVE

4 IN. 25 MM SUPERPAVE

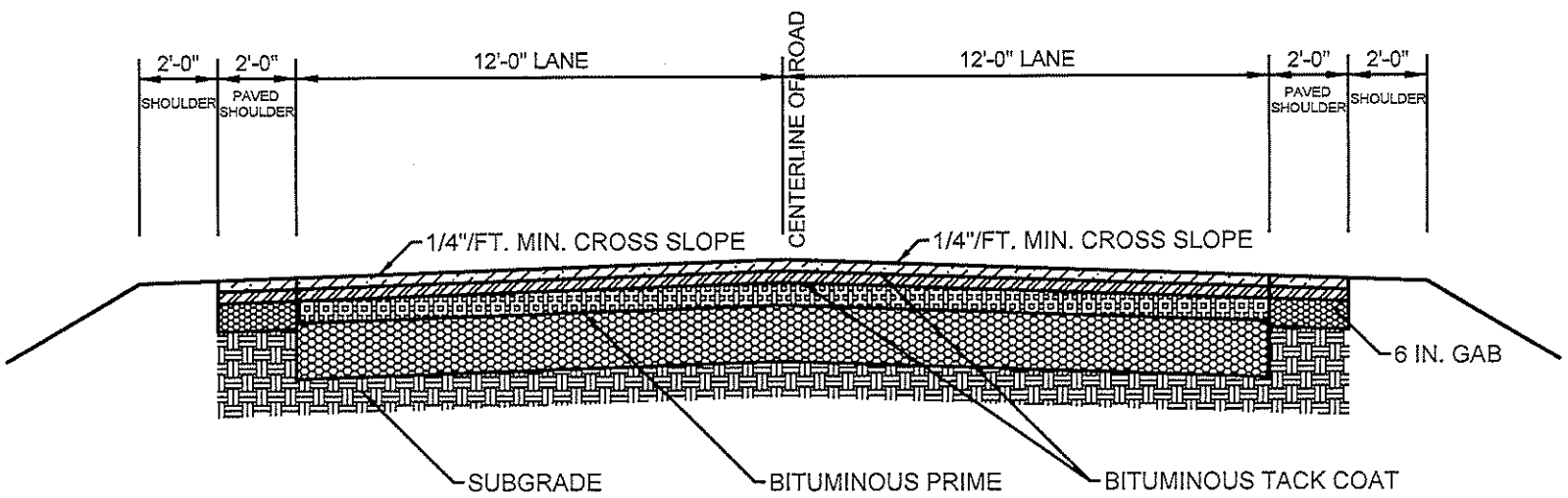
10 IN. GRADED AGGREGATE BASE

NOTES:

1. THE SUBGRADE SHALL BE COMPACTED TO 100% MAXIMUM DRY DENSITY.
2. THE GRADED AGGREGATE BASE COURSE SHALL BE CONSTRUCTED IN 2 COURSES OF EQUAL THICKNESS AND COMPACTED TO 100% OF THE MAXIMUM DRY DENSITY.
3. A 6 INCH GRADED AGGREGATE BASE COURSE SHALL BE CONSTRUCTED UNDER THE CURB AND GUTTER.
4. APPLY BITUMINOUS PRIME TO COMPACTED GRADED AGGREGATE BASE COURSE.
5. APPLY BITUMINOUS TACK COAT BETWEEN ASPHALT LAYERS.

NOT TO SCALE

CITY OF BALDWIN	INDUSTRIAL/HEAVY COMMERCIAL TRAFFIC TYPICAL TANGENT SECTION (WITH CURB AND GUTTER)

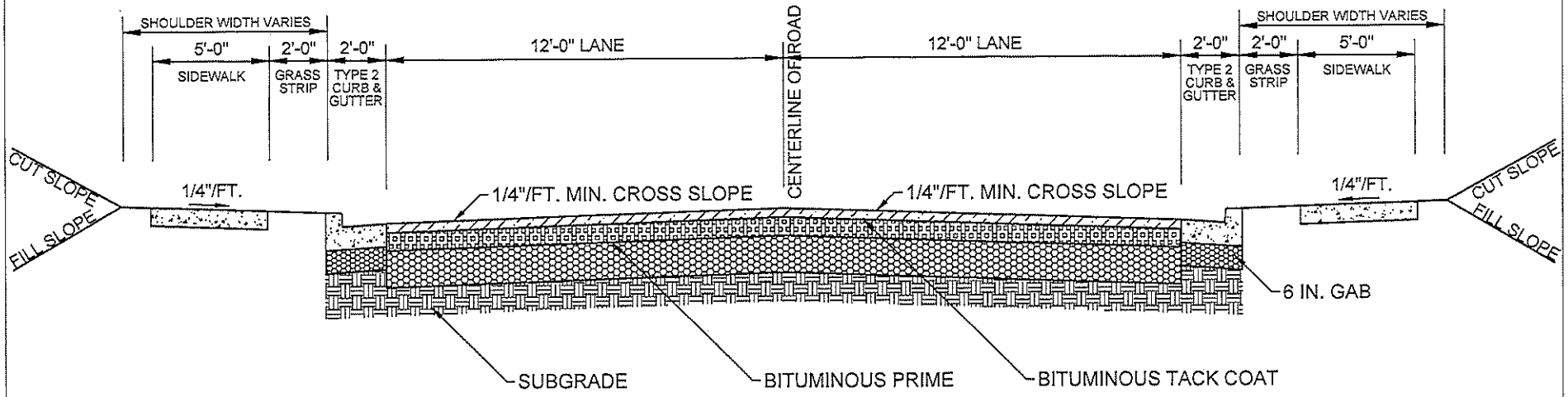


NOTES:

1. THE SUBGRADE SHALL BE COMPACTED TO 100% MAXIMUM DRY DENSITY.
2. THE GRADED AGGREGATE BASE COURSE SHALL BE CONSTRUCTED IN 2 COURSES OF EQUAL THICKNESS AND COMPACTED TO 100% OF THE MAXIMUM DRY DENSITY.
3. A 6 INCH GRADED AGGREGATE BASE COURSE SHALL BE CONSTRUCTED UNDER THE PAVED SHOULDER.
4. APPLY BITUMINOUS PRIME TO COMPACTED GRADED AGGREGATE BASE COURSE.
5. APPLY BITUMINOUS TACK COAT BETWEEN ASPHALT LAYERS.

NOT TO SCALE

CITY OF BALDWIN	INDUSTRIAL/HEAVY COMMERCIAL TRAFFIC TYPICAL TANGENT SECTION (WITHOUT CURB AND GUTTER)



2 IN. 9.5 MM SUPERPAVE SURFACE COURSE (< 10,000 ADT)
OR
2 IN. 12.5 MM SUPERPAVE SURFACE COURSE (> 10,000 ADT)

4 IN. 19 MM SUPERPAVE

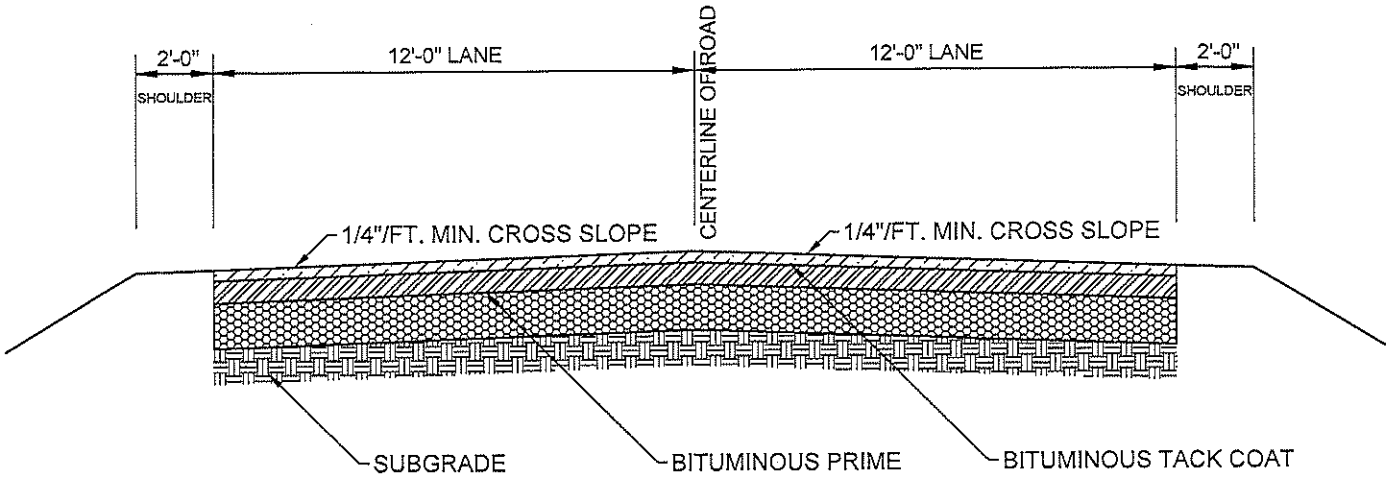
8 IN. GRADED AGGREGATE BASE

NOTES:

1. THE SUBGRADE SHALL BE COMPACTED TO 100% MAXIMUM DRY DENSITY.
2. THE GRADED AGGREGATE BASE COURSE SHALL BE COMPACTED TO 100% OF THE MAXIMUM DRY DENSITY.
3. A 6 INCH GRADED AGGREGATE BASE COURSE SHALL BE CONSTRUCTED UNDER THE CURB AND GUTTER.
4. APPLY BITUMINOUS PRIME TO COMPACTED GRADED AGGREGATE BASE COURSE.
5. THE 19 MM SUPERPAVE SHALL BE CONSTRUCTED IN 2 SEPARATE LIFTS OF EQUAL THICKNESS.
6. APPLY BITUMINOUS TACK COAT BETWEEN ASPHALT LAYERS.

NOT TO SCALE

CITY OF BALDWIN	LIGHT COMMERCIAL TRAFFIC TYPICAL TANGENT SECTION (WITH CURB AND GUTTER)



2 IN. 9.5 MM SUPERPAVE SURFACE COURSE (< 10,000 ADT)
OR
2 IN. 12.5 MM SUPERPAVE SURFACE COURSE (> 10,000 ADT)

4 IN. 19 MM SUPERPAVE

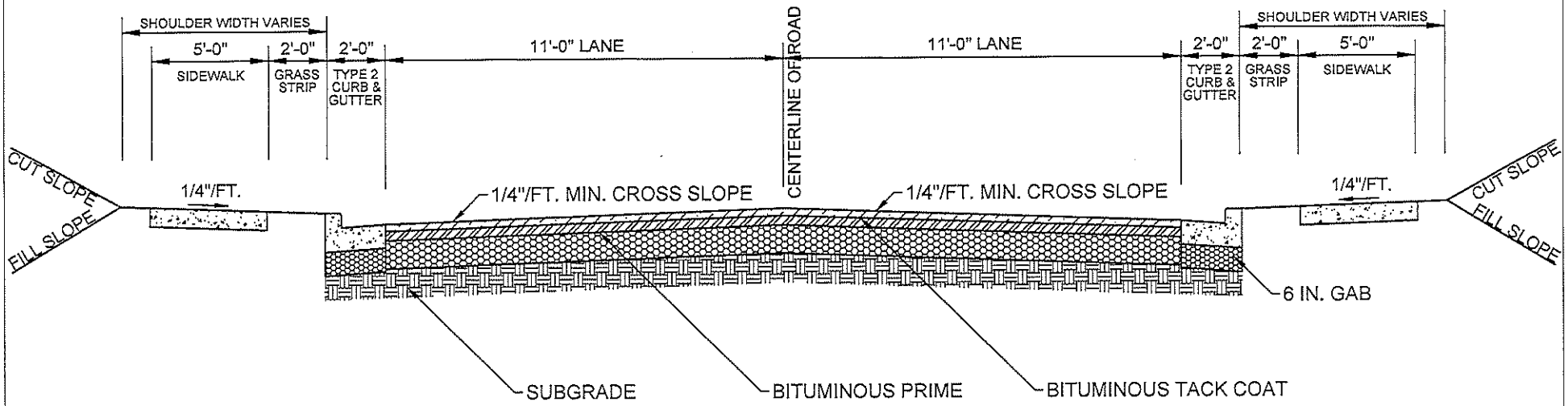
8 IN. GRADED AGGREGATE BASE

NOTES:

1. THE SUBGRADE SHALL BE COMPACTED TO 100% MAXIMUM DRY DENSITY.
2. THE GRADED AGGREGATE BASE COURSE SHALL BE COMPACTED TO 100% OF THE MAXIMUM DRY DENSITY.
3. APPLY BITUMINOUS PRIME TO COMPACTED GRADED AGGREGATE BASE COURSE.
4. THE 19 MM SUPERPAVE SHALL BE CONSTRUCTED IN 2 SEPARATE LIFTS OF EQUAL THICKNESS.
5. APPLY BITUMINOUS TACK COAT BETWEEN ASPHALT LAYERS.

NOT TO SCALE

CITY OF BALDWIN	LIGHT COMMERCIAL TRAFFIC TYPICAL TANGENT SECTION (WITHOUT CURB AND GUTTER)



1.5 IN. 9.5 MM TYPE II SUPERPAVE SURFACE COURSE

2 IN. 19 MM SUPERPAVE

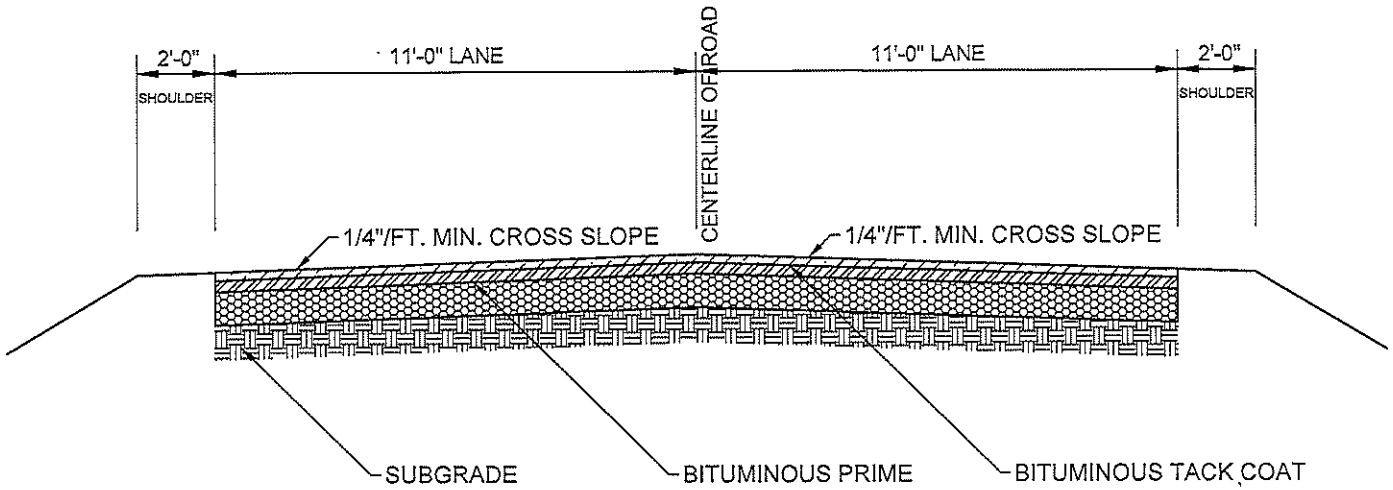
6 IN. GRADED AGGREGATE BASE

NOTES:

1. THE SUBGRADE SHALL BE COMPACTED TO 100% MAXIMUM DRY DENSITY.
2. THE GRADED AGGREGATE BASE COURSE SHALL BE COMPACTED TO 100% OF THE MAXIMUM DRY DENSITY.
3. A 6 INCH GRADED AGGREGATE BASE COURSE SHALL BE CONSTRUCTED UNDER THE CURB AND GUTTER.
4. APPLY BITUMINOUS PRIME TO COMPACTED GRADED AGGREGATE BASE COURSE.
5. APPLY BITUMINOUS TACK COAT BETWEEN ASPHALT LAYERS.

