

H. Disputes as to Use. In the event there is any dispute as to whether the use of the Property or any portion or portions thereof complies with the covenants, restrictions, easements or other provisions contained in this Declaration, such dispute shall be referred to the Board, and a determination rendered by the Board with respect to such dispute shall be final and binding on all parties concerned therewith. Any use by Declarant of the Property or any parts thereof in accordance with Section G above shall be deemed a use which complies with this Declaration and shall not be subject to a contrary determination by the Board.

I. Delegation. The Association, pursuant to a resolution duly adopted by the Board, shall have the continuing authority to delegate all or any portion of its responsibilities for maintenance, operation and administration, as provided herein, to any managing agency or entity selected by the Board from time to time and whether or not related to Declarant. All contracts with management companies shall contain a provision that allows the Association to unilaterally terminate the contract without cause after ninety (90) days notice.

J. Term. This Declaration and the terms, provisions, conditions, covenants, restrictions, reservations, regulations, burdens and liens contained herein shall run with and bind the Property and inure to the benefit of Declarant, the Association, Owners, and their respective legal representatives, heirs, successors and assigns for a term of twenty-five (25) years from the date of recording this Declaration in the Public Records, after which time this Declaration shall be automatically renewed and extended for successive periods of ten (10) years each unless at least one (1) year prior to the termination of such twenty-five (25) year term or any such ten (10) year extension there is recorded in the Public Records, an instrument agreeing to terminate this Declaration signed by Owners owning the greater of (i) ninety percent (90%) of the Lots, or (ii) such higher percentage (if any) of Owners prescribed by the applicable provisions of the Planned Community Act, and Institutional Mortgagees holding first mortgages encumbering two-thirds (2/3) of all Lots encumbered by first mortgages held by Institutional Mortgagees, upon which event this Declaration shall be terminated upon the expiration of the fifty (25) year term or the ten (10) year extension during which such instrument was recorded.

K. Rights of Mortgagees.

1. Right to Notice. The Association shall make available for inspection upon request, during normal business hours or under reasonable circumstances, the Association Documents and the books, records and financial statements of the Association to Owners and the holders, insurers or guarantors of any first mortgages encumbering any portion of the Property. In addition, evidence of insurance shall be issued to each Owner and mortgagee holding a mortgage encumbering a Home upon written request to the Association.

2. Rights of Listed Mortgagee. Upon written request to the Association, identifying the name and address of the holder, insurer, or guarantor (such holder, insurer or guarantor is herein referred to as a "Listed Mortgagee") of a mortgage encumbering a Lot and the legal description of such Lot the Association shall provide such Listed Mortgagee with timely written notice of the following:

- i. Any condemnation, loss or casualty loss which affects any material portion of the Association Property;
- ii. Any lapse, cancellation or material modification of any insurance policy or fidelity bond maintained by the Association;

iii. Any proposed action which would require the consent of mortgagees holding a mortgage encumbering a Lot; and

iv. Any failure by an Owner owning a Lot encumbered by a mortgage held, insured or guaranteed by such Listed Mortgagee to perform his obligations under the Association Documents, including, but not limited to, any delinquency in the payment of Assessments, or any other charge owed to the Association by said Owner where such failure or delinquency has continued for a period of sixty (60) days.

3. Right of Listed Mortgagee to Receive Financial Statement. Any Listed Mortgagee shall, upon written request made to the Association, be entitled to financial statements for the Association for the prior fiscal year free of charge and the same shall be furnished within a reasonable time following such request.

L. Approval of Association Lawsuits by Owners. The Association shall be required to obtain the approval of three-fourths (3/4) of all Members (at a duly called meeting of the Members at which a quorum is present) prior to the payment of legal or other fees to persons or entities engaged by the Association for the purpose of suing, or making, preparing or investigating any lawsuit, or commencing any lawsuit other than for the following purposes:

1. the collection of Assessments;
2. the collection of other charges which Owners are obligated to pay pursuant to the Association Documents;
3. the enforcement of the use and occupancy restrictions contained in the Association Documents;
4. in an emergency where waiting to obtain the approval of the Owners creates a substantial risk of irreparable injury to the Association Property or to Owner(s) (the imminent expiration of a statute of limitations shall not be deemed an emergency obviating the need for the requisite vote of three-fourths (3/4) of the Members);
5. filing a compulsory counterclaim; or
6. termination of employment relationship or enforcement of a contract.

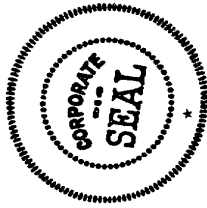
M. Compliance with Provisions. Every person who owns, occupies or acquires any right, title, estate or interest in or to any Lot except as elsewhere herein provided does and shall be conclusively deemed to have consented to and agreed to every limitation, restriction, easement, reservation, condition and covenant contained herein, whether or not any reference to these restrictions is contained in the instrument by which such person acquired an interest in such property.

N. Rights and Requirements of Governmental Authorities. In addition to the rights of the City contained in the City Agreement or set forth herein with respect to the City Agreement, any governmental authority or agency, including, but not limited to the City and the County, their agents, and employees, shall have the right of immediate access to the Property at all times if necessary for the preservation of public health, safety and welfare. Should the Association or its Board fail to maintain the Association Property in accordance with the specifications set forth in the applicable governmental approvals for Bridgewater for an unreasonable time, not to exceed ninety (90) days (or any shorter period of time authorized by the City Agreement) after written request to do so, the City, the County and any other applicable governmental authority, by and through the affirmative action of a majority of the governing

body, shall have the same right (but not the obligation), power and authority as is herein given to the Association and its Board to enforce this Declaration and levy Assessments necessary to maintain the Association Property, it being understood that in such event the applicable governing body may elect to exercise the rights and powers of the Association or its Board, to the extent necessary to take any action required and levy any Assessment that the Association might have taken, either in the name of the Association or otherwise, to cover the cost of maintenance of any Association Property. The rules granted herein shall be supplemental to any governmental authority the City and County may have, and application of this provision shall not diminish, limit, or restrict the right of the City and County to apply any other legal rights it may have.

O. Stormwater Control Measures. The Raleigh City Code requires stormwater runoff from the Property be controlled and nitrogen loading from stormwater runoff from the Property be reduced. To comply with the City Code, the Stormwater Control Measures will be installed and maintained. Failure to maintain the Stormwater Control Measures is a violation of the Raleigh City Code potentially subjecting each Owner to significant daily civil penalties and other enforcement actions. Consequently, on behalf of each Owner, the Association shall maintain, repair, replace and reconstruct the Stormwater Control Measures so that at all times, the Stormwater Control Measures shall perform as designed and at all times shall comply with all applicable law, ordinances, regulations, rules, and directives of the Governmental Authorities. In addition, the Association shall perform maintenance and repair of the Stormwater Control Measures as set forth on Exhibit B. If the Association neglects or fails to maintain, repair, replace, or reconstruct the Stormwater Control Measures, each Owner shall be jointly and severally responsible for such tasks, as required by the City of Raleigh. In the event that the Owner thereafter performs such maintenance, repair, replacement or reconstruction, said Owner shall be entitled to reimbursement from the Association for the cost thereof, or if the Association should fail to reimburse the Owner, said Owner shall be entitled to a pro-rata contribution for such costs from the Owners of every other Lot.

IN WITNESS WHEREOF, this Declaration has been signed by Declarant and the Association on the dates set forth below.



(SEAL)

DECLARANT:

CENTEX HOMES, a Nevada general partnership

By: Centex Real Estate Corporation,
a Nevada corporation
Its: Managing General Partner

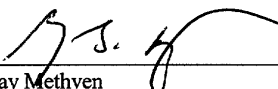
By: [Signature]
Division President

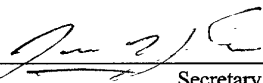
Attest: [Signature]
Assistant Secretary

Date: 9/5/02

ASSOCIATION:

BRIDGEWATER HOMEOWNERS ASSOCIATION, INC.

By: 
 Gray Methven
 President

Attest: 
 Secretary

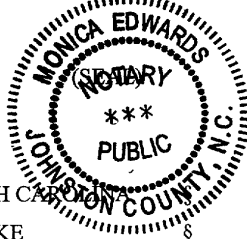
(SEAL)

Date: 9/5/02

STATE OF NORTH CAROLINA §

COUNTY OF WAKE §

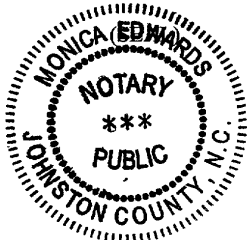
The foregoing instrument was acknowledged before me, this 5 day of September, 2002, by W. Hampton Pitts, Division President of Centex Real Estate corporation, a Nevada corporation, the Managing General Partner of Centex Homes, a Nevada general partnership.



Monica Edwards
 Notary Public for Centex Homes
 My Commission Expires: April 18, 2006

STATE OF NORTH CAROLINA §
 COUNTY OF WAKE §

The foregoing instrument was acknowledged before me, this 5 day of September, 2002, by Gray Methven, President of Bridgewater Homeowners Association, Inc., a North Carolina non profit corporation.



Monica Edwards
 Notary Public for Centex Homes
 My Commission Expires: April 18, 2006

STATE OF NORTH CAROLINA - COUNTY OF WAKE

The foregoing certificate of _____ Notary Public is certified to be correct. This instrument and these certificates are duly registered at the date and time and in the book and page shown on the first page hereof.

WAKE COUNTY REGISTER OF DEEDS

By: _____
Deputy/Asst. Register of Deeds

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EXHIBIT "A"

Legal Description of the Property

LYING and being in the City of Raleigh, Wake County, North Carolina, and being more particularly described as follows:

BEING all of the real property shown on that certain plat entitled "SUBDIVISION PLAT, BRIDGEWATER SUBDIVISION", recorded in **Plat Book 2002, Pages 1246-1247, inclusive**, in the Wake County Register of Deeds Office, which includes **Lots 1-47, inclusive, all in BRIDGEWATER SUBDIVISION**, as shown on the aforementioned recorded plat, to which plat reference is hereby made for a more particular description of same.

EXHIBIT "B"

Stormwater Maintenance Plan

***BRIDGEWATER - CCR4-CLEAN
9/4/02 - Exhibit B***

PRIEST, CRAVEN & ASSOCIATES, INC.

LAND USE CONSULTANTS

EXHIBIT

FOR

BRIDGEWATER SUBDIVISION

STORM WATER OPERATIONS AND MAINTENANCE MANUAL AND BUDGET

RALEIGH, WAKE COUNTY, NORTH CAROLINA

August 29, 2002

PLANNERS / LANDSCAPE DESIGNERS / ENGINEERS / SURVEYORS

3803-B Computer Drive, Suite 104, Raleigh NC 27609. Phone 919/781-0300. Fax 919/781-1588

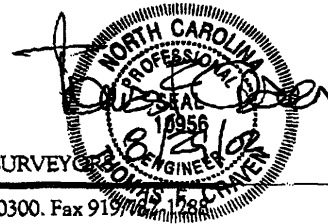


EXHIBIT B

MAINTENANCE PLAN

August 29, 2002

BRIDGEWATER SUBDIVISION OPERATIONS AND MAINTENANCE PLAN AND BUDGET

Raleigh, Wake County, North Carolina

1.0 INTRODUCTION

Bridgewater Subdivision is a single family detached residential development located near the intersection of Strickland Road and Ray Road in north Raleigh, within Wake County.

The City of Raleigh Neuse River Nutrient Reduction Ordinance, Part 10, Chapter 9, applies to this subdivision. Compliance with this ordinance will require the installation and perpetual maintenance of a number of Storm Water Control Measures.

The Storm Water Control Measures are being constructed by Centex Homes, the developer and builders of Bridgewater. Upon completion of the Storm Water Control Measures and other subdivision infrastructure, the measures will be transferred to the Bridgewater Homeowners Association who will be responsible for the operation and maintenance of the Storm Water Control Measures. These measures are shown on construction drawings prepared by Priest, Craven & Associates, Inc., entitled "Bridgewater Subdivision", dated March 12, 2002, and last revised April 12, 2002 and signed by the Chief Engineer of the City of Raleigh on April 24, 2002 (construction drawings).

2.0 STORM WATER CONTROL DEVICES

2.1 General - The approved storm water management plan for Bridgewater calls for the installation of the following Storm Water Control Measures :

2.1.1 Bioretention Basin - A bioretention basin is to be located in the easement between lots 27 and 28, and along the rear of lots 28, 29 and 30. The location and construction details are referenced on sheets 1, 2, and 10 of the construction drawings for Bridgewater Subdivision which are on file in the office of the City of Raleigh Engineering Department. The basin dimensions shall be 300 feet long, 20 feet wide, 4 feet deep, underlain by a 1 foot deep sand bed. The planting soil utilized in the bioretention basin shall be as described in item 17 of the Construction Procedures and Requirements contained on sheet 10 of the construction drawings, a sandy loam with a clay content of less than

25%, and an infiltration rate in excess of 0.52 inches per hour. Planting Soil shall be in a pH range of 5.5 to 6.5, organic matter from 1.5% to 3.0%, and soluble salts shall not exceed 500 ppm. A 2 inch thick layer of shredded hardwood mulch shall cover the surface of the bioretention basin. Planting within the bioretention basin shall be a mixture of trees and shrubs in accordance with the plant list on sheet 12 of the construction drawings (landscape plan).