NOT TO SCALE

CITY OF BALDWIN	RESIDENTIAL TYPICAL TANGENT SECTION (WITH CURB AND GUTTER)



1.5 IN. 9.5 MM TYPE II SUPERPAVE SURFACE COURSE

2 IN. 19 MM SUPERPAVE

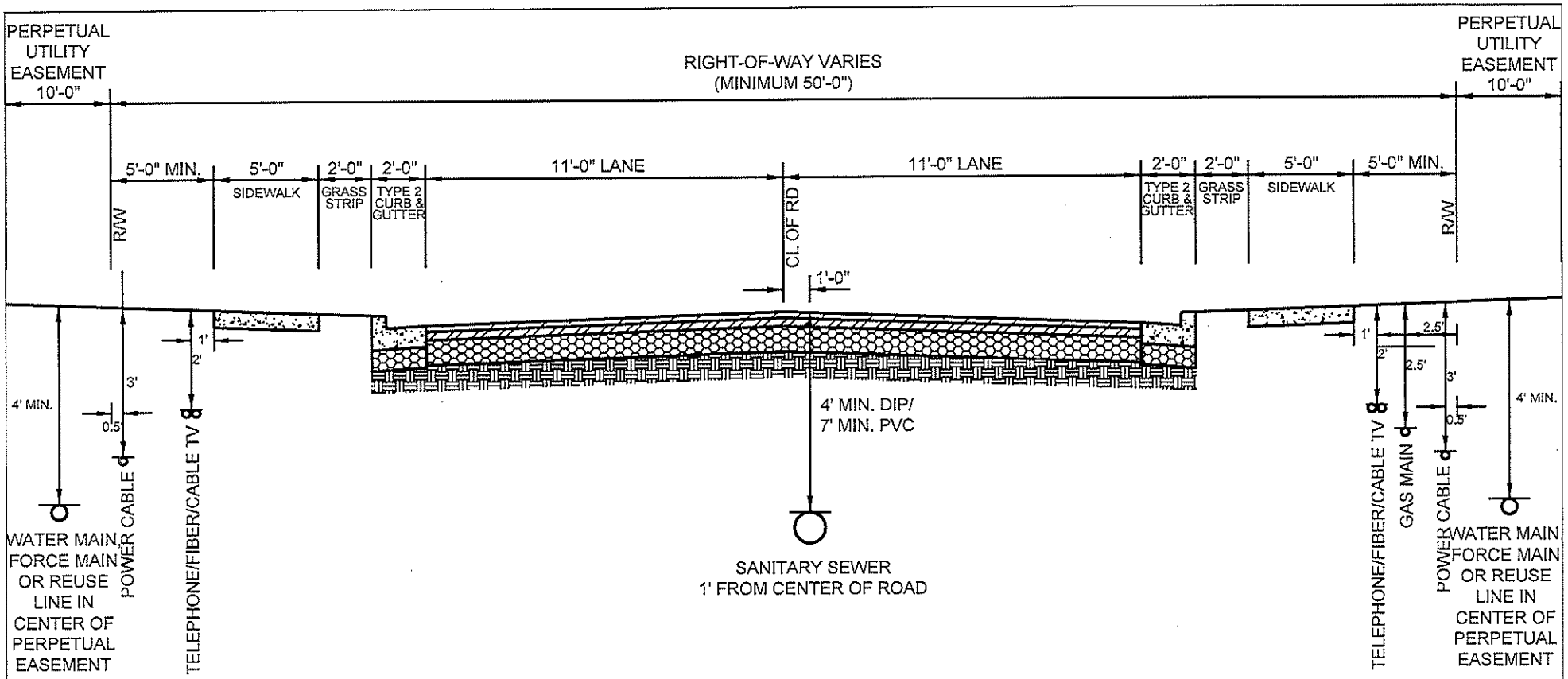
6 IN. GRADED AGGREGATE BASE

NOTES:

1. THE SUBGRADE SHALL BE COMPACTED TO 100% MAXIMUM DRY DENSITY.
2. THE GRADED AGGREGATE BASE COURSE SHALL BE COMPACTED TO 100% OF THE MAXIMUM DRY DENSITY.
3. APPLY BITUMINOUS PRIME TO COMPACTED GRADED AGGREGATE BASE COURSE.
4. APPLY BITUMINOUS TACK COAT BETWEEN ASPHALT LAYERS.

NOT TO SCALE

CITY OF BALDWIN	RESIDENTIAL TYPICAL TANGENT SECTION (WITHOUT CURB AND GUTTER)



NOTES:

1. BEFORE ANY UTILITY IS INSTALLED, THE ENTIRE WIDTH OF THE RIGHT-OF-WAY SHALL BE ROUGH GRADED AND ALL CONCRETE CURB AND GUTTER SET AT FINAL GRADE.
2. THE DEEPEST UTILITIES SHALL BE INSTALLED FIRST TO MINIMIZE ANY POSSIBLE INTERFERENCE WITH LATERALS OR SERVICE LINES.
3. STREET OPEN CUT PERMITS ARE REQUIRED BEFORE ANY PAVEMENT CAN BE CUT FOR ANY PURPOSE.
4. ALL DIMENSIONS IN CUL-DE-SAC STREETS SHALL BE THE SAME AS STANDARD STREET SPACING.
5. EACH UTILITY SHALL BE RESPONSIBLE FOR REPAIR OR ANY DAMAGE WITHIN THE RIGHT-OF-WAY.
6. TELEPHONE/FIBER AND CABLE TV SHALL SHARE THE SAME TRENCH.
7. DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM INSPECTION TESTS IN ACCORDANCE WITH CITY OF BALDWIN, GEORGIA CODE OF ORDINANCES.
8. IT IS RECOMMENDED THAT WATER LINES AND SANITARY SEWER FORCE MAINS BE LOCATED ON OPPOSITE SIDES OF THE STREET IN THE PERPETUAL UTILITY EASEMENT. MINIMUM SEPARATION BETWEEN WATER AND SANITARY SEWER SHALL BE IN ACCORDANCE WITH CITY OF BALDWIN, GEORGIA CODE OF ORDINANCES.

NOT TO SCALE

CITY OF BALDWIN	UTILITY LOCATION IN RESIDENTIAL TYPICAL SECTION

CITY OF BALDWIN, GA
PLAN REVIEW AND INSPECTION FEE SCHEDULE

The fees below are per review. A separate fee will be charged for the initial review and each subsequent review.

Land Disturbance Permit	$150 plus $40 per disturbed acre
Georgia EPD NPDES Fees	per EPD guidelines

Site Development (non-subdivision development)

Concept Plan	$500
Commercial Site Plan	$600 plus $10 per acre
Stormwater and Roads	$700 plus $25 per acre
Wall Plan	$250 plus $50 per wall
Water Plan	$300 plus $10 per acre
Sanitary Sewer Plan	$300 plus $10 per acre
Sanitary Sewer Downstream Analysis	$1,500
Wastewater Pump Station (each)	$1,500
Hydraulic Water Model	$1,500
Oil and Grease Separator or Grease Trap	$500
As-built Water-Sewer Review	$500 plus $10 per acre
As-built Stormwater & Roads Review	$700 plus $25 per acre

Subdivision

Concept Plan	$500
Preliminary Plat	$500 plus $10 per lot
Stormwater and Roads	$500 plus $20 per lot
Wall Plan	$250 plus $50 per wall
Water Plan	$200 plus $10 per lot
Sanitary Sewer Plan	$200 plus $10 per lot
Sanitary Sewer Downstream Analysis	$1,500
Hydraulic Water Model	$1,500
Wastewater Pump Station (each)	$1,500

Final Plat	$400 plus $10 per lot
As-built Water-Sewer Review	$200 plus $10 per lot
As-built Stormwater & Roads Review	$500 plus $20 per lot

Construction Inspection	$0.25 per linear foot of new street
	$0.25 per linear foot of new sanitary sewer line
	$0.25 per linear foot of new water line
	$0.25 per linear foot of new storm drain pipe

If the project is not ready for an inspection upon the arrival of the inspector after the owner/developer or his designee has requested an inspection or the work does not meet requirements, an additional fee will be charged to the owner/developer to compensate the inspector as another inspection will be required.

Preliminary Plat Extension of Time Limit	$0.25 per linear foot of new street
Appeals	$200

Contact Environmental Health Department for fees related to septic system and dumpster review and inspection.

City of Baldwin
As-Built Commercial Site Checklist

Name of Development _____ **City Project No.** _____

Address of Development _____ **Date of Review 1st** _____

2nd _____ **3rd** _____

AS-BUILT STORMWATER MANAGEMENT REPORT

1st	2nd	3rd	
			Provide an as-built stormwater management report with date and signed Professional Engineer's seal.
			Vicinity map with the site boundary delineated.
			Project description, pre-developed and post-developed conditions narrative.
			Mapping of soils from USDA soil survey and location of any site borehole investigations that may have been performed.
			Pre-developed and as-built post-developed drainage area maps and 10% downstream area map with on-site and off-site basins delineated separately. Designation, drainage area, travel path, and study point location of each basin. Topography at 2-foot elevations for all on-site basins. Topography for all off-site basins. Basin delineation corresponds with topography. Basins are delineated and analyzed at each location/study point where runoff leaves the site along each property line.
			Time of concentration calculations for each basin based on the travel path provided on the drainage area maps. Maximum length for sheet flow is 100 ft. Minimum time of concentration used in analysis is 5 minutes.
			Georgia Stormwater Management Manual Stormwater Quality Site Development Review Tool that includes all disturbed basins. Overall site has minimum 80% TSS removal. BMP tracking forms.
			Assure credits used are valid for site (natural conservation area, etc.) NOTE: Easement for natural conservation area must be recorded.
			Stage/storage tables for permanent pool and forebay.
			Required and provided water quality volume calculations. Provided water quality volume is greater than or equal to required water quality volume.
			Required and provided channel protection volume calculations. Provided channel protection volume is greater than or equal to required water quality volume.
			SCS method used for storage volume.
			Hydrograph return period recap, summaries, and reports for the 1, 2, 5, 10, 25, 50, and 100 year storms of all basins including the 10% downstream basin. Post-developed flows are equal to or less than pre-developed flows at each location/study point where runoff leaves the site along each property line and at 10% point.
			Latest 24-hour rainfall data from NOAA Atlas 14, Volume 9, Version 2.

			As-built pond report for each pond with a stage/storage table beginning at the required routing elevation with culvert, orifices, weirs, and discharge data used to develop the pond routing hydrographs. Routing elevation is not lower than permanent pool elevation for a stormwater pond. The highest elevation in the stage/storage table corresponds with the lowest elevation of the dam.
			Outlet control structure detail with as-built dimensions and elevations of all inlets and outlets and drain protection. Diameter and material of outlet pipe and pipe to drain pond. Steps to access inside the OCS.
			Calculations to verify the pond outlet pipe and OCS have adequate capacity for 125% of the 100 year routed outflow or an emergency spillway has been provided.

AS-BUILT SURVEY

1st	2nd	3rd	
			Name of project. Name, address, and phone number of owner/developer, engineer, surveyor, and contractor.
			Tax parcel number, address, zoning, land district, land lot, and county of site.
			Scale of 1 inch = 60 feet or larger detail.
			Topography at 2-foot elevations of the entire pond including downstream side of the dam and within the drainage easement around the pond.
			Minimum required parking spaces. Minimum required handicap accessible spaces. Parking space, aisle dimensions.
			For underground detention systems, proprietary devices, and water quality BMPs, provide dimensions, state plane coordinates, mean sea level elevations, and drainage easements.
			Maximum side slopes of a pond including the downstream side of the dam is 3:1. 15-foot safety bench unless pond slopes are 4:1 or flatter. 15-foot wide aquatic bench if permanent pool is 4 feet or deeper.
			Low point spot elevations in the permanent pool, forebay, in front of OCS and spot elevations along both sides of the top of dam of the pond.
			Delineate and label the 100-year storm elevation, permanent pool elevation (if applicable), and the cleanout elevation of the pond. (Note the corresponding mark on the silt gauge.)
			Delineate and label top of dam/wall elevation (lowest elevation) and minimum width of pond. Minimum top of dam width is 10 feet.
			Minimum 1 foot of freeboard between 100 year elevation and top of dam elevation of pond.
			Delineate and label top of berm elevation between permanent pool and forebay in pond.
			Bottom of forebay elevation is equal to or greater than permanent pool elevation.
			Forebay depth is 4-6 feet.
			Date of field run survey.
			Site boundary and adjacent road name and right-of-way.
			Delineate and label centerline of stream, state waters buffer, and City of Baldwin stream buffer and impervious setback.
			Delineate 100 year floodplain. FIRM panel number and date.
			Delineate and label all drainage and access easements. Ensure easement around the pond is measured a minimum of 20 ft. from the as-built 100-year storm elevation. Include width of easement.

			Delineate and label the silt gauge, benchmark/control point, outlet control structure, and all stormwater drainage structures with state plane coordinates and mean sea level elevations. Drainage structure type and designation that corresponds with designation on the approved construction plans.
			100-year ponding limit and elevation at all inlets. Include intercept efficiency percentage at all catch basins and inlets not at low point.
			Maximum spacing of drainage structures is 500 ft.
			Diameter and material of all storm drain pipes.
			Locate drainage structure at every change of direction and grade of storm drain pipe. Minimum angle between storm drain pipes entering and exiting drainage structure is 90°.
			Storm drain pipes under road are perpendicular to road. Storm drain pipes under roads and in streams are RCP.
			Delineate and label drainage easement around all storm drain pipes and channels. Ensure easement width corresponds with pipe diameter and depth table in Chapter 6 of the City of Baldwin, Georgia Code of Ordinances. Label width of easement. Storm drain pipe is in the center of easement and no buildings or other structures shall be within the easement.
			Outlet control structure detail for each pond with as-built dimensions and elevations of all inlets and outlets and drain protection. Diameter and material of outlet pipe and pipe to drain pond. Steps to access inside the OCS.
			Location of structures, utilities, tree line, drives, lakes, ponds, natural conservation area, etc.
			Delineate and label 12-foot wide access easement to the pond, structural stormwater control, water quality BMP from the right-of-way of a road. Drainage structures are not located within the access easement.
			Riprap at all inlet and outlet headwalls, flared end sections, and safety end sections.
			Signed and dated Professional Engineer's seal and note stating the stormwater management facility is functioning as designed and the required detention storage and outflow rates are being provided.
			Delineate and label fence and gate location.
			Note stating no obstructions shall be built, constructed or planted within the stormwater management facility, its associated drainage or access easements.
			Note stating no construction activity allowed within existing and future floodplain limits without approved Floodplain Management Plan.
			Direction of north in relation to the site shown on the plan (indicate magnetic, true, or grid) and graphic scale.
			Signed registered land surveyor's seal.

AS-BUILT STORM DRAIN PIPE PROFILES

1st	2nd	3rd	
			Storm drain pipe profiles.
			Horizontal and vertical scale.
			Pipe diameter, material, length, and slope.
			Gauge and corrugation of aluminized steel pipe.
			Class of reinforced concrete pipe.
			Ground line.
			25 year/100 year HGL.

			Drainage structure type and designation with invert elevations, top of structure and /or throat elevation for catch basins, top of structure and weir elevations for weir inlets, and inlet elevation for curb and drop inlets.
			Delineate pipe(s) and include upstream structure designation with invert elevation associated with drainage structure that has multiple inlets.
			Maximum drop in drainage structure is 10 feet.
			Minimum cover of 1 foot over pipes.
			Minimum pipe diameter of 18 inches. Minimum roof drain diameter of 12 inches.
			Minimum slope of 0.50%.
			If aluminized steel and HDPE pipes exceed 14% slope, provide documentation that anchor collars were installed per manufacturer's recommendations.
			If RCP exceeds 10% slope, provide documentation that anchor collars were installed per manufacturer's recommendations.
			All utility crossings with diameter, material, and vertical clearance.
			Signed registered land surveyor's seal.
			Signed, dated professional engineer's seal.

AS-BUILT CHANNELS

1st	2nd	3rd	
			As-built cross-section every 200 ft. with dimensions and at every change in cross-section dimension. Minimum bottom width of 2 feet. Maximum side slopes of 3:1 with vegetative lining. Maximum side slopes of 2:1 with riprap or concrete.
			As-built topography at 2-foot elevations within channel drainage easement. Date of survey and reference datum.
			Channel designation
			Drainage area
			Discharge (25 yr. and 100 yr.)
			Runoff coefficient
			Manning's roughness coefficient
			Velocity (25 yr.)
			Normal depth (25 yr. and 100 yr.)
			Overall minimum channel depth
			Channel length and slope
			Lining
			Signed registered surveyor's seal.
			Signed, dated professional engineer's seal.

AS-BUILT STORM DRAIN PIPE CHART

1st	2nd	3rd	
			Upstream and downstream structure type and designation
			Pipe number, diameter, material, length, and slope
			Drainage area
			Discharge
			Storm frequency and intensity (25 yr./100 yr.)
			Runoff coefficient and frequency factor

			Manning's roughness coefficient
			Velocity (25 yr.)
			Maximum velocity is 15 ft/s.
			Signed, dated professional engineer's seal.

AS-BUILT WATER SYSTEM

1st	2nd	3rd	
			Scale of 1 inch = 60 feet or larger detail for plan view.
			All water lines are C-900 and/or DIP.
			Minimum pipe diameter of 6 inches allowed on dead end cul-de-sac streets less than 1,000 feet in length, or lines that are looped. All other areas, minimum pipe diameter is 8 inches.
			Location, diameter, and material of all water mains and service laterals.
			Location and size of vacuum and air release valves (installed at the highest points in the system).
			Delineate and label all fire hydrants.
			Maximum spacing of fire hydrants is 500 feet.
			Delineate and label all water valves and other appurtenances.
			Water valve in every direction at each intersection (i.e. 3 valves at a 3 way intersection, 4 valves at a 4 way intersection).
			Maximum spacing of in line valves is 1,000 feet.
			Location, diameter, and material of all water lines surrounding the site.
			Specify methods and tie-in locations with mains (i.e. tapping sleeve and valve labeled with the diameter).
			Location and size of water meters. Water meters are located a maximum of 3 feet beyond the property line.
			Long side service has been installed with 2-inch PVC sleeves under pavement.
			Each service has its own tap from the distribution line. No double services allowed.
			Label all road right-of-ways and easements.
			Steel casing for water mains under pavement. Length of steel casing.
			Dimensions, stations, and labels of water line relative to features such as right-of-way, centerlines, edge of pavement, coordinates, etc.
			Fire hydrants are a minimum of 6 feet behind curb.
			Water valves are outside of pavement.
			12-gauge, solid strand detection wire shall be installed above all waterlines with waterproof connectors and connections at every valve and hydrant.
			Marking tape with "Caution Buried Waterline" shall be installed approximately 18 inches above all waterlines.
			Cross minor streams/creeks under or beyond culvert/storm drain pipe. Plan view and cross-section of crossing with ground line, vegetative buffer, side slopes, depth of cover, creek, culvert/storm drain pipe, elevations, water line and any fittings. Additional easements as necessary.
			Aerial crossings shall not be permitted.
			Table with columns for all water line diameter, material, and length.
			Signed registered land surveyor's seal.
			Signed, dated professional engineer's seal.

AS-BUILT SANITARY SEWER SYSTEM

1st	2nd	3rd	
			All sanitary sewer main testing and construction completed.
			Gravity sanitary sewer main video has been submitted to City
			Scale of 1 inch = 60 feet or larger detail for plan view.
			Elevation data referenced to mean sea level and survey referenced to state plane coordinate system including all new manholes.
			Label perpetual sanitary sewer easements.
			Label all sanitary sewer pipe diameter and material.
			Label all manholes and service line cleanouts.
			Label manhole deflection angles.
			SDR 26 PVC sanitary sewer lines under pavement shall be constructed with at least 7 ft. of pipe cover. Otherwise DIP shall be used.
			Minimum cover shall be 3 feet over DIP sanitary sewer pipes. Except under roadways shall be 4 ft.
			Steel casing for PVC sanitary sewer lines crossing under pavement. Size and length of steel casing.
			Gravity sanitary sewer pipe shall be SDR 26 PVC or DIP Pressure Class 350 for 8"-12" and Pressure Class 250 or 350 for 14"-36" depending on design with Tnemec Perma-shield PL or Protecto 401 interior coating. Cement lining of DIP is not allowed for sanitary sewer applications.
			Maximum spacing of manholes is 400 feet.
			Minimum sanitary sewer pipe diameter of 8 inches. Minimum service lateral diameter is 6 inches.
			Minimum slope is 0.50%.
			Maximum slope is 15.0%.
			Service laterals are SDR 26 PVC.
			Rim elevation of manholes outside of pavement are 1.5 feet above ground unless located in a landscaped area or close to the edge of pavement.
			Manhole located at every change of direction and grade of sanitary sewer line. Minimum angle between sanitary sewer lines entering and exiting manhole is 90°.
			Service line connections to gravity sanitary sewer line or manhole for residential. Commercial service line connections shall be connected to a manhole.
			A 20 foot permanent, recorded easement around all 8 inch through 18 inch diameter sanitary sewer lines with up to 20 feet of cover and a 40 foot permanent, recorded easement shall be required if cover is over 20 feet outside of right-of-way. A 40 foot permanent, recorded easement on all 24 inch diameter sanitary sewer lines regardless of depth of cover. The sanitary sewer line is in the center of the easement and no buildings or other structures are within the easement. Easements shown on all plat.
			Location, diameter, and material of all sanitary sewer lines.
			Location, diameter, and material of all service laterals.
			Location, diameter, and material of all force mains.
			Location and size of grease trap(s). Minimum size is 1,500 gallons.
			Manholes numbered on the plan with corresponding numbers on the profile.
			Minimum drop from invert in to invert out elevation is 0.20 feet. Any drop from invert in to invert out elevation greater than 2 feet constructed as an outside drop manhole.
			No sanitary sewer lines installed through stormwater/detention ponds including the dam or within its drainage easement.

			Location, diameter, and material of all sanitary sewer lines surrounding the site.
			Location, size, and invert elevations of all special features such as connections to sanitary sewers, concrete encasement, collar walls, elevated sanitary sewer piers, etc.
			Location of all structures, above and below ground, particularly water mains, gas mains, storm drains, utility conduits, etc.
			Label all streets, right-of-ways, and easements.
			Dimensions, stations, and labels to indicate location of sanitary sewer line relative to features such as right-of-way, centerlines, edge of pavement, coordinates, etc.
			Aerial sanitary sewer lines above the 50-year flood line and delineated as such on the plans.
			Location and elevation of adjacent parallel streambeds and adjacent lake/pond surfaces on the plan and profile.
			No trees within permanent water or sanitary sewer easements or above fire protection water mains.
			Minimum of 10 feet horizontal distance between water and sanitary sewer lines and storm drain pipes.
			Minimum 18 inches vertical distance between water and sanitary sewer lines.
			Minimum 1 foot vertical distance between water and sanitary sewer lines and storm drain pipe.
			Marking tape with "Caution Buried Sanitary Sewer line" shall be installed approximately 18 inches above all sanitary sewer lines.
			All sewage pumping stations shall have an auxiliary power source and yard hydrant for wash down purposes. A remote telemetry system compatible with the City's existing system shall be provided.
			Sand traps and oil separators with sample station manholes installed in all sanitary sewer service lines from service stations, garages, car washes, and similar operations. Domestic sewage shall not pass through sand traps, oil separators, or sample stations.
			Grease traps and sample station manholes installed in process waste lines of all sanitary service sewers for commercial, industrial, and institutional establishments with food preparation areas. Domestic sewage shall not pass through grease traps or sample stations.
			Rainwater prevented from entering the sanitary sewer at all dumpster pad locations.
			Oil separators sized to handle two times the expected flow rate.
			Sample station manholes may be required on commercial, industrial, and institutional sanitary service sewers. Domestic sewage shall not pass through sample station manholes.
			Signed registered land surveyor's seal.
			Signed, dated professional engineer's seal.

AS-BUILT SANITARY SEWER PROFILES

1st	2nd	3rd	
			Sanitary sewer profiles.
			Horizontal and vertical scale.
			Pipe diameter, material, length, and slope.
			Ground line.
			Manhole numbers corresponding to plan numbers.
			Manhole elevations (top, invert in, invert out, outside drop at top and bottom).
			Minimum cover of 4 foot over pipes.

			Minimum pipe diameter of 8 inches.
			Minimum slope of 0.50%.
			Maximum slope of 15.0%.
			All utility crossings with diameter, material, and vertical clearance.
			Signed registered land surveyor's seal.
			Signed, dated professional engineer's seal.

MISCELLANEOUS AS-BUILT REQUIREMENTS

1st	2nd	3rd	
			Provide a CD with digital as-built plans in AutoCAD, signed, dated pdf file(s), and stormwater management report.
			Provide an ASCII point file in PNEZD format with point locations of all structures, valves, manholes, water meters, etc.
			Submit a maintenance agreement that includes all structural stormwater controls.
			Submit professional certifications for installation of site specific items such as retaining walls, proprietary devices, etc.
			DRI requirements have been completed.
			All punchlist items from field inspection have been completed.

City of Baldwin
Commercial Site Development Checklist

Name of Development _____ **City Project No.** _____

Address of Development _____ **Date of Review 1st** _____

2nd _____ **3rd** _____

STORMWATER MANAGEMENT REPORT

1st	2nd	3rd	
			Provide a stormwater management report with date and signed Professional Engineer's seal.
			Vicinity map with the site boundary delineated.
			Project description, pre-developed and post-developed conditions narrative.
			Mapping of soils from USDA soil survey and location of any site borehole investigations that may have been performed.
			Pre-developed and post-developed drainage area maps and 10% downstream area map with on-site and off-site basins delineated separately. Designation, drainage area, travel path, and study point location of each basin. Topography at 2-foot elevations for all on-site basins. Topography for all off-site basins. Basin delineation corresponds with topography. Basins are delineated and analyzed at each location/study point where runoff leaves the site along each property line.
			Time of concentration calculations for each basin based on the travel path provided on the drainage area maps. Maximum length for sheet flow is 100 ft. Minimum time of concentration used in analysis is 5 minutes.
			Georgia Stormwater Management Manual Stormwater Quality Site Development Review Tool, latest version that includes all disturbed basins. Overall site has minimum 80% TSS removal. BMP tracking forms.
			Assure credits used are valid for site (natural conservation area, etc.) NOTE: Easement for natural conservation area must be recorded.
			Stage/storage tables for permanent pool and forebay.
			Required and provided water quality volume calculations. Provided water quality volume is greater than or equal to required water quality volume. Include water quality orifice sizing calculation if micropool extended detention pond or wet extended detention pond is being proposed.
			Required and provided channel protection volume calculations. Provided channel protection volume is greater than or equal to required water quality volume. Include channel protection orifice sizing calculation.
			SCS method used for storage volume.
			Hydrograph return period recap, summaries, and reports for the 1, 2, 5, 10, 25, 50, and 100 year storms of all basins including the 10% downstream basin. Post-developed flows are equal to or less than pre-developed flows at each location/study point where runoff leaves the site along each property line and at 10% point.
			Use the current 24-hour rainfall data from NOAA Atlas 14, Volume 9, Version 2.

			Pond report for each pond with a stage/storage table beginning at the required routing elevation with culvert, orifices, weirs, and discharge data used to develop the pond routing hydrographs. Routing elevation is not lower than permanent pool elevation for a stormwater pond. The highest elevation in the stage/storage table corresponds with the lowest elevation of the dam.
			Outlet control structure detail for each pond with dimensions and elevations of all inlets and outlets and drain protection. Diameter and material of outlet pipe and pipe to drain pond. Steps to access inside the OCS.
			Calculations to verify the pond outlet pipe and OCS have adequate capacity for 125% of the 100 year routed outflow or an emergency spillway has been provided.

SITE, GRADING, AND ACCESS PLANS; DETAILS

1st	2nd	3rd	
			Signed and dated Professional Engineer's seal on all plan sheets.
			Boundary survey of entire parcel(s). Include adjacent road(s), right-of-way, and adjoining property owners.
			Name of project, name, address, and phone number of owner/developer, engineer, surveyor, and 24-hour contact and cell phone number on cover sheet.
			Tax parcel number, address, zoning, land district, land lot, and county of site on cover sheet.
			Vicinity map with the site boundary delineated and road names.
			Project description. Proposed use of each lot. Boundary area. Disturbed area and volume.
			Scale of 1 inch = 60 feet or larger detail for site and grading plan view. Scale of 1 inch = 20 feet or larger for access plan.
			Delineate city limits, county lines, land lot lines.
			Setback lines. Buffers.
			Parking space calculations. Handicap accessible spaces. Parking space, aisle dimensions.
			Provide topography at 2-foot elevations of the entire site. Include source of topography and reference datum.
			Delineate existing features and topography with dashed, lighter lines. Delineate proposed features and topography with solid, darker lines.
			Existing and proposed right-of-way, roads, driveway, utility locations and easements.
			Location of existing and proposed structures, cemeteries, tree line, drives, lakes, ponds, streams, natural conservation area, landscaping, etc.
			Distance between structures and property lines.
			Width of existing roadway pavement, lane widths, and lane lines on access plan.
			Distance from centerline of existing roadway to right-of-way on access plan.
			Names of all existing roads adjacent to site. State route numbers and US highway numbers if applicable.
			Distance from one corner of the site, measured along the right-of-way, to the centerline of the nearest intersection on access plan. Name of intersecting road or highway.
			Posted speed limit of existing roadway on which proposed access is shown. Note if none exists.
			Location and type of existing roadway signs within the right-of-way along the site being developed. Note if none exists.

			Proposed deceleration lane(s), left turn lane(s), tapers, and lane shifts. Include lengths, widths, and pavement markings.
			Driveway/roadway width, return radius of face of curb or edge of asphalt if no curb.
			Angle of proposed driveway(s)/roadway(s) centerline and existing intersecting roadway centerline.
			Distance between driveway(s)/roadway(s) and side property line measured along right-of-way.
			Distance between driveway(s)/roadway(s) if more than one is proposed.
			Access profile with all lanes of existing roadway and proposed driveway/roadway access to the right-of-way line. Include slope of existing and proposed roadways and driveways.
			Intersection and stopping sight distances for each proposed driveway and roadway in accordance with AASHTO's A Policy on Geometric Design of Highways and Streets, latest edition.
			Stormwater management system.
			Maximum side slopes of a pond including the downstream side of the dam is 3:1. Maximum slopes elsewhere on site is 2:1. 15-foot safety bench unless pond slopes are 4:1 or flatter. 15-foot wide aquatic bench if permanent pool is 4 feet or deeper.
			Low point spot elevations in the permanent pool, forebay, in front of OCS and spot elevations along both sides of the top of dam of the pond.
			Delineate and label the 100-year storm elevation, permanent pool elevation (if applicable), and the cleanout elevation of the pond. (Note the corresponding mark on the silt gauge.)
			Delineate and label top of dam/wall elevation (lowest elevation) and minimum width of top of dam. Minimum top of dam width is 10 feet.
			Minimum of 1 foot of freeboard between 100 year elevation and top of dam elevation of pond.
			Delineate and label top of berm elevation between permanent pool and forebay in pond.
			Bottom of forebay elevation is equal to or greater than permanent pool elevation.
			Forebay depth is 4-6 feet.
			Dimensions and elevations for underground detention system.
			Dimensions and elevations for proprietary device or other water quality BMP.
			Location of existing and proposed conveyance systems and utilities.
			Minimum of 1 foot of cover over all storm drain pipes.
			Mapping of soils from USDA soil survey and location of any site borehole investigations that may have been performed.
			Delineate and label centerline of stream, state waters buffer, and City of Baldwin buffer and impervious setback.
			Delineate 100 year floodplain. FIRM panel number and date.
			Delineate and label all drainage and access easements. Ensure easement around the pond is measured a minimum of 20 ft. from the 100-year storm elevation. Include width of easement.
			Delineate and label the silt gauge, benchmark/control point, outlet control structure, and all stormwater drainage structures with state plane coordinates and mean sea level elevations. Drainage structure type and designation that corresponds with designation on the approved construction plans.
			100-year ponding limit and elevation at all inlets. Include intercept efficiency percentage at all catch basins and inlets not at low point.
			Maximum spacing of drainage structures is 500 ft.
			Diameter and material of all storm drain pipes.

			Locate drainage structure at every change of direction and grade of storm drain pipe. Minimum angle between storm drain pipes entering and exiting drainage structure is 90°.
			Storm drain pipes under road are perpendicular to road. Storm drain pipes under roads and in streams are RCP.
			Delineate and label drainage easement around all storm drain pipes and channels. Ensure easement width corresponds with pipe diameter and depth table in Chapter 6 of the City of Baldwin, Georgia Code of Ordinances. Label width of easement. Storm drain pipe shall be in the center of easement and no buildings or other structures shall be within the easement.
			Outlet control structure detail for each pond with dimensions and elevations of all inlets and outlets and drain protection. Diameter and material of outlet pipe and pipe to drain pond. Steps to access inside the OCS. Anti-seep collar on outlet pipe.
			Delineate and label 12-foot wide access easement to the pond, structural stormwater control, water quality BMP from the right-of-way of a road. Drainage structures are not located within the access easement.
			Riprap at all inlet and outlet headwalls, flared end sections, and safety end sections.
			Delineate and label fence and gate location. Fence and gate shall be a minimum of 20 feet from 100 year ponding elevation and along outer perimeter of top of dam.
			Plans shall include all stormwater structural and non-structural controls included on the Stormwater Quality Site Development Review Tool. If natural conservation area is delineated, include a note stating that the natural conservation area shall remain undisturbed.
			Direction of north in relation to the site shown on the plan (indicate magnetic, true, or grid) and graphic scale.
			Note stating no obstructions shall be built, constructed or planted within the stormwater management facility, its associated drainage or access easements.
			Location of stumps, materials, debris to be buried onsite on the plans. If the debris is to be hauled offsite, include offsite location. Must meet GA DNR code 391-3-4.06.
			Landscape plan.
			Wall plans, profiles, and details. See retaining wall checklist. Include a note on the plans if wall plans are being submitted as a separate permit. A land disturbance permit will not be issued until wall plans have been approved.
			Construction details.

WATER SYSTEM

1st	2nd	3rd	
			"Water System Addition and Expansion Form" shall be completed and submitted with the plans. The plans will not be reviewed until the completed form has been received.
			In accordance with the Minimum Standards for Public Water Systems by the Drinking Water and Engineering Program of the Environmental Protection Division, the developer and the developer's engineer are solely responsible for all necessary water system extension design, hydraulic calculations, and analysis which determine the availability of water supply for the site. Submission of waterline plans indicates that the developer and the developer's engineer have indeed conducted the required hydraulic analysis and the City of Baldwin and their consulting engineer appropriately assume so. The city and its consulting engineer may or may not request evidence and documentation of said design work on a case by case basis at their discretion. The city's decision not to request this documentation does not relieve the developer and the developer's engineer from their

			responsibility to perform all necessary water system extension design, hydraulic calculations, and analysis which determine the availability of water supply for the site.
			The owner/developer or his designee shall provide or conduct his own water pressure and flow tests required for design, including personnel and equipment. All testing shall be scheduled in advance with the Water Department and conducted in their presence.
			Address water capacity with the appropriate City representative.
			Signed and dated Professional Engineer's seal on all plan sheets.
			Provide topography at 2-foot elevations of the entire site. Source of topography. Elevation data referenced to mean sea level (MSL).
			Scale of 1 inch = 60 feet or larger detail for plan view.
			All water lines shall be C-900 and/or DIP.
			Minimum pipe diameter of 6 inches allowed on dead end cul-de-sac streets less than 1,000 feet in length, or lines that are looped. All other areas, minimum pipe diameter shall be 8 inches.
			Location, diameter, and material of all water mains and service laterals.
			Location and size of vacuum and air release valves (to be installed at the highest points in the system).
			Delineate and label all existing and proposed fire hydrants.
			Maximum spacing of fire hydrants shall be 500 feet.
			Delineate and label all existing and proposed water valves and other appurtenances.
			Water valve in every direction at each intersection (i.e. 3 valves at a 3 way intersection, 4 valves at a 4 way intersection).
			Maximum spacing of in line valves is 1,000 feet.
			Location, diameter, and material of all existing water lines surrounding the proposed site.
			Specify methods and tie-in locations with existing mains (i.e. tapping sleeve and valve labeled with the diameter).
			Location and size of water meters. Water meters shall be located a maximum of 3 feet beyond the property line.
			Long side service shall be installed with 2-inch PVC sleeves under pavement.
			Each service shall have its own tap from the distribution line. No double services allowed.
			Label all existing and proposed road right-of-ways and easements.
			Specify steel casing for water mains under existing or proposed pavement. Length of steel casing.
			Dimensions, stations, and labels to indicate proposed location of water line relative to features such as right-of-way, centerlines, edge of pavement, coordinates, etc.
			Fire hydrants shall be a minimum of 6 feet behind curb.
			Water valves shall be outside of pavement.
			12-gauge, solid strand detection wire shall be installed above all waterlines with waterproof connectors and connections at every valve and hydrant.
			Marking tape with "Caution Buried Waterline" shall be installed approximately 18 inches above all waterlines.
			Cross minor streams/creeks under or beyond culvert/storm drain pipe. Plan view and cross-section of crossing with existing and proposed ground line, vegetative buffer, side slopes, depth of cover, creek, culvert/storm drain pipe, elevations, proposed water line and any fittings necessary. Provide additional easements as necessary.
			Aerial crossings shall not be permitted.
			Table with columns for all water line diameter, material, and length.