2.1.2 Dry Detention Basin - A dry detention basin is to be located in the easement to the rear of lots 17 and 18. The location and construction details are referenced on sheets 1, 2, and 11 of the construction drawings for Bridgewater Subdivision which are on file in the office of the City of Raleigh Engineering Department. The basin shall have a storage volume of 18,400 cubic feet and nominal dimensions of 32 feet wide, 145 feet long, and 4 feet deep. A 1.5 foot deep sediment storage zone shall also be provided. A chiseled mark shall be provided on the concrete riser at the top of the sediment storage zone. The concrete block baffle surrounding the outlet orifice on the riser shall also extend to the top of the sediment storage zone. The level of accumulated sediment shall be checked during the annual inspection of the device. Accumulated sediment shall be removed from the basin before the level reaches the top of the sediment storage zone. It is estimated that accumulated sediment will have to be removed every five years. The inlet to the detention basin shall be a grass swale downstream from and a stone lined velocity dissipater pad. The outlet shall consist of a 5 foot diameter concrete riser, with a 2 inch diameter orifice, and a 42 inch diameter barrel structure. A rip rap lined velocity dissipater pad and grass swale shall be downstream of the riser barrel structure. The invert of the riser shall be at elevation 430.5 and the top of the riser shall be at elevation 436.0. The invert of the downstream end of the barrel shall be 430.25. A 12 foot long, rip rap lined emergency spillway shall be provided at elevation 437.5. The anticipated draw down time of the volume of runoff stored in the dry detention basin is 2 days at an average rate of 1 inch per hour.

2.1.3 Grassed Swales - Grassed swales shall be located upstream and downstream of the dry detention basin located on the rear of lots 17 and 18. The longitudinal slope on the grassed swale shall be between one and four percent. The grass shall be a blended fescue mix.

3.0 MAINTENANCE AND INSPECTION REQUIREMENTS

3.1 General - All maintenance and inspections shall be carried out in accordance with the requirements and recommendations contained in Stormwater Best Management Practices, of latest revision, the City of Raleigh Stormwater Design Manual, and Part 10, Chapter 9 of the Code of Ordinances of the City of Raleigh. Persons and/or organizations responsible for maintenance should obtain copies and thoroughly familiarize themselves with this information. The following general maintenance guidelines for each type of device are taken directly from the edition of Stormwater Best Management Practices in place at the time of preparation of the Maintenance Plan for Bridgewater.

3.1.1 Bioretention Area Maintenance Guidelines

A schedule of recommended maintenance for bioretention areas is given in Table 4.7. The table gives general guidance regarding methods, frequency, and time of year for bioretention area maintenance.

1. Planting Soil

The planting soil utilized in the bioretention basin shall be as described in item 17 of the Construction Procedures and Requirements contained on sheet 10 of the construction drawings, a sandy loam with a clay content of less than 25%, and an infiltration rate in excess of 0.52 inches per hour. Planting Soil shall be in a pH range of 5.5 to 6.5, organic matter from 1.5% to 3.0%, and soluble salts shall not exceed 500 ppm.

Urban plant communities tend to become very acidic due to precipitation as well as the influences of stormwater runoff. For this reason, it is recommended that the application of an alkaline substance, such as limestone be considered once or twice a year. Testing of the pH of the organic layer and soil should precede the limestone application to determine the amount of limestone required.

Soil testing should be conducted annually so that the accumulation of toxins and heavy metals can be detected or prevented. Over a period of time, heavy metals and other toxic substances will tend to accumulate in the soil and the plants. Data from other environs such as forest buffers and grass swales suggest accumulation of toxins and heavy metals within five years of installation. However, there is no methodology to estimate the level of toxic materials in the bioretention areas runoff, soil, and plant characteristics will vary from site to site.

As the toxic substances accumulate, the plant biological functions may become impaired, and the plant may experience dwarfed growth followed by mortality. The biota within the soil can also perish and the natural soil chemistry may be altered. The preventative measures would include the removal of the contaminated soil. In some cases, removal and disposal of the entire soil base, as well as the plant material, may be required.

2. Mulch

Bioretention areas should be mulched once the planting of trees and shrubs has occurred. Mulch shall be a two inch deep layer of 12 month old shredded hardwood mulch. Any ground cover specified as plugs may be installed once the area has been mulched. Ground cover established by seeding and/or consisting of grass should not be covered with mulch.

Table 4.7 Example Maintenance Schedule for Bioretention Areas

Description	Method	Frequency	Time of Year
Soil			
Inspect and Repair Erosion	Visual	Monthly	Monthly
Soil Test for toxicity and chemistry	Multiple samples	Once a year	Spring
Organic Layer			
Remulch any void area	By hand	Whenever needed	Whenever needed
Remove previous mulch layer before applying new layer (optional)	By hand	Once every two or three years	Spring
Any additional mulch added	By hand	Once a year	Spring
Plants			
Remove and replacement of all dead and diseased vegetation considered beyond treatment and replant per landscape plan	See planting specifications	Twice a year	3/15 to 4/30 and 10/1 to 11/30

Treat all diseased trees and shrubs	Mechanical or by hand	N/A	Varies, but will depend on insect or diseased infestation
Watering plant material shall take place at the end of each day for fourteen consecutive days and after planting has been completed as needed	By hand	Immediately after completion of project as needed to accommodate any replanting	N/A
Replacement of support stakes	By hand	Once a year	Only remove stakes in the spring
Replace any deficient stakes or wires	By hand	Whenever needed	Whenever needed
Fertilize Plants	By hand, within the plant root zone, with a slow release fertilizer	Twice a year, in accordance with the results and recommendations of the annual soil testing	Spring and Fall

3. Plant Materials

Plant material within the bioretention basin will be a mix of trees and shrubs as specified in the Plant List on sheet 12 of the construction drawings.

An important aspect of landscape architecture is to design areas that require little maintenance. Certain plant species involve maintenance problems due to dropping of fruit or other portions of the plant. Another problem includes plants, primarily trees, that are susceptible to windthrow, which creates a potential hazard to people and property (parked cars). As a result, some plant species will be limited to use in low traffic areas.

Ongoing monitoring and maintenance is vital to the overall success of bioretention areas. Annual maintenance will be required for plant material, mulch layer, and soil layer. A maintenance schedule should include all of the main considerations discussed.

Maintenance requirements will vary depending on the importance of aesthetics. Soil and mulch layer maintenance will most likely be limited to correcting areas of erosion. Replacement of mulch layers may be necessary every two to three years. Mulch should be replaced in the spring. When the mulch

- layer is replaced, the previous layer should be removed first. Plant material upkeep will include addressing problems associated with disease or insect infestations, replacing dead plant material, and any necessary pruning.

4. Non-Erosive Perimeter

The area around the perimeter of the bioretention basin shall be maintained in a stabilized, non-erosive fashion with grass, ground cover, mulch, natural plant litter, or hardened surface areas. If sediment appears within the bioretention basin, the source should be discovered and stabilized. Maintenance shall be performed as follows :

- All grassed areas along the perimeter of the bioretention basin should be mowed to a maximum height of six inches.

3.1.2 Grassed Swale Maintenance Guidelines

Swale maintenance basically involves normal grass management activities such as mowing, reseeding or resodding when necessary and periodic sediment removal, if significant deposition occurs. Maintenance shall be performed as follows:

- At least once annually, remove excess sediment, especially from the upstream edge, to maintain original contours and grading.
- At least once annually, repair and erosion and regrade the swale to ensure that the runoff flows evenly in a thin sheet through the swale.
- At least once annually, during the fall, inspect vegetation and revegetate the swale to maintain a dense growth of vegetation.
- Grassed swales shall be mowed to a maximum height of six inches.
- Add fertilizer, lime and other needed nutrients, annually during the fall in accordance with the recommendations of the annual soil testing.

3.1.3 Dry Detention Basin Maintenance Guidelines

Dry basins require frequent mowing and unclogging of outlets. Poorly designed basins with steep side slopes may be hazardous to mow with power equipment creating difficult and/or expensive maintenance. Trash, debris and sediment accumulation is rapid in most basins, requiring frequent cleaning.

Detention basins usually do not normally fail structurally; however, many dry detention basins are not functioning as designed mainly because they do not empty completely between storms. This reduces

the effective storage volume and detention times for incoming storm flows.

Maintenance Requirements are as follows:

- All grassed areas of an extended dry detention basin should be mowed to a maximum height of six inches.
- Reseeding of any areas not germinating with ground cover. Periodic reseeding may be required to establish grass on areas where seed did not take or has been destroyed. Before seeding, fertilizer (12-12-12) shall be applied at a minimum rate of 12 to 15 pounds per 1000 square feet. The seed should be covered with soil to a depth of approximately 1/4 of an inch. Immediately following the planting, the area should be mulched with straw. At a minimum, semi annual maintenance should include seeding and fertilizing of the dry detention basin shall be performed by the groundskeeping contractor or individual otherwise noted.
- Extended dry detention basins will tend to collect debris. It should be removed whenever it accumulates, or at least quarterly.
- The basin should be inspected annually after a rain event of more than one inch to ensure that it is operating as designed and that debris is removed from inlets and outlets and the crest of the spillway.
- At a minimum, items that should be included in the annual inspection and addressed are:
 1. clogging of the outlet or two rapid a release,
 2. erosion on the banks,
 3. erosion at the inlet and outlet,
 4. sediment accumulation and the need for removal ,
 5. condition of the emergency spillway,
 6. woody vegetation in the embankment, and
 7. condition of embankment.
- Embankments shall be kept clear of any woody vegetation.
- Rip rap pads, channels, and slope protection shall be repaired or replaced as needed.

3.2 Inspections - During the first year period commencing when the devices are placed in operation, inspections of all major components shall be conducted quarterly by the owners representative. At the conclusion of the initial year operating period, the devices should be inspected annually, and reports filed with the City of Raleigh Department of Inspections in accordance with Section 10-9028 of the City Code by a qualified registered Professional Engineer, Professional Land Surveyor, or Landscape Architect. Any deficiencies noted at that time should be corrected as soon as possible. A registered geotechnical engineer shall perform an inspection on the conditions of the embankment every five years.

3.3 Reports and Record keeping - Copies of all inspection reports and records of any remedial or

corrective action taken shall maintained in the files of the Homeowners Association.

3.4 Regularly Scheduled and Preventive Maintenance - The owner shall establish and maintain a schedule of regular maintenance as outlined above and as prescribed by the City requirements and State guidelines contained in Stormwater Best Management Practices. A report detailed scheduled and preventative maintenance activities undertaken shall be maintained by the Homeowners Association.

3.5 Items of Special Concern - The outlet structures and discharge channels should be inspected by the owner's representative after any rainfall event in excess of one inch for any sign of erosion or deterioration of any type. Should any instability become evident, the Homeowners Association should immediately request an inspection by a registered Professional Engineer or the City of Raleigh. Should erosion or deterioration of the devices occur, eroded areas should be repaired by backfilling with earth and covering with sod or planted in accordance with the original design of the device. If the area is a reoccurring problem, an alternate remedial measure should be developed and submitted to the City for their review and approval. All repairs must be carried out under the direction of a registered Professional Engineer.

4.0 EMERGENCY ACTION PLAN

4.1 IDENTIFICATION OF EMERGENCY CONDITIONS

Representatives of the Homeowners Association and maintenance personnel must be prepared to act promptly and effectively when a stormwater control measure exhibits signs of failure. They should be familiar with principal types of failure and their identifiable signs. Because of their familiarity with the measures and associated appurtenances, the owners and maintenance personnel can more readily detect changes in the devices.

The six (6) principal types of catastrophic device failure the owner and maintenance personnel should be aware of are as follows:

1. Overtopping
2. Piping
3. Development of a large slide
4. Failure of an appurtenant structure
5. Seepage
6. One third or more of the bioretention basin plants are diseased or dying

If any of these conditions are noticed, the EMERGENCY ACTION PLAN should be implemented immediately. A description of these conditions is as follows:

4.2 PRINCIPAL TYPES OF DEVICE FAILURE AND EARLY WARNING SIGNS

4.2.1 Overtopping - The water level of should be monitored during periods of heavy rainfall and runoff. The likelihood of the device being overtopped is slight due to the minimum freeboard at the spillway design storm and storage capacity of the device. However, overtopping could result if a large slide or slough in the upstream or downstream slope of the embankment significantly lowered the device crest. Overtopping could also occur if the primary and emergency spillways are not working adequately. The crest areas of the spillways must be cleaned periodically of any accumulated debris to maintain proper operations of flows.

4.2.2 Piping - Piping is usually indicated by a rapid increase in seepage rate, a muddy discharge at or near the downstream toe, sinkholes on or near the embankment and/or a whirlpool (eddy) in the reservoir. Boils at or near the downstream toe may be an indication that piping is beginning. The downstream side of all devices and embankments, particularly in the area of the outlet device should be monitored regularly for any signs of change.