SANITARY SEWER SYSTEM

1st	2nd	3rd	
			"Sanitary Sewer Extension Submittal Form" shall be completed and submitted with the plans. The plans will not be reviewed until the completed form has been received.
			Address sanitary sewer capacity with the appropriate City representative.
			Signed and dated Professional Engineer's seal on all plan sheets.
			Provide topography at 2-foot elevations of the entire site. Source of topography. Elevation data referenced to mean sea level (MSL). Manhole horizontal location referenced to state-plane coordinate system.
			Scale of 1 inch = 60 feet or larger detail for plan view.
			Delineate limits of 100 year floodplain.
			Delineate all phases of the development. In the event the site is developed in phases, the final construction plans for sanitary sewers may be submitted in phases. At the time the first phase is submitted, the engineer shall submit one (1) copy of the preliminary layout of the entire sanitary sewer system. This layout shall show all lines required to serve any lots to be developed and any surrounding property that may be served through the property. The site plan for each phase shall contain a location drawing showing the relationship of the phase to the total project and to the surrounding streets and sanitary sewer outfalls.
			Master plan view of entire sanitary sewer line plan delineating lots, lot numbers, laterals, manholes, manhole numbers, etc.
			Plan and profile sheets for all sanitary sewer lines except service laterals. Horizontal and vertical scale for profiles. Plan view on same sheet as the profile.
			All utility and storm drain pipe crossings with diameter, material, and vertical clearance on profile.
			Label manhole deflection angles.
			SDR 26 PVC sanitary sewer lines under existing or proposed pavement shall be constructed with at least 7 ft. of pipe cover. Otherwise DIP shall be used with a minimum of 4 ft. of cover.
			Specify steel casing for sanitary sewer lines crossing under existing pavement. Size and length of steel casing.
			Minimum cover of 3 feet over DIP sanitary sewer lines. Minimum cover of 4 feet over PVC sanitary sewer pipes outside of pavement.
			Gravity sanitary sewer pipe shall be SDR 26 PVC or DIP Pressure Class 350 for 8"-12" and Pressure Class 250 or 350 for 14"-36" depending on design with Tnemec Perma-shield PL or Protecto 401 interior coating. Cement lining of DIP is not allowed for sanitary sewer applications.
			Maximum spacing of manholes is 400 feet.
			Minimum sanitary sewer pipe diameter of 8 inches. Minimum service lateral diameter shall be 6 inches.
			Minimum slope shall be 0.50%.
			Maximum slope shall be 15.0%.
			Bedding shall be Class 4 or greater for DIP and Class 5 or greater for PVC.
			Service laterals shall be SDR 26 PVC.
			Rim elevation of manholes outside of pavement shall be 1.5 feet above ground unless located in a landscaped area or close to the edge of pavement.
			Locate manhole at every change of direction and grade of sanitary sewer line.
			Label deflection angles between pipes at manholes. Minimum angle between sanitary sewer lines entering and exiting manhole shall be 90°.

			Service line connections shall be to gravity sanitary sewer line or manhole for residential. Commercial service line connections shall be connected to a manhole.
			A 20 foot permanent, recorded easement around all 8 inch through 18 inch diameter sanitary sewer lines with up to 20 feet of cover and a 40 foot permanent, recorded easement shall be required if cover is over 20 feet outside of right-of-way. A 40 foot permanent, recorded easement shall be required on all 24 inch diameter sanitary sewer lines regardless of depth of cover. The sanitary sewer line shall be in the center of the easement and no buildings or other structures shall be within the easement. Easements shall be shown on all plans including the landscape plan. All sanitary sewer easements shall be fully executed prior to preliminary plat approval.
			Line of existing and proposed ground, grade and length of sanitary sewer line between each manhole, invert in and out elevation of each manhole, and rim elevation of each manhole.
			Location, diameter, and material of all sanitary sewer lines.
			Location, diameter, and material of all service laterals.
			Location, diameter, and material of all force mains.
			Location and size of grease trap(s). Minimum size is 1,500 gallons.
			Manholes numbered on the plan with corresponding numbers on the profile.
			Minimum drop from invert in to invert out elevation is 0.20 feet. Any drop from invert in to invert out elevation greater than 2 feet shall be constructed as an outside drop manhole.
			No sanitary sewer lines shall be installed through stormwater/detention ponds including the dam or within its drainage easement.
			Location, diameter, and material of all existing sanitary sewer lines surrounding the proposed site.
			Location, size, and invert elevations of all special features such as connections to sanitary sewers, concrete encasement, collar walls, elevated sanitary sewer piers, etc.
			Location of all structures, above and below ground, particularly water mains, gas mains, storm drains, utility conduits, etc.
			Label all existing and proposed streets, right-of-ways, and easements.
			Dimensions, stations, and labels to indicate proposed location of sanitary sewer line relative to features such as right-of-way, centerlines, edge of pavement, coordinates, etc.
			Aerial crossings shall not be permitted unless there is no other alternative. Aerial sanitary sewer lines shall be above the 50-year flood line and delineated as such on the plans.
			Location and elevation of adjacent parallel streambeds and adjacent lake/pond surfaces on the plan and profile.
			Sanitary sewer details correspond with city standard details, latest edition.
			No trees within permanent water or sanitary sewer easements or above fire protection water mains.
			Minimum of 10 feet horizontal distance between water and sanitary sewer lines and storm drain pipes.
			Minimum 18 inches vertical distance between water and sanitary sewer lines.
			Minimum 1 foot vertical distance between water and sanitary sewer lines and storm drain pipe.
			Marking tape with "Caution Buried Sanitary Sewer line" shall be installed approximately 18 inches above all sanitary sewer lines.
			All sewage pumping stations shall have an auxiliary power source and yard hydrant for wash down purposes. A remote telemetry system compatible with the City's existing system shall be provided.
			Sand traps and oil separators with sample station manholes shall be installed in all sanitary sewer service lines from service stations, garages, car washes, and similar operations.

			Domestic sewage shall not pass through sand traps, oil separators, or sample stations.
			Grease traps and sample station manholes shall be installed in process waste lines of all sanitary sewers for commercial, industrial, and institutional establishments with food preparation areas. Domestic sewage shall not pass through grease traps or sample stations.
			Rainwater shall be prevented from entering the sanitary sewer at all dumpster pad locations. Method shall be detailed on drawings.
			Grease trap and oil separator details shall appear on the drawings and shall be approved prior to installation.
			Oil separators shall be sized to handle two times the expected flow rate.
			Sample station manholes may be required on commercial, industrial, and institutional sanitary service sewers. Domestic sewage shall not pass through sample station manholes.

STORM DRAIN PIPE PROFILES

1st	2nd	3rd	
			Horizontal and vertical scale.
			Storm drain pipe profiles.
			Pipe diameter, material, length, and slope.
			Gauge and corrugation of aluminized steel pipe.
			Class of reinforced concrete pipe.
			Existing and proposed ground lines. Tie proposed ground line into existing ground line downstream of headwalls, flared end sections, and safety end sections.
			25 year/100 year HGL.
			Drainage structure type and designation with invert elevations, top of structure and /or throat elevation for catch basins, top of structure and weir elevations for weir inlets, and inlet elevation for curb and drop inlets.
			Delineate pipe(s) and include upstream structure designation with invert elevation associated with drainage structure that has multiple inlets.
			Maximum drop in drainage structure is 10 feet.
			Minimum cover of 1 foot over pipes.
			Minimum pipe diameter of 18 inches. Minimum roof drain diameter of 12 inches.
			Minimum slope of 0.50%.
			If aluminized steel and HDPE pipes exceed 14% slope, specify quantity and spacing of anchor collars. Maximum slope of 15.0%.
			If RCP exceeds 10% slope, specify quantity and spacing of anchor collars.
			All utility crossings with diameter, material, and vertical clearance.
			Signed, dated professional engineer's seal.

STORM DRAIN PIPE CHART

1st	2nd	3rd	
			Upstream and downstream structure type and designation
			Pipe number, diameter, material, length, and slope
			Drainage area
			Discharge
			Storm frequency and intensity (25 yr./100 yr.)

			Runoff coefficient and frequency factor
			Manning's roughness coefficient
			Velocity (25 yr.)
			Maximum velocity is 15 ft/s.
			Signed, dated professional engineer's seal.

CHANNELS

1st	2nd	3rd	
			Cross-section with dimensions. Minimum bottom width of 2 feet. Maximum side slopes of 3:1 with vegetative lining. Maximum side slopes of 2:1 with riprap or concrete.
			Channel designation
			Drainage area
			Discharge (25 yr. and 100 yr.)
			Runoff coefficient
			Manning's roughness coefficient
			Velocity (25 yr.)
			Normal depth (25 yr. and 100 yr.)
			Overall minimum channel depth
			Channel length and slope
			Lining
			Signed, dated professional engineer's seal.

NOTES

1st	2nd	3rd	
			No additional construction or improvements including but not limited to walls, signs, fences, sprinkler system, lights, etc. will be allowed within the road right-of-way.
			All temporary traffic control shall be in accordance with the Manual on Uniform Traffic Control Devices, latest edition.
			Sawcut along edge of existing pavement to provide joint uniformity prior to placement of proposed pavement.
			Grates with bars shall be perpendicular to road.
			The throat of curb inlets shall not exceed 8 inches.
			HDPE pipe shall conform to the requirements of AASHTO M-294 and AASHTO MP7, Type S & D. Connections shall use a rubber gasket, which conforms to ASTM F-477. Installation shall be in accordance with ASTM Recommended Practice D-2321, AASHTO Section 30, or with Section 550 of the Georgia Department of Transportation Standard Specifications Construction of Transportation Systems, latest edition.
			All RCP pipe joints shall be bell & spigot types with a rubber gasket conforming to ASTM C-443. The pipe shall be manufactured in accordance with AASHTO M-170 and/or ASTM C-76. Class of pipe and wall thickness shall be in accordance with 1030-D, Georgia DOT specification, Table No. 1. Installation shall be in accordance with Section 550 of the Georgia Department of Transportation Standard Specifications Construction of Transportation Systems, latest edition.
			No obstructions shall be built, constructed or planted within the stormwater management facility, its associated drainage or access easements.
			Detention/stormwater pond or sediment basin/storage shall be installed and functioning prior to any major grading or impervious surface construction.

			Developer shall clean out accumulated sediment in stormwater/detention pond at end of construction once disturbed areas have been stabilized.
			Wetland certification: The design professional, whose seal appears hereon, certifies the following: 1) the National Wetland Inventory maps have been consulted; and, 2) the appropriate plan sheet [ ] does / [ ] does not (check appropriate box) indicate areas of united states army corps of engineers jurisdictional wetlands as shown on the maps; and, 3) if wetlands are indicated, the land owner or developer has been advised that land disturbance of protected wetlands shall not occur unless the appropriate federal wetlands alteration ("section 404") permit has been obtained.
			City of Baldwin assumes no responsibility for overflow or erosion of natural or artificial drains beyond the extent of the street right-of-way.
			Professional certification for site specific items such as retaining walls, proprietary devices, etc. stating said items have been constructed/installed in accordance with the approved design and manufacturer's recommendations shall be required prior to issuance of certificate of occupancy.
			Prior to construction, soil design parameters stated on the construction wall details including but not limited to allowable soil bearing pressure, equivalent lateral fluid pressure (active and passive), internal angle of friction, coefficient of friction, and soil density shall be field-verified by a geotechnical firm. A corresponding written report with the seal and signature of a professional engineer registered in the state of Georgia and employed by the geotechnical firm field verifying the soil design parameters shall be submitted to the Public Works Director prior to construction of the wall. If there is a discrepancy between field-verified soil parameters and those specified on the construction plan, construction shall not proceed until applicable design modifications have been submitted by the wall design engineer of record and have been reviewed by City of Baldwin.
			All water and sanitary sewer line materials and construction shall be in accordance with City of Baldwin Standard Specifications and Details, latest edition.
			All water and sanitary sewer facilities shall be installed by a licensed utility contractor in the State of Georgia.
			Water meters shall be installed a maximum of 3 feet beyond the property line.
			12-gauge, solid strand detection wire shall be installed above all waterlines with waterproof connectors and connections at every valve and hydrant.
			Marking tape with "Caution Buried Waterline" shall be installed approximately 18 inches above all waterlines.
			All water and sanitary sewer construction shall be inspected and tested as per Baldwin Standards prior to final acceptance by the City.
			As-Built water line record drawings (hard copies and AutoCAD and signed, dated pdf digital files) for this site shall be submitted and approved prior to final plat approval. As-built drawings shall be prepared on the City of Baldwin's coordinate system.
			The City of Baldwin Water Department shall be notified at a minimum of 48 hours (Monday through Friday) prior to commencing any work, testing, and prior to making any connections to existing waterlines.
			The City of Baldwin is not required to locate water and sanitary sewer lines that were installed by a developer or other persons that have not yet been accepted into the City's ownership. The person installing those lines shall install and maintain visible, permanent markers (i.e. color coded wire flags, valve markers, service stub markers, etc.) in order to identify the water and sanitary sewer facilities at the time the lines are installed. Once the City has taken legal ownership of those water and sanitary sewer lines, the City shall be responsible for locating them when a request is received.
			Marking tape with "Caution Buried Sanitary Sewer line" shall be installed approximately 18 inches above all sanitary sewer lines.

			As-Built sanitary sewer record drawings (hard copies and AutoCAD and signed, dated pdf digital files) for this site shall be submitted and approved prior to final plat approval. As-built drawings shall be prepared on the City of Baldwin's coordinate system.
			The City of Baldwin Sewer Department shall be notified at a minimum 48 hours (Monday through Friday) prior to commencing any work, testing, and prior to making any connections to existing sanitary sewer lines or manholes.
			The City of Baldwin Public Works Director shall be notified at a minimum 48 hours (Monday through Friday) prior to commencement of any work that requires inspection to request an inspection. City of Baldwin shall inspect subgrade, base, and be present during paving of all driveways and roadways within the existing and proposed right-of-way.

MISCELLANEOUS REQUIREMENTS

1st	2nd	3rd	
			NPDES permit for disturbed area greater than or equal to 1 acre. Provide copy of approval from Georgia EPD.
			GDOT permit for access on a state route. Provide copy of permit.
			County permit for access on a county road. Provide copy of permit.
			Traffic study.
			DRI process completed.
			DRI requirements met.
			Environmental health department approval for septic system. Provide copy of approval.
			US Army Corps of Engineers approval/permit. EPD stream buffer variance approval. Provide copy of approvals.
			Provide a CD with digital as-built plans in AutoCAD, signed, dated pdf file(s), and stormwater management report.
			Submit a maintenance agreement that includes all structural stormwater controls.

City of Baldwin
Retaining Wall Checklist

Name of Development _____ City Project No. _____

Address of Development _____ Date of Review 1st _____

2nd _____ 3rd _____

A wall permit is required for all retaining walls that are greater than 4 feet in height measured from top of footing to top of wall. A wall permit is also required for all stormwater/detention pond retaining walls regardless of height and all retaining walls less than four feet in height when the slope of the backfill material exceeds a 1 foot vertical to 3 feet horizontal slope or when the retaining wall will be required to support a surcharge load.

Retaining wall plans shall be submitted for review and approved prior to the issuance of a land disturbance permit.

WALL PLANS

1st	2nd	3rd	
			Submit three (3) complete sets of construction documents to City of Baldwin.
			Signed and dated Professional Engineer's seal on all plan sheets.
			Boundary of entire parcel(s). Include adjacent road(s), right-of-way, and adjoining property owners.
			Name of project, name, address, and phone number of owner/developer, engineer, and 24-hour contact and cell phone number on cover sheet.
			Tax parcel number, address, zoning, land district, land lot, and county of site on cover sheet.
			Vicinity map with the site boundary delineated and road names.
			Project description. Proposed use of each lot. Boundary area.
			Scale of 1 inch = 60 feet or larger detail for site and grading plan view.
			Direction of north in relation to the site shown on the plan (indicate magnetic, true, or grid).
			Setback lines. Buffers.
			Location of any site borehole investigations that may have been performed.
			Delineate existing features and topography with dashed, lighter lines. Delineate proposed features and topography with solid, darker lines.
			For walls located on an individual residential lot, provide a site plan with wall location, site boundary, distance between wall and property lines, and location of existing and proposed structures, roads, driveway, utilities, easements, streams, buffers, ponds, natural conservation areas, etc.
			For walls located on existing or proposed commercial and subdivision developments, provide a site plan with wall location, site boundary, distance between wall and property lines, and location of existing and proposed structures, roads, driveways, utilities, easements, streams, buffers, ponds, natural conservation areas, etc. Provide a grading plan with

			For walls located on existing or proposed commercial and subdivision developments, provide a grading plan with topography at 2-foot elevations of the entire site for the development. Include source of topography and reference datum. Include proposed grading.
			If multiple walls are proposed on the plan, label each wall with a number.
			Station numbers for each wall on the plan view.
			Spot elevations at finished grade along both sides of the wall on the plan view. Include top of wall elevations.
			Provide a profile of each wall with top of wall elevation, top and bottom of footing elevations, and ground elevations on both sides of the wall.
			Construction detail for each wall with wall and footing dimensions.
			Wall and footing materials
			Concrete design strength
			Steel reinforcement (location, type, size, spacing, ASTM designation, yield strength, minimum required lap splice lengths)
			Minimum required concrete cover for reinforcement.
			Type of backfill material. Slope of backfill finished grade. Drainage method for backfilled walls.
			Required depth of cover over footing.
			For modular walls, the wall plan shall include required types, spacing, and embedment length of all geogrid reinforcement.
			Allowable soil bearing pressure for each wall
			Equivalent lateral fluid pressure (active and passive).
			Surcharge load.
			Soil internal angle of friction, coefficient of friction.
			Soil density
			Calculations signed and sealed by the structural engineer-of-record registered in the state of Georgia that demonstrate the structural adequacy of each proposed wall to resist applicable design loads within the specified allowable soil bearing pressure and maintain a minimum factor of safety of 1.5 against overturning and sliding.
			For each retaining wall up to 10 feet high measured from top of footing to top of wall, the soil bearing pressure used for foundation design shall not exceed 2,000 psf based on material class #4 from IBC Table 1806.2, unless a geotechnical report signed and sealed by a Georgia professional engineer is provided indicating soil testing has been performed at the wall location that resulted in a higher design bearing pressure.
			For each retaining wall greater than 10 feet high measured from top of footing to top of wall, the soil bearing pressure used for foundation design shall be based on the results of soil testing performed at the wall location by an approved geotechnical testing firm. The geotechnical report signed and sealed by a Georgia professional engineer shall be submitted with the wall plan to the City of Baldwin.
			Handrail detail for all walls over 30 inches in height measured from the ground adjacent to the wall on the low side to the top of the wall.