4.2.3 Development of any Slide or Slump - A slide or slump could develop in either the upstream or downstream slope of the embankment and threaten to release any impounded water. The slopes should be periodically inspected for signs of erosion and repairs should be made immediately. The upstream face is especially vulnerable due to saturated conditions and changes in water level. Arch shaped cracks are indications that slides are slipping or beginning to slip.

4.2.4 Failure of an Appurtenant Structure - The sudden or rapid failure of an appurtenant structure could threaten complete failure of the device and release of its impoundment. The concrete or metal outlet devices through the embankment pose the greatest threat to the dam's stability due to the potential for piping. Any large cracks in the slab, sides or walls could be signs of instability and potential piping. Cracks in these structures could also be signs of slope instability and a potential large slide. Culvert slabs and walls should be periodically inspected for signs of cracking and/or seepage. A "crack map" sketch should be kept to identify old and new cracks of monitoring.

4.2.5 Seepage - Seepage may vary in appearance from a soft, wet area to a flowing spring. It may show up first as only an area where vegetation is more lush and darker green. Cattails, reeds, mosses, and other marsh vegetation often become established in a seepage area. The downstream abutment areas where the embankment fill and natural ground interface are very common locations of seepage. Also, the contact between the embankment and the spillway conduit is a very common location, which is generally attributed to poor compaction around the conduit. Due to the way in which conduits are installed, this is generally more evident on the underside of the conduit. Slides may result from excessively saturated embankment slopes.

4.2.6 One Third or More of the Plants in a Bioretention Basin are Diseased or Dying - If one third or more of the plants in any bioretention basin are diseased or dying, remove and replace the diseased and dying plants.

4.3 EMERGENCY NOTIFICATION

The response to an identified emergency situation should proceed in four (4) steps:

1. The owner or person who identifies the emergency should notify local law enforcement officials. Law enforcement and local officials should then proceed at their discretion with warning and evacuation plans for potentially affected areas.
2. The owner should notify the City of Raleigh Engineering Department stormwater officials. Remedial actions to repair items 4.2.1 through 4.2.6 are major items for which escrow funds held by the City may be used.
3. The owner should notify downstream property owners that would be affected by a failure of the measure.
4. After notifying local law enforcement, City of Raleigh officials, and downstream property owners, the owner should initiate efforts to prevent or delay the failure and repair the problem.

EMERGENCY NOTIFICATION PLAN

If you are aware of any peculiarities or sudden changes in the stormwater management measures, water level, device embankments, or outlet structures, please:

FIRST - DIAL 9-1-1

calmly identify yourself, state your location and describe the situation.

then notify the following:

State Warning Point (Non-Business Hours)	(919) 733-3861
State Emergency Management Agency	(919) 733-3942
City of Raleigh Police Department	(919) 890-3335
City of Raleigh Engineering Department	(919) 890-3030
Dept of Environment, Health & Natural Resources, Land Quality Section, Raleigh Regional Office (Business Hours)	(919) 571-4700
Mr./Ms. _____, President Bridgewater Homeowner's Association	(919) _____ (work) (919) _____ (home)
Mr./Ms. _____, Sec. & Treasurer Bridgewater Homeowner's Association	(919) _____ (work) (919) _____ (home)
Emergency Management Agency, Wake County	(919) 856-6480
Sheriff's Department, Wake County	(919) 560-6900
Mr. Joe Jenkins, Land Development Manager, Centex Homes	(919) 760-1110

This Emergency Action Plan should be constantly updated to reflect changes in downstream development that may be affected by potential failures. Names and telephone numbers should be constantly kept up-to-date for all the above listed contract personnel.

Personnel should use their discretion in identifying a condition as an emergency. Most of the conditions described above are signs of impending emergency except small amounts of seepage through small cracks in appurtenances and minor erosion of upstream and downstream embankment faces. However, these conditions should be checked as soon as possible by a qualified professional. When in doubt, call the City of Raleigh Engineering Department.

4.4 EMERGENCY REPAIRS

After making the appropriate notifications for implementing warning procedures, the owner should initiate efforts to prevent or delay failure of the device.

It is also important to know what type of emergency repairs should be attempted for the different modes of failure. The following description of possible actions to take to avoid failure are offered. **Extreme caution must be exercised by those working around the device during implementation of any of these emergency repairs.**

Be sure that the spillways are not blocked with debris and are functioning as efficiently as possible. Debris removal may be difficult due to pressure from high velocity flow and should be accomplished using long poles or hooks. **Personnel should not be allowed close to spillway inlets.**

Open the drain valves on the primary outlet device to lower the water level.

Great care should be taken when attempting to temporarily raise the top of embankments with sandbags or other means to try to prevent overtopping of the device. This is because flood inflow may still increase and result in the overtopping of the raised device. If the temporary raised device fails, the release of an even greater volume and depth of water would result.

If an eroded area has not developed too widely, a temporary remedy may be to cover the discharge area with sand and gravel, or rip-rap stone, to temporarily prevent further erosion.

If a whirlpool (vortex) is visible in the impounded water, attempt to plug the "pipe" at the upstream end of the device by dumping material into the whirlpool or sinkhole. Straw has been used effectively for this purpose. If straw is not readily available, anything (earth, rock, etc.) should be tried. **Extreme caution should be taken during any attempts at temporary repairs.** If the "pipe" is plugged, the owner should be aware this is only a temporary repair. The device should be fully drained and a qualified professional should be contacted to recommend permanent remedial measures.

Attempt emergency repairs to prevent or delay failure. **Extreme caution should be taken during any**

attempts at emergency repairs. Slides may be caused by seepage pressures, a saturated slope, a slope which is too steep, or possibly an earthquake. If a large slide in the upstream or downstream slope has occurred which significantly lowers the crest of the device and threatens to release impounded water, sandbags can be used to temporarily raise the crest to prevent overtopping. A complete breach of the device may result if the embankment slope protection fails and bare soil is exposed to overtopping flow. Temporary repair of the device and appurtenant structures will depend on the nature of the problem. **Extreme caution should be taken during any attempts at temporary repairs.**

5.0 BUDGET

The following annual Budget was developed from information provided by Centex Homes.

1. Liability Insurance and Property Insurance	\$ 600.00
2. Admin., Management, and Annual Inspection Report	\$ 5,800.00
3. Maintenance Cost for mowing, seeding, fertilizing and trash removal	\$ 8,000.00
4. Sediment removal (every 5 years) annualized cost	\$ 500.00
5. Rip-rap replenishment (every 3 years) annualized cost	\$ 500.00

Total	\$ 15,400.00
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EXHIBIT "C"

Approved Form of City Agreement

***BRIDGEWATER - CCR4-CLEAN
9/4/02 - Exhibit C***

EXHIBIT C (FORM OF CITY AGREEMENT)

Instrument Prepared By: Raleigh City Attorney's Office

Brief Description for Index: _____

Parcel Identifier: _____

Mail After Recording To: City Attorney's Office
P.O. Box 590
Raleigh, N.C. 27602

NORTH CAROLINA

STORMWATER ESCROW PROTECTION
EASEMENT AND ACCESS MAINTENANCE
AGREEMENT

COUNTY OF WAKE

THIS STORMWATER ESCROW PROTECTION EASEMENT AND ACCESS MAINTENANCE AGREEMENT made this ____ day of _____, 2002, by and between CENTEX HOMES, a Nevada general partnership (hereinafter referred to as "Developer") and BRIDGWATER HOMEOWNERS ASSOCIATION, INC. (hereinafter referred to as the "Association") (Developer and Association are collectively hereinafter referred to as "Grantors") with, to, and for the benefit of the City of Raleigh, a municipal corporation of the State of North Carolina, whose address is P. O. Box 590, Raleigh, North Carolina 27602 (hereinafter referred to as the "Grantee" or the "City").

WITNESSETH

Whereas, Developer is the owner in fee simple of that certain real property situated in Wake County, North Carolina, and more particularly described in Exhibit A attached hereto (hereinafter referred to as the "Property"); and

Whereas, portions of the Property are restricted for use as Stormwater Control Measures (the "Stormwater Areas"), as described on Exhibit B, and the Association has easement rights over the Stormwater Areas for the purpose of maintaining, repairing, operating, and replacing Stormwater Areas as part of a Stormwater management system for the Property; and

Whereas, the Property is located within the planning jurisdiction of the City and is subject to certain stormwater quantity and quality requirements set forth in Part 10, Chapter 9, Article B, Division I Raleigh City Code (hereinafter referred to as "RCC") as may be amended from time to time; and

Whereas, one of the conditions for development of the Property is the granting or dedication of access and maintenance easements over and across the Stormwater Areas which includes the implementation of certain watershed protection measures as shown on construction drawings prepared by Priest, Craven & Associates entitled "Bridgewater Subdivision" dated March 12, 2002, and last revised April 12, 2002, and signed by the Chief Engineer of the City on April 24,

EXHIBIT C

2002, such as, but not limited to, the construction, operation and maintenance of stormwater control measures for retention and detention as provided in the RCC; and the assumption by the Association of certain specific maintenance, replacement, reconstruction, and repair responsibilities; and

Whereas, this Easement and Agreement has been procured in accordance with the requirements of N.C. Gen. Stat. Chapter 143, Article 21, Part 1 and RCC Section 10-9027 (c).

Now, therefore, for a valuable consideration, including the benefits Grantors may derive therefrom, the receipt of which is hereby acknowledged, Grantors have dedicated, bargained and conveyed and by these presents do hereby dedicate, bargain, sell, grant, and convey into the Grantee, its successors and assigns, (1) a perpetual and irrevocable right and easement over, under, through and across the Stormwater Areas for access and maintenance easements of stormwater control measures (hereinafter referred to as the "Protection Easement") of the nature and character and to the extent hereinafter set forth; more particularly shown and described in Exhibit B attached hereto and incorporated herein by reference; upon which Developer shall construct and the Association shall maintain, repair, replace, and reconstruct as necessary stormwater control measures, including dry detention basins, bio-retention basins, grassed swales, pipes and water control structures on the Stormwater Areas or other water control structures and measures; and (2) a perpetual access and maintenance easement on, over, under and across those portions of the Property shown on Exhibit A and described on Exhibit B as a "Private Drainage Easement" (the "Access Areas") for access to and from the Stormwater Areas (the "Access Easement") for the purpose of permitting City inspection and, if necessary, maintenance, replacement, reconstruction, and repair of the Protection Easement and stormwater control measures as more fully set forth herein and in the RCC.

The terms, conditions and restrictions of the Escrow and Protection Easement and Access Easements are:

1. The requirements pertaining to the Protection Easement are more fully set forth in Part 10, Chapter 9, Article B, Division I of the RCC. The Association represents and warrants that it will be responsible for construction, maintenance, repair and replacement, of all stormwater control measures, appurtenances and vegetation, including detention basins, if any. The Association shall perform maintenance as set forth above and in the Stormwater Operations and Maintenance Manual and Budget attached hereto as Exhibit C and incorporated herein by reference. At all times, stormwater control measures shall perform as designed and shall comply with all applicable laws, ordinances, regulations, rules, and directives of governmental authorities. Developer agrees that prior to its conveying control of the Stormwater Control Measures to the Association by deed or easement, the Developer shall perform all maintenance as set forth in Exhibit C and the RCC, and the Developer for said period will be responsible for construction, maintenance, repair and replacement of all Stormwater Control Measures.

2. If the Association or the Developer shall fail to comply with these requirements or any other obligations imposed herein, in the RCC, or pursuant to the terms of the declaration of covenants, restrictions and easements recorded in Book _____ Page _____, Wake County Registry and any amendments thereto (the "Declaration"), the City may perform such work and

recover the costs thereof from the party who is then responsible for the performance of such requirements and obligations (hereinafter referred to as the "Owner"), provided, however, except in cases of emergencies, the City gives the Owner thirty (30) days prior written notice of and opportunity to cure the Owner's default hereunder.

In the event the City, in its sole discretion, exercises its right established herein and maintains, repairs, reconstructs, or replaces any stormwater control measures, the City shall provide the Owner written notice of the costs of such work and the Owner shall pay said costs within thirty (30) days from the receipt of written notice. Any costs not paid by the Owner to the City within the thirty (30) day period shall be delinquent, and the Owner shall be considered in default of this Agreement. The City may bring an action at law against the Owner plus interest, at eight percent (8%), collection costs, late payment charges and reasonable attorneys' fees, or foreclose a lien against the Property. Written notice as required shall be provided to the City of Raleigh at Post Office Box 590, Raleigh, NC 27602 and to the Owner at either the mailing address provided to the Wake County Tax Assessor or to the registered agent for the Association on file with the Corporations Division of the Secretary of State's Office. Written notice shall be deemed received four days following its deposit, first class mail, with the United States postal system.