NOTES

1st	2nd	3rd	
			Professional certification for retaining walls stating said items have been constructed/installed in accordance with the approved design and manufacturer's recommendations shall be required prior to issuance of certificate of occupancy.
			The City of Baldwin Public Works Director shall be notified at a minimum 48 hours (Monday through Friday) prior to commencement of any work that requires inspection to request an inspection. City of Baldwin shall inspect steel reinforcement prior to placement of forms and be present during concrete placement.
			Prior to construction, soil design parameters stated on the construction wall details including but not limited to allowable soil bearing pressure, equivalent lateral fluid pressure (active and passive), internal angle of friction, coefficient of friction, and soil density shall be field-verified by a geotechnical firm. A corresponding written report with the seal and signature of a professional engineer registered in the state of Georgia and employed by the geotechnical firm field verifying the soil design parameters shall be submitted to the Public Works Director prior to construction of the wall. If there is a discrepancy between field-verified soil parameters and those specified on the construction plan, construction shall not proceed until applicable design modifications have been submitted by the wall design engineer of record and have been reviewed by City of Baldwin.
			The City of Baldwin Public Works Director shall be notified at a minimum 48 hours (Monday through Friday) prior to commencement of any work that requires inspection to request an inspection. City of Baldwin shall inspect steel reinforcement prior to placement of forms and be present during concrete placement.
			Retaining wall design is in compliance with IBC, latest edition.
			Wall design complies with ACI and/or NCMA Design Manual for Segmental Walls.
			For each retaining wall greater than 10 feet high measured from top of footing to top of wall, include a note on the plans stating the geotechnical testing firm used to perform subsurface soil investigation for verifying the soil design parameters included on the wall construction details.

City of Baldwin
Subdivision Preliminary Plat Checklist

Name of Development _____ **City Project No.** _____

Address of Development _____ **Date of Review 1st** _____

2nd _____ **3rd** _____

STORMWATER MANAGEMENT REPORT

1st	2nd	3rd	
			Provide a stormwater management report with date and signed Professional Engineer's seal.
			Vicinity map with the site boundary delineated.
			Project description, pre-developed and post-developed conditions narrative.
			Mapping of soils from USDA soil survey and location of any site borehole investigations that may have been performed.
			Pre-developed and post-developed drainage area maps and 10% downstream area map with on-site and off-site basins delineated separately. Designation, drainage area, travel path, and study point location of each basin. Topography at 2-foot elevations for all on-site basins. Topography for all off-site basins. Basin delineation corresponds with topography. Basins are delineated and analyzed at each location/study point where runoff leaves the site along each property line.
			Time of concentration calculations for each basin based on the travel path provided on the drainage area maps. Maximum length for sheet flow is 100 ft. Minimum time of concentration used in analysis is 5 minutes.
			Georgia Stormwater Management Manual Stormwater Quality Site Development Review Tool, latest version that includes all disturbed basins. Overall site has minimum 80% TSS removal.
			Assure credits used are valid for site (natural conservation area, etc.) NOTE: Easement for natural conservation area must be recorded.
			Stage/storage tables for permanent pool and forebay.
			Required and provided water quality volume calculations. Provided water quality volume is greater than required water quality volume. Include water quality orifice sizing calculation if micropool extended detention pond or wet extended detention pond is being proposed.
			Required and provided channel protection volume calculations. Provided channel protection volume is greater than required water quality volume. Include channel protection orifice sizing calculation.
			SCS method used for storage volume.
			Hydrograph return period recap, summaries, and reports for the 1, 2, 5, 10, 25, 50, and 100 year storms of all basins including the 10% downstream basin. Post-developed flows are equal to or less than pre-developed flows at each location/study point where runoff leaves the site along each property line and at 10% point.
			Use the current 24-hour rainfall data from NOAA Atlas 14, Volume 9, Version 2.

			Pond report for each pond with a stage/storage table beginning at the required routing elevation with culvert, orifices, weirs, and discharge data used to develop the pond routing hydrographs. Routing elevation is not lower than permanent pool elevation for a stormwater pond. The highest elevation in the stage/storage table corresponds with the lowest elevation of the dam.
			Outlet control structure detail for each pond with dimensions and elevations of all inlets and outlets and drain protection. Diameter and material of outlet pipe and pipe to drain pond. Steps to access inside the OCS.
			Calculations to verify the pond outlet pipe and OCS have adequate capacity for 125% of the 100 year routed outflow or an emergency spillway has been provided.

SITE AND GRADING PLANS; DETAILS

1st	2nd	3rd	
			Name of subdivision and phase.
			Signed and dated Professional Engineer's seal on all plan sheets.
			Boundary survey of entire parcel(s). Survey date. Include adjacent road(s), right-of-way, and adjoining property owners. Include any previous subdivision of the property with boundary. Signed registered land surveyor seal.
			Name, address, and phone number of owner/developer, engineer, and surveyor, and 24-hour contact and cell phone number on cover sheet.
			Tax parcel number, address, zoning, land district, land lot, and county of site on cover sheet.
			Vicinity map with the site boundary delineated and road names.
			Project description. Proposed use of each lot. Boundary area. Disturbed area and volume. Length of roads. Estimated time for completion. Proposed organization to control portion or all of the tract. Notice of intent to dedicate any portion of the property to the public.
			Scale of 1 inch = 60 feet or larger detail for plan view.
			Lot layout, numbering, dimensions, and area. Minimum lot size. Average lot size.
			Typical lot layout detail.
			Delineate city limits, county lines, land lot lines.
			Setback lines. Buffers.
			Existing/proposed right-of-way, roads, cul-de-sacs, curb and gutter, and sidewalks with dimensions.
			Existing/proposed utility locations and easements.
			10 foot perpetual easement.
			Location of existing structures, cemeteries, tree line, drives, lakes, ponds, landscaping, etc.
			Location of street lights.
			Construction easements.
			Provide topography at 2-foot elevations of the entire site. Include source of topography and reference datum.
			Stormwater management system.
			Maximum side slopes of a pond including the downstream side of the dam is 3:1. Maximum slopes elsewhere on site is 2:1. 15-foot safety bench unless pond slopes are 4:1 or flatter. 15-foot wide aquatic bench if permanent pool is 4 feet or deeper.
			Low point spot elevations in the permanent pool, forebay, in front of OCS and spot elevations along both sides of the top of dam of the pond.

			Delineate and label the 100-year storm elevation, permanent pool elevation (if applicable), and the cleanout elevation of the pond. (Note the corresponding mark on the silt gauge.)
			Delineate and label top of dam/wall elevation (lowest elevation) and width of top of dam of pond. Minimum top of dam width is 10 feet.
			Minimum of 1-foot of freeboard between 100 year elevation and top of dam elevation of pond.
			Delineate and label top of berm elevation between permanent pool and forebay in pond.
			Bottom of forebay elevation is equal to or greater than permanent pool elevation.
			Forebay depth is 4-6 feet.
			Dimensions and elevations for underground detention system.
			Dimensions and elevations for proprietary device or other water quality BMP.
			Location of existing and proposed conveyance systems and utilities.
			Minimum of 1-foot of cover over all storm drain pipes.
			Mapping of soils from USDA soil survey and location of any site borehole investigations that may have been performed.
			Delineate and label centerline of stream, state waters buffer, and City of Baldwin impervious setback.
			Delineate 100 year floodplain. FIRM panel number and date.
			Delineate and label all drainage and access easements. Ensure easement around the pond is measured a minimum of 20 ft. from the 100-year storm elevation. Include width of easement.
			Delineate and label the silt gauge, benchmark/control point, outlet control structure, and all stormwater drainage structures.
			100-year ponding limit and elevation at all inlets.
			Maximum spacing of drainage structures is 500 ft.
			Diameter and material of all storm drain pipes.
			Locate drainage structure at every change of direction and grade of storm drain pipe. Minimum angle between storm drain pipes entering and exiting drainage structure is 90°.
			Storm drain pipes under pavement are perpendicular to street. Storm drain pipes under roads and in streams are RCP.
			Outfall pipe in residential subdivisions shall extend a minimum from the street to 30 feet behind the front building setback or 100 year floodplain whichever is less.
			Delineate and label drainage easement around all storm drain pipes. Ensure easement width corresponds with pipe diameter and depth table in Chapter 6 of the City of Baldwin, Georgia Code of Ordinances. Label width of easement. Storm drain pipe shall be in the center of easement and no buildings or other structures shall be within the easement.
			Delineate and label drainage easement around all channels. Channel shall be in the center of the easement. Label width of easement.
			Outlet control structure detail with dimensions and elevations of all inlets and outlets and drain protection. Diameter and material of outlet pipe and pipe to drain pond. Steps to access inside the OCS. Anti-seep collar on outlet pipe.
			Riprap at all inlet and outlet headwalls, flared end sections, and safety end sections.
			Delineate and label 12-foot wide access easement to the pond from the right-of-way of a road. Drainage structures are not located within the access easement.
			Delineate and label fence and gate location. Fence and gate are a minimum of 20 feet from 100 year ponding elevation and along outer perimeter of top of dam.
			Plans must include all stormwater structural and non-structural controls included on the Stormwater Quality Site Development Review Tool. If natural conservation area is delineated, include a note stating that the natural conservation area shall remain undisturbed.

			Direction of north in relation to the site shown on the plan (indicate magnetic, true, or grid) and graphic scale.
			Property monument at every property corner.
			Location of stumps, materials, debris to be buried onsite on the plans. If the debris is to be hauled offsite, include offsite location. Must meet GA DNR code 391-3-4.06.
			Wall plans, profiles, and details. See retaining wall checklist. Include a note on the plans if wall plans are being submitted as a separate permit. A land disturbance permit will not be issued until wall plans have been approved.
			Striping and signing plan and details.
			Pavement typical section with curb and gutter and sidewalks.
			Utility locations typical section.
			Construction details.

ROAD AND ACCESS PLANS AND PROFILES

1st	2nd	3rd	
			Scale of 1 inch = 60 feet or larger detail for site and grading plan view. Scale of 1 inch = 20 feet or larger for access plan.
			Horizontal and vertical scale on profile sheets.
			Provide topography at 2-foot elevations on the plan view. Include source of topography and reference datum.
			Delineate existing features and topography with dashed, lighter lines. Delineate proposed features and topography with solid, darker lines.
			Existing right-of-way, roads, utility locations, and easements on plans.
			Location of existing and proposed structures, cemeteries, tree line, drives, lakes, ponds, streams, natural conservation area, landscaping, etc.
			Width of existing roadway pavement, lane widths, and lane lines on access plan.
			Distance from centerline of existing roadway to right-of-way on access plan.
			Names of all existing roads adjacent to site on the plan view. State route numbers and US highway numbers if applicable.
			Distance from one corner of the site, measured along the right-of-way, to the centerline of the nearest intersection on access plan. Name of intersecting road or highway.
			Location and type of existing roadway signs within the right-of-way along the site being developed on access plan. Note if none exists.
			Proposed deceleration lane(s), left turn lane(s), tapers, and lane shifts on plan view. Include lengths, widths, and pavement markings.
			Distance between entrance(s) and side property line measured along right-of-way on access plan.
			Distance between driveway entrances if more than one is proposed on access plan.
			Proposed road layout, names, centerline station numbers, horizontal curve data, minimum radii of center line, edge of pavement, and right-of-way.
			Tangent length between reverse curves.
			Road profile. Vertical curve data. Minimum length. K value. Road, intersection, and cul-de-sac grades.
			Access profile with all lanes of existing roadway and proposed driveway/roadway access to the right-of-way line. Include slope of existing and proposed roadways.
			Design speed.
			Intersection and stopping sight distances for each proposed roadway in accordance with AASHTO's A Policy on Geometric Design of Highways and Streets, latest edition.
			Street jogs, centerline offsets.
			Angle at intersections.

			Street and cul-de-sac pavement, curb and gutter, sidewalks, return radius of face of curb or edge of asphalt if no curb, and right-of-way dimensions on plan view.
			Temporary cul-de-sac if phasing.
			Utility and storm drain crossings with diameter, material, and invert elevation on profiles.
			City limit/county line tied to centerline.
			Construction easements.
			Signed, dated professional engineer's seal.

STORM DRAIN PIPE PROFILES

1st	2nd	3rd	
			Horizontal and vertical scale.
			Storm drain pipe profiles.
			Pipe diameter, material, length, and slope.
			Gauge and corrugation of aluminized steel pipe.
			Class of reinforced concrete pipe.
			Existing and proposed ground lines. Tie proposed ground line into existing ground line downstream of headwalls, flared end sections, and safety end sections.
			25 year/100 year HGL.
			Drainage structure type and designation with invert elevations, top of structure and /or throat elevation for catch basins, top of structure and weir elevations for weir inlets, and inlet elevation for curb and drop inlets.
			Delineate pipe(s) and include upstream structure designation with invert elevation associated with drainage structure that has multiple inlets.
			Maximum drop in drainage structure is 10 feet.
			Minimum cover of 1 foot over pipes.
			Minimum pipe diameter of 18 inches. Minimum roof drain diameter of 12 inches.
			Minimum slope of 0.50%.
			If aluminized steel and HDPE pipes exceed 14% slope, specify quantity and spacing of anchor collars.
			If RCP exceeds 10% slope, specify quantity and spacing of anchor collars.
			All utility crossings with diameter, material, and vertical clearance.
			Signed, dated professional engineer's seal.

STORM DRAIN PIPE CHART

1st	2nd	3rd	
			Upstream and downstream structure type and designation
			Pipe number, diameter, material, length, and slope
			Drainage area
			Discharge
			Storm frequency and intensity (25 yr./100 yr.)
			Runoff coefficient and frequency factor
			Manning's roughness coefficient
			Velocity (25 yr.)
			Maximum velocity is 15 ft/s.
			Gutter spread calculations.
			Intercept efficiency percentage at all catch basins and inlets not at low point.

			Signed, dated professional engineer's seal.

CHANNELS

1st	2nd	3rd	
			Cross-section with dimensions. Minimum bottom width of 2 feet. Maximum side slopes of 3:1 with vegetative lining. Maximum side slopes of 2:1 with riprap or concrete.
			Channel designation
			Drainage area
			Discharge (25 yr. and 100 yr.)
			Runoff coefficient
			Manning's roughness coefficient
			Velocity (25 yr.)
			Normal depth (25 yr. and 100 yr.)
			Overall minimum channel depth
			Channel length and slope
			Lining
			Signed, dated professional engineer's seal.

WATER SYSTEM

1st	2nd	3rd	
			"Water System Addition and Expansion Form" shall be completed and submitted with the plans. The plans will not be reviewed until the completed form has been received.
			In accordance with the Minimum Standards for Public Water Systems by the Drinking Water and Engineering Program of the Environmental Protection Division, the developer and the developer's engineer are solely responsible for all necessary water system extension design, hydraulic calculations, and analysis which determine the availability of water supply for the subdivision. Submission of waterline plans indicates that the developer and the developer's engineer have indeed conducted the required hydraulic analysis and the City of Baldwin and their consulting engineer appropriately assume so. The city and its consulting engineer may or may not request evidence and documentation of said design work on a case by case basis at their discretion. The city's decision not to request this documentation does not relieve the developer and the developer's engineer from their responsibility to perform all necessary water system extension design, hydraulic calculations, and analysis which determine the availability of water supply for the subdivision.
			The owner/developer or his designee shall provide or conduct his own water pressure and flow tests required for design, including personnel and equipment. All testing shall be scheduled in advance with the Water Department and conducted in their presence.
			Address water capacity with the appropriate City representative.
			Signed and dated Professional Engineer's seal on all plan sheets.
			Provide topography at 2-foot elevations of the entire site. Source of topography. Elevation data referenced to mean sea level (MSL).
			Scale of 1 inch = 60 feet or larger detail for plan view.
			All water lines shall be C-900 and/or DIP.
			Minimum pipe diameter of 6 inches allowed on dead end cul-de-sac streets less than 1,000 feet in length, or lines that are looped. All other areas, minimum pipe diameter shall be 8 inches.
			Location, diameter, and material of all water mains and service laterals.

			Location and size of vacuum and air release valves (to be installed at the highest points in the system).
			Delineate and label all existing and proposed fire hydrants.
			Maximum spacing of fire hydrants shall be 500 feet.
			Delineate and label all existing and proposed water valves and other appurtenances.
			Water valve in every direction at each intersection (i.e. 3 valves at a 3 way intersection, 4 valves at a 4 way intersection).
			Maximum spacing of in line valves is 1,000 feet.
			Location, diameter, and material of all existing water lines surrounding the proposed subdivision.
			Specify methods and tie-in locations with existing mains (i.e. tapping sleeve and valve labeled with the diameter).
			Location and size of water meters. Water meters shall be located a maximum of 3 feet beyond the property line.
			Long side service shall be installed with 2-inch PVC sleeves under pavement.
			Each service shall have its own tap from the distribution line. No double services allowed.
			Label all existing and proposed road right-of-ways and easements.
			Specify steel casing for water mains under existing or proposed pavement. Length of steel casing.
			Dimensions, stations, and labels to indicate proposed location of water line relative to features such as right-of-way, centerlines, edge of pavement, coordinates, etc.
			Cross minor streams/creeks under or beyond culvert/storm drain pipe. Plan view and cross-section of crossing with existing and proposed ground, vegetative buffer, side slopes, depth of cover, creek, culvert/storm drain pipe, elevations, proposed water line and any fittings necessary. Provide additional easements as necessary.
			Aerial crossings shall not be permitted.
			Table with columns for all water line diameter, material, and length.