The Declaration shall provide the Association the right to impose a special assessment to fund payment of any monies due by the Association to the City pursuant to this Agreement, payment of such special assessment being secured by a lien against all of the Property upon the filing of a claim of lien by the Association or by the City, as the assignee of the Association's lien rights.

The lien rights granted unto the City shall be enforceable pursuant to Article 2A of Chapter 45 of the General Statutes from and after the time of recording a Claim of Lien in the Office of the Clerk of Superior Court in Wake County, which claim shall state the description of the Property encumbered thereby, the name of the Association on behalf of all record owners, the amount due and date when due. The claim of lien shall be recordable any time after default and the lien shall continue in effect until all sums secured by said lien as herein provided shall have been fully paid. Such claims of liens shall include all moneys that are due and payable when the claim of lien is recorded, plus interest at eight percent (8%), collection costs, costs and attorneys' fees, all as above provided. Such claims of lien shall be signed by the City Manager. Upon full payment of all sums secured by such claim of lien, the same shall be satisfied of record.

3. These easements and Agreements give the City the following affirmative rights: the City, its officers, employees, contractors and agents may enter the Protection Easement whenever reasonably necessary for the purpose of inspecting same to determine compliance herewith, to maintain and reconstruct same and make repairs or replacements to the stormwater control measures and appurtenances and conditions as may be necessary or convenient thereto in the event the Association defaults in its obligations. Whenever the City, in its sole discretion, undertakes any maintenance, repair, reconstruction, or replacement work, the City shall be fully reimbursed from the escrow account established in this Agreement.

4. This Agreement shall in no way obligate the City to maintain, replace, reconstruct and repair any stormwater control measure, and the City shall not be liable to any private person, firm,

partnership, company, corporation, governmental agency, or entity for the condition or operation of the stormwater control measure. Further, this Agreement shall in no way diminish, limit, or restrict the right of the City to enforce any of its ordinances as permitted by law.

5. Developer shall establish an escrow account with the City (hereinafter referred to as the "Escrow Agent") which shall be funded initially by a lump sum contribution of the Developer for stormwater control replacement, reconstruction, and major repairs (which shall include the cost for repairing, overtopping, piping, slumps or slides in the dry detention basin, seepage from the dry detention basin, failure of the dry detention basin, and replacement of one-third or more of diseased or dying bio-retention plants, as set forth in paragraph 4 of Exhibit C) (hereinafter referred to as the Major Repairs) and thereafter by additional contributions of the Association (to the extent required to restore the principal amount of the funds in the account as a result of the Association or the City withdrawing any funds from the account as permitted herein).. At the earliest of (i) recordation of the plat showing the Stormwater Areas and the Access Areas or (ii) the issuance of building permits for the buildings on the Property, Developer shall make a lump sum contribution to the escrow account in full satisfaction of all of Developer's future contribution obligations to the escrow account, such lump sum contribution to be equal to the then present value of those required future contributions shown on the schedule attached hereto as Exhibit D, calculated by using a present value discount rate equal to the current prime rate (as determined by the City) at the time of the lump sum payment, such lump sum payment amount to be calculated by the City.

If the Developer or the Association fails to comply with these requirements or any other obligations imposed herein, or in the RCC, the City may perform such work and recover the costs hereof from the escrow account, provided, however, except in cases of emergencies the City gives the applicable Owner thirty (30) days prior written notice of and opportunity to cure the Owner's default hereunder.

6. With the consent of the City, funds may be drawn out of the escrow account for Major Repairs, reconstruction, and replacement of stormwater control measures as determined by the Association. Consent of the City is to be given by its City Manager or his designee. Any funds drawn from the escrow account shall be replaced by the Association in accordance with the schedule of costs used to create the sinking fund escrow account.

7. The Developer shall in all other respects remain the owner of the Property subject to these easements and may make all lawful uses of the Property not inconsistent with these easements.

8. The Grantee does not waive or forfeit the right to take action to ensure compliance with the terms, conditions and purposes of this Easement and Agreement by a prior failure to act.

9. The designation of Developer, Association, Grantors and Grantee shall include the parties, heirs, successors, and assigns.

10. All amendments to this Agreement made during the initial ten year period following the date hereof shall be executed in writing by the Developer, the Association, and the Grantee, their successors and assigns. All amendments to this Agreement made after the initial ten year period

following the date hereof shall be executed in writing by the Association and the Grantee; their successors and assigns and need not be executed by the Developer. No Amendment to this Agreement shall become effective until executed by the appropriate above-named parties, approved by the City Attorney and recorded in the office of the Register of Deeds of Wake County, North Carolina.

TO HAVE AND TO HOLD the aforesaid rights, privileges and easements herein to the Grantee, its successors and assigns forever and Grantors do covenant that Grantors are seized of said premises in fee or by easement and have the right to convey the same, and as set forth below the same are free from encumbrances and that Grantors will warrant and defend the said title to the same against claims of all persons whosoever.

IN WITNESS WHEREOF, Grantors have caused this instrument to be executed under seal as of the day and year first above written.

Developer
CENTEX HOMES, a Nevada general partnership

By: Centex Real Estate Corporation, a Nevada corporation
Its: Managing General Partner

By: _____
W. Hampton Pitts
Division President

Association
BRIDGEWATER HOMEOWNERS ASSOCIATION, INC., a
North Carolina non profit corporation

By: _____
Gray Methven, President

Grantee and Escrow Agent

By: _____

J. Russell Allen, City Manager

Attested:

By: _____
Gail Smith

STATE OF NORTH CAROLINA
COUNTY OF WAKE

I, the undersigned Notary Public, certify that W. Hampton Pitts personally came before me this day and acknowledged he/she is the Division President of Centex Real Estate Corporation, a Nevada corporation and the Managing General Partner of Centex Homes, a Nevada general partnership and that he/she as such officer being authorized to do so executed the foregoing instrument on behalf of said entity.

Witness my hand and official stamp or seal, on this _____ of _____.

Notary Public

My Commission Expires: _____

STATE OF NORTH CAROLINA
COUNTY OF WAKE

I, the undersigned Notary Public, certify that Gray Methven personally came before me this day and acknowledged that he /she is the President of Bridgewater Homeowners Association, Inc., a corporation, and that he/she, as such officer, being authorized to do so, executed the foregoing instrument on behalf of the corporation.

Witness my hand and official stamp or seal, on this the _____ day of _____.

Notary Public

My commission expires: _____

STATE OF NORTH CAROLINA
COUNTY OF WAKE

This is to certify that on the _____, Gail Smith, with whom I am personally acquainted who being by me duly sworn, says that she is the City Clerk and J. Russell Allen is the City Manager of the City of Raleigh, a municipal corporation, that she knows the corporate seal of said municipal corporation; that the seal affixed to the foregoing instrument is said corporate seal, and the name of the municipal corporation was subscribed thereto by the City Clerk and that the said corporate seal was affixed, all by order of the governing body of said municipal corporation, and that said instrument is the act and deed of said municipal corporation.

Witness my hand and official stamp or seal, on this the _____ day of _____.

Notary Public

My Commission Expires: _____

N:\DIVISION\RALEIGH\BRIDGWATER\Bridgwtr-City Escrow#3-CLN.doc

EXHIBIT "A"

Legal Description of the Property

LYING and being in the City of Raleigh, Wake County, North Carolina, and being more particularly described as follows:

BEING all of the real property shown on that certain plat entitled "SUBDIVISION PLAT, BRIDGEWATER SUBDIVISION", recorded in **Plat Book 2002, Page 1246-1247, inclusive**, in the Wake County Register of Deeds Office, which includes **Lots 1-47, inclusive, in BRIDGEWATER SUBDIVISION**, as shown on the aforementioned recorded plat, to which plat reference is hereby made for a more particular description of same.

EXHIBIT C

EXHIBIT "B"

Description of the Stormwater Areas

That certain property lying and being in Raleigh, Wake County, North Carolina and more particularly described as follows:

BEING those portions of the real property shown on that certain plat entitled "SUBDIVISION PLAT, BRIDGEWATER SUBDIVISION", recorded in **Plat Book 2002, Page 1246-1247, inclusive**, in the Wake County Register of Deeds Office, designated as a "Private Drainage Easement", in **Bridgewater Subdivision**, as shown on the referenced recorded plat, to which plat reference is hereby made for a more particular description of same. Stormwater Areas are located by private drainage easement on portions of the following lots: Lots 6-8, inclusive, Lots 10-12, inclusive, Lots 17-19, inclusive, Lots 27-30, inclusive, Lots 36-37, inclusive, Lots 41-42, inclusive, and Lots 45-46, inclusive, as shown on the referenced recorded plat.

EXHIBIT C

PRIEST, CRAVEN & ASSOCIATES, INC.

LAND USE CONSULTANTS

EXHIBIT

FOR

BRIDGEWATER SUBDIVISION

STORM WATER OPERATIONS AND MAINTENANCE MANUAL AND BUDGET

RALEIGH, WAKE COUNTY, NORTH CAROLINA

August 29, 2002



PLANNERS /LANDSCAPE DESIGNERS /E

3803-B Computer Drive, Suite 104, Raleigh NC 27609.1

(Also Part of Exhibit C of Bridgewater
Declaration of Covenants, Restrictions &
Easements)

EXHIBIT C

MAINTENANCE PLAN

August 29, 2002

BRIDGEWATER SUBDIVISION OPERATIONS AND MAINTENANCE PLAN AND BUDGET

Raleigh, Wake County, North Carolina

1.0 INTRODUCTION

Bridgewater Subdivision is a single family detached residential development located near the intersection of Strickland Road and Ray Road in north Raleigh, within Wake County.

The City of Raleigh Neuse River Nutrient Reduction Ordinance, Part 10, Chapter 9, applies to this subdivision. Compliance with this ordinance will require the installation and perpetual maintenance of a number of Storm Water Control Measures.

The Storm Water Control Measures are being constructed by Centex Homes, the developer and builders of Bridgewater. Upon completion of the Storm Water Control Measures and other subdivision infrastructure, the measures will be transferred to the Bridgewater Homeowners Association who will be responsible for the operation and maintenance of the Storm Water Control Measures. These measures are shown on construction drawings prepared by Priest, Craven & Associates, Inc., entitled "Bridgewater Subdivision", dated March 12, 2002, and last revised April 12, 2002 and signed by the Chief Engineer of the City of Raleigh on April 24, 2002 (construction drawings).

2.0 STORM WATER CONTROL DEVICES

2.1 General - The approved storm water management plan for Bridgewater calls for the installation of the following Storm Water Control Measures :

2.1.1 Bioretention Basin - A bioretention basin is to be located in the easement between lots 27 and 28, and along the rear of lots 28, 29 and 30. The location and construction details are referenced on sheets 1, 2, and 10 of the construction drawings for Bridgewater Subdivision which are on file in the office of the City of Raleigh Engineering Department. The basin dimensions shall be 300 feet long, 20 feet wide, 4 feet deep, underlain by a 1 foot deep sand bed. The planting soil utilized in the bioretention basin shall be as described in item 17 of the Construction Procedures and Requirements contained on sheet 10 of the construction drawings, a sandy loam with a clay content of less than

25%, and an infiltration rate in excess of 0.52 inches per hour. Planting Soil shall be in a pH range of 5.5 to 6.5, organic matter from 1.5% to 3.0%, and soluble salts shall not exceed 500 ppm. A 2 inch thick layer of shredded hardwood mulch shall cover the surface of the bioretention basin. Planting within the bioretention basin shall be a mixture of trees and shrubs in accordance with the plant list on sheet 12 of the construction drawings (landscape plan).

2.1.2 Dry Detention Basin - A dry detention basin is to be located in the easement to the rear of lots 17 and 18. The location and construction details are referenced on sheets 1, 2, and 11 of the construction drawings for Bridgewater Subdivision which are on file in the office of the City of Raleigh Engineering Department. The basin shall have a storage volume of 18,400 cubic feet and nominal dimensions of 32 feet wide, 145 feet long, and 4 feet deep. A 1.5 foot deep sediment storage zone shall also be provided. A chiseled mark shall be provided on the concrete riser at the top of the sediment storage zone. The concrete block baffle surrounding the outlet orifice on the riser shall also extend to the top of the sediment storage zone. The level of accumulated sediment shall be checked during the annual inspection of the device. Accumulated sediment shall be removed from the basin before the level reaches the top of the sediment storage zone. It is estimated that accumulated sediment will have to be removed every five years. The inlet to the detention basin shall be a grass swale downstream from and a stone lined velocity dissipater pad. The outlet shall consist of a 5 foot diameter concrete riser, with a 2 inch diameter orifice, and a 42 inch diameter barrel structure. A rip rap lined velocity dissipater pad and grass swale shall be downstream of the riser barrel structure. The invert of the riser shall be at elevation 430.5 and the top of the riser shall be at elevation 436.0. The invert of the downstream end of the barrel shall be 430.25. A 12 foot long, rip rap lined emergency spillway shall be provided at elevation 437.5. The anticipated draw down time of the volume of runoff stored in the dry detention basin is 2 days at an average rate of 1 inch per hour.

2.1.3 Grassed Swales - Grassed swales shall be located upstream and downstream of the dry