SANITARY SEWER SYSTEM

1st	2nd	3rd	
			"Sanitary Sewer Extension Submittal Form" shall be completed and submitted with the plans. The plans will not be reviewed until the completed form has been received.
			Address sanitary sewer capacity with the appropriate City representative.
			Signed and dated Professional Engineer's seal on all plan sheets.
			Provide topography at 2-foot elevations of the entire site. Source of topography. Elevation data referenced to mean sea level (MSL). Manholes referenced to state-plane coordinate system.
			Scale of 1 inch = 60 feet or larger detail for plan view.
			Delineate limits of 100 year floodplain.
			Delineate all phases of the subdivision. In the event the subdivision is developed in phases, the final construction plans for sanitary sewers may be submitted in phases or units. At the time the first phase is submitted, the engineer shall submit one (1) copy of the preliminary layout of the entire sanitary sewer system. This layout shall show all lines required to serve any lots to be developed and any surrounding property that may be served through the property. The site plan for each phase or unit shall contain a location drawing showing the relationship of the phase or unit to the total project and to the surrounding streets and sanitary sewer outfalls.
			Master plan view of entire sanitary sewer line plan delineating lots, lot numbers, laterals, manholes, manhole numbers, etc.
			Plan and profile sheets for all sanitary sewer lines except service laterals. Horizontal and

			vertical scale for profiles. Plan view on same sheet as the profile.
			All utility and storm drain pipe crossings with diameter, material, and vertical clearance on profile.
			Label manhole deflection angles.
			Sanitary sewer lines shall be perpendicular under existing or proposed pavement.
			SDR 26 PVC sanitary sewer lines under existing or proposed pavement shall be constructed with at least 7 ft. of pipe cover. Otherwise DIP shall be used with a minimum of 4 ft. of cover.
			Specify steel casing for sanitary sewer lines crossing under existing pavement. Size and length of steel casing.
			Minimum cover of 3 feet over DIP sanitary sewer lines. Minimum cover of 4 feet over PVC sanitary sewer pipes outside of pavement.
			Sanitary sewer pipe shall be SDR 26 PVC or DIP, Pressure Class 350 for 8"-12" and Pressure Class 250 or 350 for 14"-36" depending on design with Tnemec Perma-shield PL or Protecto 401 interior coating. Cement lining is not allowed for sanitary sewer applications.
			Maximum spacing of manholes is 400 feet.
			Minimum sanitary sewer pipe diameter of 8 inches. Minimum service lateral diameter is 6 inches.
			Minimum slope is 0.50%.
			Maximum slope is 15.0%.
			Bedding shall be Class 4 or greater. For DIP and Class 5 or greater for PVC.
			Service laterals shall be SDR 26 PVC.
			Gravity lines shall be offset 1 foot from the centerline of the road for new subdivision streets.
			Rim elevation of manholes outside of pavement shall be 1.5 feet above ground unless located in a landscaped area or close to the edge of pavement.
			Locate manhole at every change of direction and grade of sanitary sewer line. Minimum angle between sanitary sewer lines entering and exiting manhole is 90°.
			Service line connections shall be to gravity sanitary sewer line or manhole for residential. Commercial service line connections shall be connected to a manhole.
			A 20 foot permanent, recorded easement around all 8 inch through 18 inch diameter sanitary sewer lines with up to 20 feet of cover and a 40 foot permanent, recorded easement shall be required if cover is over 20 feet outside of right-of-way. A 40 foot permanent, recorded easement shall be required on all 24 inch diameter sanitary sewer lines regardless of depth of cover. The sanitary sewer line shall be in the center of the easement and no buildings or other structures shall be within the easement. Easements shall be shown on all plans including the landscape plan. All sanitary sewer easements shall be full executed prior to preliminary plat approval.
			Line of existing and proposed ground, grade and length of sanitary sewer line between each manhole, invert in and out elevation of each manhole, and rim elevation of each manhole.
			Location, diameter, and material of all sanitary sewer lines.
			Location, diameter, and material of all service laterals.
			Location, diameter, and material of all force mains.
			Location and size of grease trap(s). Minimum size is 1,500 gallons.
			Manholes numbered on the plan with corresponding numbers on the profile.
			Minimum drop from invert in to invert out elevation is 0.20 feet. Any drop from invert in to invert out elevation greater than 2 feet shall be constructed as an outside drop manhole.
			No sanitary sewer lines shall be installed through stormwater/detention ponds including the dam or within its drainage easement.

			Location, diameter, and material of all existing sanitary sewer lines surrounding the proposed subdivision.
			Location, size, and invert elevations of all special features such as connections to existing sanitary sewers, concrete encasement, collar walls, elevated sanitary sewer piers, etc.
			Location of all structures, above and below ground, which might interfere with the proposed construction, particularly water mains, gas mains, storm drains, utility conduits, etc.
			Label all existing and proposed streets, right-of-ways, and easements.
			Dimensions, stations, and labels to indicate proposed location of sanitary sewer line relative to features such as right-of-way, centerlines, edge of pavement, coordinates, etc.
			Aerial crossings shall not be permitted unless there is no other alternative. Aerial sanitary sewer lines shall be above the 50-year flood line and delineated as such on the plans.
			Location and elevation of adjacent parallel streambeds and adjacent lake/pond surfaces on the plan and profile.
			Sanitary sewer details correspond with city standard details, latest edition.
			No trees within permanent water or sanitary sewer easements or above fire protection water mains.
			Minimum of 10 feet horizontal distance between water and sanitary sewer lines and storm drain pipes.
			Minimum 18 inches vertical distance between water and sanitary sewer lines.
			Minimum 1 foot vertical distance between water and sanitary sewer lines and storm drain pipe.
			All sewage pumping stations shall have an auxiliary power source and yard hydrant for wash down purposes. A remote telemetry system compatible with the City's existing system shall be provided.
			Sand traps and oil separators with sample station manholes shall be installed in all sanitary sewer service lines from service stations, garages, car washes, and similar operations. Domestic sewage shall not pass through sand traps, oil separators, or sample stations.
			Grease traps and sample station manholes shall be installed in process waste lines of all sanitary service sewers for commercial, industrial, and institutional establishments with food preparation areas. Domestic sewage shall not pass through grease traps or sample stations.
			Rainwater shall be prevented from entering the sanitary sewer at all dumpster pad locations. Method shall be detailed on drawings.
			Grease trap and oil separator details shall appear on the drawings and shall be approved prior to installation.
			Oil separators shall be sized to handle two times the expected flow rate.
			Sample station manholes may be required on commercial, industrial, and institutional sanitary service sewers. Domestic sewage shall not pass through sample station manholes.

NOTES

1st	2nd	3rd	
			No additional construction or improvements including but not limited to walls, signs, fences, sprinkler system, lights, etc. will be allowed within the road right-of-way.
			All temporary traffic control shall be in accordance with the Manual on Uniform Traffic Control Devices, latest edition.
			Sawcut along edge of existing pavement to provide joint uniformity prior to placement of

			proposed pavement.
			Centerline must be surveyed and staked for the grading inspection.
			Fire hydrants shall be placed a minimum of 6 feet behind curb and water valves shall be outside of pavement.
			Grates with bars shall be perpendicular to road.
			The throat of curb inlets shall not exceed 8 inches.
			HDPE pipe shall conform to the requirements of AASHTO M-294 and AASHTO MP7, Type S & D. Connections shall use a rubber gasket, which conforms to ASTM F-477. Installation shall be in accordance with ASTM Recommended Practice D-2321, AASHTO Section 30, or with Section 550 of the Georgia Department of Transportation Standard Specifications Construction of Transportation Systems, latest edition.
			All RCP pipe joints shall be bell & spigot types with a rubber gasket conforming to ASTM C-443. The pipe shall be manufactured in accordance with AASHTO M-170 and/or ASTM C-76. Class of pipe and wall thickness shall be in accordance with 1030-D, Georgia DOT specification, Table No. 1. Installation shall be in accordance with Section 550 of the Georgia Department of Transportation Standard Specifications Construction of Transportation Systems, latest edition.
			Sidewalks shall be installed before final plat, one year after final plat, or on a lot by lot basis.
			A five foot perpetual utility easement shall be provided on both sides of residential streets and cul-de-sacs.
			Sign every lot or 100 feet, whichever is less, stating 'Stream Buffer – Do Not Remove or Alter Existing Native Vegetation'.
			No obstructions shall be built, constructed or planted within the stormwater management facility, its associated drainage or access easements.
			Detention/stormwater pond or sediment basin/storage shall be installed and functioning prior to any major grading or impervious surface construction.
			Developer shall clean out accumulated sediment in stormwater/detention pond at end of construction once disturbed areas have been stabilized.
			Developer shall be responsible for placing street signs and traffic signs in accordance with City of Baldwin regulations. A street name sign shall be installed for every street at an intersection. Standard street name signs shall have at least four-inch high letters for major thoroughfares and at least three-inch high letters for local streets. Street names shall be approved by City of Baldwin prior to street name sign installation.
			Traffic control devices to include signs and street markings shall be installed by the developer. The type and location of traffic control devices shall be based upon the latest edition of the Manual on Uniform Traffic Control Devices. Stop signs shall be installed at every intersection.
			A third-party pipe installation inspection report shall be submitted for all pipes. The report shall be submitted prior to the final inspection by the city. The pipe installation report shall include at least the following: 1. Description of subgrade and bedding used in installation. 2. Pipe material certifications. 3. Description of backfill methods used. 4. Certification from a Registered Professional Engineer that the pipe was installed in accordance to the approved Construction Plans and any applicable Georgia DOT, AASHTO or American Concrete Pipe Association Standards. The city can request additional information for the pipe installation report as a condition of issuing the Land Disturbance Permit. The Public Works Director shall be notified before the pipe installation begins so the city may also periodically inspect the installation process. All other pipe materials may be used in applications approved by the Georgia Department of Transportation.

			Wetland certification: The design professional, whose seal appears hereon, certifies the following: 1) the National Wetland Inventory maps have been consulted; and, 2) the appropriate plan sheet [ ] does / [ ] does not (check appropriate box) indicate areas of united states army corps of engineers jurisdictional wetlands as shown on the maps; and, 3) if wetlands are indicated, the land owner or developer has been advised that land disturbance of protected wetlands shall not occur unless the appropriate federal wetlands alteration ("section 404") permit has been obtained.
			City of Baldwin assumes no responsibility for overflow or erosion of natural or artificial drains beyond the extent of the street right-of-way or for the extension of culverts beyond the point shown on the approved and recorded subdivision plat.
			Professional certification for site specific items such as retaining walls, proprietary devices, etc. stating said items have been constructed/installed in accordance with the approved design and manufacturer's recommendations shall be required prior to final plat approval.
			Prior to construction, soil design parameters stated on the construction wall details including but not limited to allowable soil bearing pressure, equivalent lateral fluid pressure (active and passive), internal angle of friction, coefficient of friction, and soil density shall be field-verified by a geotechnical firm. A corresponding written report with the seal and signature of a professional engineer registered in the state of Georgia and employed by the geotechnical firm field verifying the soil design parameters shall be submitted to the Public Works Director prior to construction of the wall. If there is a discrepancy between field-verified soil parameters and those specified on the construction plan, construction shall not proceed until applicable design modifications have been submitted by the wall design engineer of record and have been reviewed by City of Baldwin.
			All water and sanitary sewer line materials and construction shall be in accordance with City of Baldwin Standard Specifications and Details, latest edition.
			All water and sanitary sewer facilities shall be installed by a licensed utility contractor in the State of Georgia.
			Water meters shall be installed a maximum of 3 feet beyond the property line.
			12-gauge, solid strand detection wire shall be installed above all waterlines with waterproof connectors and connections at every valve and hydrant.
			Marking tape with "Caution Buried Waterline" shall be installed approximately 18 inches above all waterlines.
			All water and sanitary sewer construction shall be inspected and tested as per Baldwin Standards prior to final acceptance by the City.
			As-Built water line record drawings (hard copies and AutoCAD and signed, dated pdf digital files) for this subdivision shall be submitted and approved prior to final plat approval. As-built drawings shall be prepared on the City of Baldwin's coordinate system.
			The City of Baldwin Water Department shall be notified at a minimum of 48 hours (Monday through Friday) prior to commencing any work, testing, and prior to making any connections to existing waterlines.
			The City of Baldwin is not required to locate water and sanitary sewer lines that were installed by a developer or other persons that have not yet been accepted into the City's ownership (acceptance of final plat). The person installing those lines shall install and maintain visible, permanent markers (i.e. color coded wire flags, valve markers, service stub markers, etc.) in order to identify the water and sanitary sewer facilities at the time the lines are installed. Once the City has taken legal ownership of those water and sanitary sewer lines, the City shall be responsible for locating them when a request is received.

			Marking tape with "Caution Buried Sanitary Sewer line" shall be installed approximately 18 inches above all sanitary sewer lines.
			As-Built sanitary sewer record drawings (hard copies and AutoCAD and signed, dated pdf digital files) for this subdivision shall be submitted and approved prior to final plat approval. As-built drawings shall be prepared on the City of Baldwin's coordinate system.
			The City of Baldwin Sewer Department shall be notified at a minimum 48 hours (Monday through Friday) prior to commencing any work, testing, and prior to making any connections to existing sanitary sewer lines or manholes.
			The City of Baldwin Public Works Director shall be notified at a minimum 48 hours (Monday through Friday) prior to commencement of any work that requires inspection to request an inspection. City of Baldwin shall inspect subgrade, base, and be present during paving of all driveways and roadways within the existing and proposed right-of-way.
			Preliminary Engineering Certificate I hereby certify that this proposed Development Plat correctly represents construction plans completed by me on _____ / _____ / _____, 20 _____. By _____, Registered P.E., Surveyor or Landscape Architect Number _____ Date _____ / _____ / _____
			Certificate of Preliminary Plat Approval All requirements of the city subdivision regulations relative to the preparation and submittal of a Preliminary Plat having been fulfilled, approval of this plat is hereby granted, subject to further provisions of said regulations. This Certificate shall expire _____ / _____ / _____. Name _____ Mayor, City of Baldwin Date _____ / _____ / _____
			Development Plat—Not to be Recorded.

MISCELLANEOUS REQUIREMENTS

1st	2nd	3rd	
			Conditions of zoning letter. Compliance with conditions of zoning.
			NPDES permit for disturbed area greater than or equal to 1 acre. Provide copy of approval from Georgia EPD.
			GDOT permit for access on a state route. Provide copy of permit.
			County permit for access on a county road. Provide copy of permit.
			Traffic study.
			DRI process completed.
			DRI requirements met.
			Environmental health department approval for septic system. Provide copy of approval.
			US Army Corps of Engineers approval/permit. EPD stream buffer variance approval. Provide copy of approvals.
			Provide a CD with digital plans in AutoCAD, signed, dated pdf file(s), and stormwater management report.
			Submit a maintenance agreement that includes all structural stormwater controls.

City of Baldwin
Subdivision Final Plat Checklist

Name of Development _____ **City Project No.** _____

Address of Development _____ **Date of Review 1st** _____

2nd _____ **3rd** _____

AS-BUILT STORMWATER MANAGEMENT REPORT

1st	2nd	3rd	
			Provide an as-built stormwater management report with date and signed Professional Engineer's seal.
			Vicinity map with the site boundary delineated.
			Project description, pre-developed and post-developed conditions narrative.
			Mapping of soils from USDA soil survey and location of any site borehole investigations that may have been performed.
			Pre-developed and as-built post-developed drainage area maps and 10% downstream area map with on-site and off-site basins delineated separately. Designation, drainage area, travel path, and study point location of each basin. Topography at 2-foot elevations for all on-site basins. Topography for all off-site basins. Basin delineation corresponds with topography. Basins are delineated and analyzed at each location/study point where runoff leaves the site along each property line.
			Time of concentration calculations for each basin based on the travel path provided on the drainage area maps. Maximum length for sheet flow is 100 ft. Minimum time of concentration used in analysis is 5 minutes.
			Georgia Stormwater Management Manual Stormwater Quality Site Development Review Tool that includes all disturbed basins. Overall site has minimum 80% TSS removal. BMP tracking forms.
			Assure credits used are valid for site (natural conservation area, etc.) NOTE: Easement for natural conservation area must be recorded.
			Stage/storage tables for permanent pool and forebay.
			Required and provided water quality volume calculations. Provided water quality volume is greater than or equal to required water quality volume.
			Required and provided channel protection volume calculations. Provided channel protection volume is greater than or equal to required water quality volume.
			SCS method used for storage volume.
			Hydrograph return period recap, summaries, and reports for the 1, 2, 5, 10, 25, 50, and 100 year storms of all basins including the 10% downstream basin. Post-developed flows are equal to or less than pre-developed flows at each location/study point where runoff leaves the site along each property line and at 10% point.
			Latest 24-hour rainfall data from NOAA Atlas 14, Volume 9, Version 2.

			As-built pond report for each pond with a stage/storage table beginning at the required routing elevation with culvert, orifices, weirs, and discharge data used to develop the pond routing hydrographs. Routing elevation is not lower than permanent pool elevation for a stormwater pond. The highest elevation in the stage/storage table corresponds with the lowest elevation of the dam.
			Outlet control structure detail for each pond with as-built dimensions and elevations of all inlets and outlets and drain protection. Diameter and material of outlet pipe and pipe to drain pond. Steps to access inside the OCS.
			Calculations to verify the pond outlet pipe and OCS have adequate capacity for 125% of the 100 year routed outflow or an emergency spillway has been provided.

FINAL PLAT

1st	2nd	3rd	
			Name of subdivision and phase.
			Signed and dated Professional Engineer's seal on all plan sheets.
			Boundary survey of entire parcel(s). Survey date. Include adjacent road(s), right-of-way, and adjoining property owners. Include any previous subdivision of the property with boundary. Signed registered land surveyor seal.
			Name, address, and phone number of owner/developer, engineer, and surveyor, and 24-hour contact and cell phone number on cover sheet.
			Tax parcel number, address, zoning, land district, land lot, and county of site on cover sheet.
			Vicinity map with the site boundary delineated and road names.
			Project description. Proposed use of each lot. Boundary area. Road names. Length of roads. Organization to control portion or all of the tract.
			Scale of 1 inch = 60 feet or larger detail for plan view.
			Lot layout, numbering, dimensions, and area. Minimum lot size. Average lot size.
			Typical lot layout detail.
			Delineate city limits, county lines, land lot lines.
			Setback lines. Buffers.
			Location and dimension of right-of-way, roads, cul-de-sacs, curb and gutter, sidewalks, and radii at intersections.
			Road centerline with station numbers, horizontal curve data, and minimum radii of center line.
			Property lines of lots with bearings or deflection angles and horizontal distances. Curved property lines with chord bearings, chord lengths, arc lengths, arc radii and central angles.
			Property monument at every property corner with location and description.
			Tangent length between reverse curves.
			Street jogs, centerline offsets.
			Angle at intersections.
			Temporary cul-de-sac if phasing.
			Utility locations and easements. 10 foot perpetual easement.
			Location of structures, cemeteries, tree line, drives, lakes, ponds, landscaping, etc.
			Location of street lights.
			Location of stormwater management system with easements.
			Dimensions, elevations, and easement for underground detention system.
			Dimensions, elevations, and easement for proprietary device or other water quality BMP.
			Location of conveyance systems and utilities.

			Minimum of 1 foot of cover over all storm drain pipes.
			Mapping of soils from USDA soil survey and location of any site borehole investigations that may have been performed.
			Delineate and label centerline of stream, state waters buffer, and City of Baldwin impervious setback.
			Delineate 100 year floodplain. FIRM panel number and date.
			Delineate and label all drainage and access easements. Ensure easement around the pond is measured a minimum of 20 ft. from the 100-year storm elevation. Include width of easement.
			Delineate and label the silt gauge, benchmark/control point, outlet control structure, and all stormwater drainage structures.
			100-year ponding limit and elevation at all inlets.
			Maximum spacing of drainage structures is 500 ft.
			Diameter and material of all storm drain pipes.
			Locate drainage structure at every change of direction and grade of storm drain pipe. Minimum angle between storm drain pipes entering and exiting drainage structure is 90°.
			Storm drain pipes under pavement are perpendicular to street. Storm drain pipes under roads and in streams are RCP.
			Outfall pipe in residential subdivisions extend a minimum from the street to 30 feet behind the front building setback or 100 year floodplain whichever is less.
			Delineate and label drainage easement around all storm drain pipes. Ensure easement width corresponds with pipe diameter and depth table in Chapter 6 of the City of Baldwin, Georgia Code of Ordinances. Label width of easement. Storm drain pipe is in the center of easement and no buildings or other structures shall be within the easement.
			Delineate and label drainage easement around all channels. Channel is be in the center of the easement. Label width of easement.
			Riprap at all inlet and outlet headwalls, flared end sections, and safety end sections.
			Delineate and label 12-foot wide access easement to the pond from the right-of-way of a road. Drainage structures are not located within the access easement.
			Delineate and label fence and gate location. Fence and gate are a minimum of 20 feet from 100 year ponding elevation and along outer perimeter of top of dam.
			Plat includes all stormwater structural and non-structural controls included on the Stormwater Quality Site Development Review Tool. If natural conservation area is delineated, note stating that the natural conservation area shall remain undisturbed.
			Direction of north in relation to the site shown on the plan (indicate magnetic, true, or grid) and graphic scale.
			Location of stumps, materials, debris buried onsite or note that none exist.

AS-BUILT SURVEY

1st	2nd	3rd	
			Name of project. Name, address, and phone number of owner/developer, engineer, surveyor, and contractor.
			Tax parcel number, address, zoning, land district, land lot, and county of site.
			Scale of 1 inch = 60 feet or larger detail.
			Topography at 2-foot elevations of the entire pond including downstream side of the dam and within the drainage easement around the pond.
			For underground detention systems, proprietary devices, and water quality BMPs, provide dimensions, state plane coordinates, mean sea level elevations, and drainage easements.

			Maximum side slopes of a pond including the downstream side of the dam is 3:1. 15-foot safety bench unless pond slopes are 4:1 or flatter. 15-foot wide aquatic bench if permanent pool is 4 feet or deeper.
			Low point spot elevations in the permanent pool, forebay, in front of OCS and spot elevations along both sides of the top of dam of the pond.
			Delineate and label the 100-year storm elevation, permanent pool elevation (if applicable), and the cleanout elevation of the pond. (Note the corresponding mark on the silt gauge.)
			Delineate and label top of dam/wall elevation (lowest elevation) and minimum width of pond. Minimum top of dam width is 10 feet.
			Minimum 1 foot of freeboard between 100 year elevation and top of dam elevation of pond.
			Delineate and label top of berm elevation between permanent pool and forebay in pond.
			Bottom of forebay elevation is equal to or greater than permanent pool elevation.
			Forebay depth is 4-6 feet.
			Date of field run survey.
			Site boundary and adjacent road name and right-of-way.
			Delineate and label centerline of stream, state waters buffer, and City of Baldwin stream buffer and impervious setback.
			Delineate 100 year floodplain. FIRM panel number and date.
			Delineate and label all drainage and access easements. Ensure easement around the pond is measured a minimum of 20 ft. from the as-built 100-year storm elevation. Include width of easement.
			Delineate and label the silt gauge, benchmark/control point, outlet control structure, and all stormwater drainage structures with state plane coordinates and mean sea level elevations. Drainage structure type and designation that corresponds with designation on the approved construction plans.
			100-year ponding limit and elevation at all inlets. Include intercept efficiency percentage at all catch basins and inlets not at low point.
			Maximum spacing of drainage structures is 500 ft.
			Diameter and material of all storm drain pipes.
			Delineate and label drainage easement around all storm drain pipes and channels. Ensure easement width corresponds with pipe diameter and depth. Label width of easement.
			Outlet control structure detail for each pond with as-built dimensions and elevations of all inlets and outlets and drain protection. Diameter and material of outlet pipe and pipe to drain pond. Steps to access inside the OCS.
			Location of structures, utilities, tree line, drives, lakes, ponds, natural conservation area, etc.
			Delineate and label 12-foot wide access easement to the pond, structural stormwater control, water quality BMP from the right-of-way of a road. Drainage structures are not located within the access easement.
			Riprap at all inlet and outlet headwalls, flared end sections, and safety end sections.
			Signed and dated Professional Engineer's seal and note stating the stormwater management facility is functioning as designed and the required detention storage and outflow rates are being provided.
			Delineate and label fence and gate location.
			Direction of north in relation to the site shown on the plan (indicate magnetic, true, or grid) and graphic scale.
			Signed registered land surveyor's seal.

AS-BUILT ROAD PROFILES

1st	2nd	3rd	
			Horizontal and vertical scale.
			Road profile. Vertical curve data. Minimum length. K value. Road, intersection, and cul-de-sac grades.
			Utility and storm drain crossings with diameter, material, and invert elevation.
			Signed registered surveyor's seal.

AS-BUILT STORM DRAIN PIPE PROFILES

1st	2nd	3rd	
			Storm drain pipe profiles.
			Horizontal and vertical scale.
			Pipe diameter, material, length, and slope.
			Gauge and corrugation of aluminized steel pipe.
			Class of reinforced concrete pipe.
			Ground line.
			25 year/100 year HGL.
			Drainage structure type and designation with invert elevations, top of structure and /or throat elevation for catch basins, top of structure and weir elevations for weir inlets, and inlet elevation for curb and drop inlets.
			Delineate pipe(s) and include upstream structure designation with invert elevation associated with drainage structure that has multiple inlets.
			Maximum drop in drainage structure is 10 feet.
			Minimum cover of 1 foot over pipes.
			Minimum pipe diameter of 18 inches. Minimum roof drain diameter of 12 inches.
			Minimum slope of 0.50%.
			If aluminized steel and HDPE pipes exceed 14% slope, provide documentation that anchor collars were installed per manufacturer's recommendations.
			If RCP exceeds 10% slope, provide documentation that anchor collars were installed per manufacturer's recommendations.
			All utility crossings with diameter, material, and vertical clearance.
			Signed registered land surveyor's seal.
			Signed, dated professional engineer's seal.

AS-BUILT CHANNELS

1st	2nd	3rd	
			As-built cross-section every 200 ft. with dimensions and at every change in cross-section dimension. Minimum bottom width of 2 feet. Maximum side slopes of 3:1 with vegetative lining. Maximum side slopes of 2:1 with riprap or concrete.
			As-built topography at 2-foot elevations within channel drainage easement. Date of survey and reference datum.
			Channel designation
			Drainage area
			Discharge (25 yr. and 100 yr.)
			Runoff coefficient
			Manning's roughness coefficient

			Velocity (25 yr.)
			Normal depth (25 yr. and 100 yr.)
			Overall minimum channel depth
			Channel length and slope
			Lining
			Signed registered surveyors seal.
			Signed, dated professional engineer's seal.

AS-BUILT STORM DRAIN PIPE CHART

1st	2nd	3rd	
			Upstream and downstream structure type and designation
			Pipe number, diameter, material, length, and slope
			Drainage area
			Discharge
			Storm frequency and intensity (25 yr./100 yr.)
			Runoff coefficient and frequency factor
			Manning's roughness coefficient
			Velocity (25 yr.)
			Maximum velocity is 15 ft/s.
			Gutter spread calculations.
			Intercept efficiency percentage at all catch basins and inlets not at low point.
			Signed, dated professional engineer's seal.

AS-BUILT WATER SYSTEM

1st	2nd	3rd	
			Scale of 1 inch = 60 feet or larger detail for plan view.
			All water lines are C-900 and/or DIP.
			Minimum pipe diameter of 6 inches allowed on dead end cul-de-sac streets less than 1,000 feet in length, or lines that are looped. All other areas, minimum pipe diameter is 8 inches.
			Location, diameter, and material of all water mains and service laterals.
			Location and size of vacuum and air release valves (installed at the highest points in the system).
			Delineate and label all fire hydrants.
			Maximum spacing of fire hydrants is 500 feet.
			Delineate and label all water valves and other appurtenances.
			Water valve in every direction at each intersection (i.e. 3 valves at a 3 way intersection, 4 valves at a 4 way intersection).
			Maximum spacing of in line valves is 1,000 feet.
			Location, diameter, and material of all water lines surrounding the subdivision.
			Specify methods and tie-in locations with mains (i.e. tapping sleeve and valve labeled with the diameter).

			Location and size of water meters. Water meters are located a maximum of 3 feet beyond the property line.
			Long side service has been installed with 2-inch PVC sleeves under pavement.
			Each service has its own tap from the distribution line. No double services allowed.
			Label all road right-of-ways and easements.
			Steel casing for water mains under pavement. Length of steel casing.
			Dimensions, stations, and labels of water line relative to features such as right-of-way, centerlines, edge of pavement, coordinates, etc.
			Fire hydrants are a minimum of 6 feet behind curb.
			Water valves are outside of pavement.
			Water meters are a maximum of 3 feet beyond the property line.
			12-gauge, solid strand detection wire shall be installed above all waterlines with waterproof connectors and connections at every valve and hydrant.
			Marking tape with "Caution Buried Waterline" shall be installed approximately 18 inches above all waterlines.
			Cross minor streams/creeks under or beyond culvert/storm drain pipe. Plan view and cross-section of crossing with ground line, vegetative buffer, side slopes, depth of cover, creek, culvert/storm drain pipe, elevations, water line and any fittings. Additional easements as necessary.
			Aerial crossings shall not be permitted.
			Table with columns for all water line diameter, material, and length.
			Signed registered land surveyor's seal.
			Signed, dated professional engineer's seal.

AS-BUILT SANITARY SEWER SYSTEM

1st	2nd	3rd	
			All sanitary sewer main testing and construction completed.
			Scale of 1 inch = 60 feet or larger detail for plan view.
			Elevation data referenced to mean sea level (MSL) and survey referenced to state-plane coordinate system including all new manholes.
			Label perpetual sanitary sewer easements.
			Label all sanitary sewer pipe diameter and material.
			Label all manholes and service line cleanouts.
			Label manhole deflection angles.
			Plan and profile sheets for all sanitary sewer lines except service laterals. Horizontal and vertical scale for profiles. Plan view on same sheet as the profile.
			All utility and storm drain pipe crossings with diameter, material, and vertical clearance on profile.
			Sanitary sewer lines are perpendicular under pavement.
			Steel casing for sanitary sewer lines crossing under exhisting pavement. Size and length of steel casing.
			SDR 26 PVC sanitary sewer lines under pavement shall be constructed with at least 7 ft. of pipe cover. Otherwise DIP shall be used.
			Minimum cover shall be 3 feet over DIP sanitary sewer pipes. Except under roadways shall be 4 ft.

			Gravity sanitary sewer pipe shall be SDR 26 PVC or DIP, Pressure Class 350 for 8"-12" and Pressure Class 250 or 350 for 14"-36" depending on design with Tnemec Perma-shield PL or Protecto 401 interior coating. Cement lining is not allowed for sanitary sewer applications.
			Minimum cover of 4 feet over PVC sanitary sewer pipes.
			Maximum spacing of manholes is 400 feet.
			Minimum sanitary sewer pipe diameter of 8 inches. Minimum service lateral diameter is 6 inches.
			Minimum slope is 0.50%.
			Maximum slope is 15.0%.
			Service laterals are SDR 26 PVC.
			Gravity lines are offset 1 foot from the centerline of the road for new subdivision streets.
			Rim elevation of manholes outside of pavement are 1.5 feet above ground unless located in a landscaped area or close to the edge of pavement.
			Manhole located at every change of direction and grade of sanitary sewer line. Minimum angle between sanitary sewer lines entering and exiting manhole is 90°.
			Service line connections to gravity sanitary sewer line or manhole for residential. Commercial service line connections shall be connected to a manhole.
			A 20 foot permanent, recorded easement around all 8 inch through 18 inch diameter sanitary sewer lines with up to 20 feet of cover and a 40 foot permanent, recorded easement shall be required if cover is over 20 feet outside of right-of-way. A 40 foot permanent, recorded easement on all 24 inch diameter sanitary sewer lines regardless of depth of cover. The sanitary sewer line is in the center of the easement and no buildings or other structures are within the easement. Easements shown on all plat.
			Location, diameter, and material of all sanitary sewer lines.
			Location, diameter, and material of all service laterals.
			Location, diameter, and material of all force mains.
			Location and size of grease trap(s). Minimum size is 1,500 gallons.
			Manholes numbered on the plan with corresponding numbers on the profile.
			Minimum drop from invert in to invert out elevation is 0.20 feet. Any drop from invert in to invert out elevation greater than 2 feet constructed as an outside drop manhole.
			No sanitary sewer lines installed through stormwater/detention ponds including the dam or within its drainage easement.
			Location, diameter, and material of all sanitary sewer lines surrounding the subdivision.
			Location, size, and invert elevations of all special features such as connections to sanitary sewers, concrete encasement, collar walls, elevated sanitary sewer piers, etc.
			Location of all structures, above and below ground, particularly water mains, gas mains, storm drains, utility conduits, etc.
			Label all streets, right-of-ways, and easements.
			Dimensions, stations, and labels to indicate location of sanitary sewer line relative to features such as right-of-way, centerlines, edge of pavement, coordinates, etc.
			Aerial sanitary sewer lines above the 50-year flood line and delineated as such on the plans.
			Location and elevation of adjacent parallel streambeds and adjacent lake/pond surfaces on the plan and profile.
			No trees within permanent water or sanitary sewer easements or above fire protection water mains.
			Minimum of 10 feet horizontal distance between water and sanitary sewer lines and storm drain pipes.
			Minimum 18 inches vertical distance between water and sanitary sewer lines.

			Minimum 1 foot vertical distance between water and sanitary sewer lines and storm drain pipe.
			Marking tape with "Caution Buried Sanitary Sewer line" shall be installed approximately 18 inches above all sanitary sewer lines.
			All sewage pumping stations shall have an auxiliary power source and yard hydrant for wash down purposes. A remote telemetry system compatible with the City's existing system shall be provided.
			Sand traps and oil separators with sample station manholes installed in all sanitary sewer service lines from service stations, garages, car washes, and similar operations. Domestic sewage shall not pass through sand traps, oil separators, or sample stations.
			Grease traps and sample station manholes installed in process waste lines of all sanitary service sewers for commercial, industrial, and institutional establishments with food preparation areas. Domestic sewage shall not pass through grease traps or sample stations.
			Rainwater prevented from entering the sanitary sewer at all dumpster pad locations.
			Oil separators sized to handle two times the expected flow rate.
			Sample station manholes may be required on commercial, industrial, and institutional sanitary service sewers. Domestic sewage shall not pass through sample station manholes.
			Signed registered land surveyor's seal.
			Signed, dated professional engineer's seal.

AS-BUILT SANITARY SEWER PROFILES

1st	2nd	3rd	
			Sanitary sewer profiles.
			Horizontal and vertical scale.
			Pipe diameter, material, length, and slope.
			Ground line.
			Manhole numbers corresponding to plan numbers.
			Manhole elevations (top, invert in, invert out, outside drop at top and bottom).
			Minimum cover of 4 foot over pipes.
			Minimum pipe diameter of 8 inches.
			Minimum slope of 0.50%.
			Maximum slope of 15.0%.
			All utility crossings with diameter, material, and vertical clearance.
			Signed registered land surveyor's seal.
			Signed, dated professional engineer's seal.

NOTES

1st	2nd	3rd	
			Sidewalks shall be installed before final plat, one year after final plat, or on a lot by lot basis.
			A five foot perpetual utility easement shall be provided on both sides of residential streets and cul-de-sacs.
			No obstructions shall be built, constructed or planted within the stormwater management facility, its associated drainage or access easements.
			Developer shall clean out accumulated sediment in stormwater/detention pond at end of construction once disturbed areas have been stabilized.

			No construction activity allowed within existing and future floodplain limits without approved Floodplain Management Plan.
			Owner's Dedication Certificate (when appropriate) Baldwin, Georgia The owner of the land shown on this plat and whose name is subscribed thereto, and in person or through a duly authorized agent, acknowledges that this plat was made from an actual survey and dedicates to the use of the public forever, all streets, parks, drains, easements, and public grounds thereon shown, which comprise a total of _____ acres, for the purposes therein expressed. Owner_____ Date _____ / _____ / _____
			Owners Dedication Certificate Baldwin, Georgia The owner of the land shown on this plat and whose name is subscribed thereto, and in person or through a duly authorized agent, acknowledges that this plat was made from an actual survey and dedicated to the City of Baldwin forever, all sanitary sewers, easements, and associated appurtenances thereon shown. Owner_____ Date _____ / _____ / _____
			Surveyor's Certificate It is hereby certified that this plat is true and correct and was prepared from an actual survey of the property made by me or under my supervision; that all monuments shown heron actually existing or are marked as "Future," and their location, size, type, and material are correctly shown; and that all relevant requirements of the City of Baldwin Zoning Ordinance and City of Baldwin, Georgia Code of Ordinances have been met. By _____ Registered GA Land Surveyor Number _____ Date _____ / _____ / _____
			Pursuant to the City of Baldwin Subdivision Regulations, this plat is given final approval by the City of Baldwin Public Works Director. All of the conditions of approval having been completed, this document is hereby accepted and this approval granted under the authority of said Regulations. Name _____ Public Works Director Date _____ / _____ / _____
			The field data upon which this map or plat is based has a closure precision of one foot in _____ feet, and an angular error of _____ per angle point, and was adjusted using _____ rule."
			This map or plat has been calculated for closure and is found to be accurate within one foot in _____ feet.

MISCELLANEOUS REQUIREMENTS

1st	2nd	3rd	
			Compliance with conditions of zoning.
			Provide a CD with digital plans in AutoCAD, signed, dated pdf file(s), and stormwater management report.
			Provide an ASCII point file in PNEZD format.....
			Submit bond for roads, stormwater management facilities, sidewalk, temporary cul-de-sac, etc.
			Submit a maintenance agreement that includes all structural stormwater controls.
			Submit professional certifications for installation of site specific items such as retaining walls, proprietary devices, etc. stating said items have been constructed/installed in accordance with the approved design and manufacturer's recommendations.
			Submit third-party pipe installation inspection report for all storm drain pipes.
			DRI requirements have been completed.
			All punchlist items from field inspection have been completed.

City of Baldwin
Stormwater Facility Inspection and Maintenance Agreement

THIS AGREEMENT, made and entered into this _____ day of, _____ 20___, by and between (Insert Full Name of Owner) _____ hereinafter called the "Landowner", and the City of Baldwin, hereinafter called the "City". WITNESSETH, that WHEREAS, the Landowner is the owner of certain real property described as (Tax Map/Parcel Identification Number) _____ as recorded by deed in the land records of _____ County, Georgia, Deed Book _____ Page _____, hereinafter called the "Property".

WHEREAS, the Landowner is proceeding to building on and develop the property; and WHEREAS, the Site Plan/Subdivision Plan known as _____, (name of Plan/Development) hereinafter called the "Plan", which is expressly made a part hereof, as approved or to be approved by the City, provides for detention of stormwater within the confines of the property; and

WHEREAS, the City and the Landowner, its successors and assigns, including any homeowners association, agree that the health, safety, and welfare of the residents of Baldwin, Georgia, require that on-site stormwater management facilities be constructed and maintained on the Property; and

WHEREAS, the City requires that on-site stormwater management facilities as shown on the Planbe constructed and adequately maintained by the Landowner, its successors and assign, including any homeowners association.

NOW, THEREFORE, in consideration of the foregoing premises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The on-site stormwater management facilities shall be constructed by the Landowner, its successors and assigns, in accordance with the plans and specifications identified in the Plan.
2. The Landowner, its successors and assigns, including any homeowners association, shall adequately maintain the stormwater management facilities. This includes all pipes, channels, or other conveyances built to convey stormwater to the facility, as well as all structures, improvements, and vegetation provided to control the quantity and quality of the stormwater. Adequate maintenances is herein defined as good working condition so that these facilities are performing their design functions. The City of Baldwin may develop Structural Control Maintenance Checklists which, if develop and where applicable, are to be used to establish what good working condition is acceptable to the City.
3. The Landowner, it successors and assigns, shall inspect the stormwater management facility and submit an inspection report annually. The purpose of the inspection is to assure safe and proper functioning of the facilities. The inspection shall cover the entire facilities, berms, outlet structure, pond areas, access roads, etc. Deficiencies shall be noted in the inspection report. The inspection report shall be prepared, sealed, and signed by an engineer registered in the state of Georgia.
4. The Landowner, its successors and assigns, hereby grant the permission to the City, its authorized agents and employees, to enter upon the Property and to inspect the stormwater management facilities whenever the City deems necessary. The purpose of the inspection is to follow-up on reported deficiencies and/or to respond to citizen complaints. The City shall provide the Landowner, its successors and assigns, copies of the inspection findings and a directive to commence with the repairs if necessary.

5. In the event the Landowner, its successors and assigns, fails to maintain the stormwater management facilities in good working condition acceptable to the City, the City may enter upon the Property and take whatever steps necessary to correct deficiencies identified in the assigns. This provision shall not be constructed to allow the City to erect any structure of permanent nature on the land of the Landowner outside of the easement for the stormwater management facilities. It is expressly understood and agreed that the City is under no obligation to routinely maintain or repair said facilities, and in no event shall this Agreement be constructed to impose any such obligation on the City.
6. The Landowner, its successors and assigs, will perform the work necessary to keep these facilities in good working order as appropriate. In the event a maintenance schedule for stormwater management facilities (including sediment removal) is outlined on the approved plans, the schedule will be followed.
7. In the event the City pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials and the like, the Landowner, its successors and assigns, shall reimburse the City upon demand, within thirty (30) days of receipt thereof for all actual costs incurred by the City hereunder. If reimbursement is not made to the City by the Landowner, its successors and assigns, within the above stated time period, there shall be a lien on all property of the owner which utilizes or will utilize the stormwater management facilities, which lien, when filed in the _____ County Real Estate Records, shall have the same status and priority as liens for ad valorem taxes and may be places on the tax bill and collected as ordinary taxes.
8. This Agreement imposes no liability of any kind whatsoever on the City and the Landowner agrees to hold the City harmless from any liability in the event the stormwater management facilities fail to operate properly.
9. This Agreement shall be recorded among the land records of _____ County, Georgia, and shall constitute a covenant running with the land, and shall be binding to the Landowner, its administrators, executors, assigns, heirs and any other successors in interests, including any homeowners association.

WITNESS the following signatures and seals:

_____

Individual/Company/Corporation/Partnership Name (Seal)

By: _____

The foregoing Agreement was acknowledged before me this _____

day of _____, 20 ____, by _____

NOTARY PUBLIC

My commission expires on: _____.

COUNTY OF _____, GEORGIA

Approved as to Form: _____

(City Attorney Date)

City of Baldwin

Subdivision Final Plat Application

Project Number:_____

Parcel Number:	Zoning:	Application Date:
Subdivision Name:		Phase:
Site Address:		County:

Property Owner: _____

Address: _____

Phone Number: _____ Email: _____

Engineer: _____	Surveyor: _____
Phone Number: _____	Phone Number: _____
Email: _____	Email: _____

Total Acreage:		Length of Road(s):
Number of Lots:	Proposed Use of Lots:	Minimum Lot Size:
Stormwater Management and Conveyance Systems (types):		
Sanitary Sewer System: Public Sanitary Sewer: _____Yes _____ No Jurisdiction: _____ Septic System: _____Yes _____ No Private System: _____Yes _____ No		Water System: Public Water: _____Yes _____ No Jurisdiction: _____ Individual Well: _____Yes _____ No Private System: _____Yes _____ No
Proposed Organization to Control Portion or All of Tract:		
Portion of Property to be Dedicated to the Public:		

Applicant Name (Printed): _____

Applicant Signature: _____

Company: _____

Phone Number: _____ Email: _____

City of Baldwin

Subdivision Preliminary Plat Application

Project Number:_____

Parcel Number:	Zoning:	Application Date:
Subdivision Name:		Phase:
Site Address:		County:
Proposed Use:	Estimated Time for Completion:	

Property Owner: _____

Address: _____

Phone Number: _____ Email: _____

Engineer: _____

Phone Number: _____ Email: _____

Total Acreage:		Length of Proposed Road(s):
Number of Lots:	Average Lot Size:	Minimum Lot Size:
Proposed Stormwater Management and Conveyance Systems (types):		
Sanitary Sewer System: Public Sanitary Sewer: _____Yes _____ No Jurisdiction: _____ Septic System: _____Yes _____ No Private System: _____Yes _____ No		Water System: Public Water: _____Yes _____ No Jurisdiction: _____ Individual Well: _____Yes _____ No Private System: _____Yes _____ No
Proposed Organization to Control Portion or All of Tract:		
Portion of Property to be Dedicated to the Public:		

Applicant Name (Printed): _____

Applicant Signature: _____

Company: _____

Phone Number: _____ Email: _____

City of Baldwin

Development Review Application

Project Number:_____

Parcel Number:	Zoning:	Application Date:
Project Name:		
Site Address:		County:
Proposed Use:		

Property Owner: _____

Address: _____

Phone Number: _____ Email: _____

Engineer: _____

Phone Number: _____ Email: _____

Total Site Acreage:	Proposed Disturbed Acreage:
Proposed Impervious Area (square feet):	Within 200 feet of State Waters?
Proposed Stormwater Management (type):	
Number of Lots:	Length of Proposed Road(s):
Sanitary Sewer System: Public Sanitary Sewer: _____Yes _____ No Jurisdiction: _____ Length of Proposed Sewer Line to be Dedicated as Public (linear feet): _____ Septic System: _____Yes _____ No Private System: _____Yes _____ No	Water System: Public Water: _____Yes _____ No Jurisdiction: _____ Individual Well: _____Yes _____ No Private System: _____Yes _____ No

Applicant Name (Printed): _____

Applicant Signature: _____

Company: _____

Phone Number: _____ Email: _____

City of Baldwin
Minor Land Disturbance Permit Application

Permit Number: _____

NOTE: Total land disturbance including clearing shall be less than 1 acre under this permit.

A site plan shall be submitted with this application. The site plan shall include property owner's name, site address, 24 hour contact name and cell number, construction entrance location, silt fence and all other BMP locations, stream with undisturbed buffer and impervious setback, floodplain area, drainage easements, conservation areas, etc. (as shown on subdivision final plat).

Parcel Number:	Zoning:	Application Date:
Subdivision Name:		
Site Address:		County:

Property Owner: _____

Address: _____

Phone Number: _____ Email: _____

24 Hour Contact: _____

Phone Number: _____ Email: _____

Total Parcel Acreage:	Proposed Disturbed Acreage:
Proposed Impervious Area (structure, driveway, patio, gravel, etc.) (square feet):	
Stream or creek on property/property line?	

Type of Land Disturbance (Check all that apply):

☐Site Preparation Prior to Construction (Building Permit is a separate application)

☐Driveway Access ☐Septic Tank Installation

☐Clearing Only ☐Fence

☐Demolition ☐Pool

☐Other_____

Applicant Name (Printed): _____

Applicant Signature: _____

Company: _____

Phone Number: _____ Email: _____

City of Baldwin
Retaining Wall Permit Application

Permit Number:_____

A site and grading plan, wall profile, and construction details shall be submitted with this application. See City of Baldwin, Georgia Minimum Development Standards Ordinance, latest edition and Retaining Wall Checklist for requirements.

Parcel Number:	Zoning:	Application Date:
Project Name:		
Site Address:		County:

Property Owner: _____

Address: _____

Phone Number: _____ Email: _____

Engineer: _____

Phone Number: _____ Email: _____

Type of Wall:	Length of Wall:
Height of wall at tallest point (measured from top of wall to top of footing):	
Stream or creek on property/property line?	

Wall Characteristics (Check all that apply):

☐Stormwater/detention pond wall, hydrostatic pressure adjacent to wall

☐Surcharge load adjacent to wall (driveway, parking area, sidewalk, etc.)

☐Slope of backfill adjacent to wall is greater than 3:1 (1 foot rise in 3 feet length)

☐Height of wall is greater than 4 feet (measured from top of wall to top of footing)

☐Height of wall is greater than 10 feet (measured from top of wall to top of footing)

Applicant Name (Printed): _____

Applicant Signature: _____

Company: _____

Phone Number: _____ Email: _____

City of Baldwin
Sign Permit Application

Permit Number: _____

Please provide the following with this completed application:

Hold harmless agreement, scaled site plan with location of all structures on the property, construction details of the sign and supporting structures (plan view and elevations with dimensions), written consent of the property owner/agent granting permission for the sign.

A site and grading plan and construction details prepared by a Georgia licensed professional engineer shall be submitted with this application for signs with structures greater than 4 feet in height from top of sign/structure to top of footing of structure and/or signs with structures that exceed 50 SF in area. See City of Baldwin, Georgia Minimum Development Standards Ordinance, Sign Ordinance, and Zoning Ordinance, latest editions for requirements. All construction and installation shall be in accordance with current building and electrical codes.

Parcel Number:	Zoning:	Application Date:
Project Name:		Property Use:
Site Address:		County:

Property Owner: _____

Address: _____

Phone Number: _____ Email: _____

Sign Contractor: _____ Business License No.: _____

Phone Number: _____ Email: _____

Overall dimensions of sign and structure: _____Width _____Length _____ Height

Type of Sign: ☐Permanent ☐Temporary

☐Monument ☐Wall Mounted ☐A-Frame ☐Banner

☐Window ☐Planned Center ☐Other (Explain)_____

☐Illuminated sign – Electrical drawings shall be required specifying electrical requirements including location and size of electrical disconnect, type and size of wiring, conduit diameter, and estimated load. All electrical installations shall be performed by a Georgia licensed electrician.

Notice: No changes shall be made from that which is stated in this application, or in attached plans and specifications, except by submitting a revised application, plans and/or specifications and receiving approval from the City of Baldwin for such change. Granting of a permit shall not be construed as a permit for or an approval of any violation of the Building Code or any other state or local law regulating construction or the performance of construction. I hereby certify that I have read and examined this application and the information provided herein is true and correct. I further certify that all construction will comply with the Minimum Building Codes.

Applicant Name (Printed): _____

Applicant Signature: _____

Company: _____

Phone Number: _____ Email: _____

CITY OF BALDWIN, GEORGIA
WATER SYSTEM ADDITION AND EXPANSION FORM

Water System Name: City of Baldwin
WSID Number: GA 1370001

GENERAL PROJECT INFORMATION

Project Name: _____

Project Description: _____

_____

_____

Project Location: _____

_____

County: _____

Type of Development: _____

Maximum Elevation in Development: _____ (feet)

Number of Service Connections Proposed: _____

Number of Fire Line Connections Proposed: _____

Number of Irrigation Line Connections Proposed: _____

Size(s) of Water Main in Project: _____ (inches)

Length of Water Main to be Installed: _____ (feet) Water Main Material: _____

Wastewater for this Project will be handled by: Septic Tank: ____ or Sewer System: ____ (check one)

PRESSURE/FLOW INFORMATION

a) Static Pressure (point of tie-in): _____ (psi) at _____ feet elevation

b) Elevation at the point of tie-in: _____ feet

c) Flow Available: _____ (gpm) at _____(psi) residual, at the point of tie-in.

d) Size of Water Main at Point of Tie-in to Project: _____ (inches)

e) Include Sketch depicting location of fire hydrants used for testing with distances from connection point.

f) ***Include 24-hour pressure test results for projects connecting to existing systems.***

PLEASE NOTE: ALL APPLICABLE APPROVALS AND/OR PERMITS RELATING TO THE CONSTRUCTION OF THE PROJECT MUST BE OBTAINED PRIOR TO THE START OF ANY CONSTRUCTION, AS REQUIRED.

To the best of my knowledge, the above named project conforms with all applicable state and local government requirements for the approval of public drinking water supply construction projects.

_____	_____	_____	_____
Name	Signature	Title	Date

CITY OF BALDWIN, GEORGIA
SANITARY SEWER EXTENSION SUBMITTAL FORM

1. Name of Local Government: City of Baldwin

   Local Government Official: _____

   P. O. Box 247
   Mailing Address

   Baldwin, GA 30511
   City, State, Zip Code

2. Project Name or Identification: _____

3. Design Engineer(s): _____

   GA P.E. #: _____ Expiration Date: _____

   _____
   Mailing Address

4. Name of Developer:

   _____
   Name

   _____
   Mailing Address

   _____
   City, County, State, Zip Code

5. Proposed Service Area (this project):

   Immediate _____ acres Ultimate _____ acres

6. Type of Developments: (check as applicable)

   Immediate _____ Residential _____ Commercial _____ Other _____ (explain)

7. Number of Lots to be served (residential only):

   Population: _____ Density/acre: _____

8. Population (employees + customers) to be served (commercial – industrial only):

Population: _____ Total Square Feet: _____

9. If receiving industrial wastewater, describe industrial waste characteristics:

_____

_____

_____

_____

Quantity _____ GPD. Describe pretreatment received (if any):

_____

(Use extra sheet if needed)

10. Average Design Flow (this project) _____ GPD Peak _____ GPM
Provide a downstream analysis of flows into the existing sanitary sewer system. Provide sufficient data to analyze the existing facility's ability to handle the hydraulic flow to the treatment works.

11. Design BOD (this project) (INDUSTRIAL and COMMERCIAL APPLICATIONS ONLY):

Average _____ lbs/day

12. List nominal pipe diameter(s) and length:

_____

_____

_____

_____

13. Number, size, and type of pump stations (if any):

_____

_____

Provide design calculations for pump station and force main by separate attachment.

14. Name of the Georgia P.E. that project inspector will report to:_____

Georgia P.E. # _____

15. Provide a certified statement by the Developer that the proposed sewers will not be constructed on or serving structures constructed on property that is used or was previously used as a solid waste landfill.

To the best of my knowledge, I certify that the above information is true and correct.

SIGNATURE OF RESPONSIBLE PERSON

_____

Name (Print) _____

Title or Position _____

Date _____

Additional Comments: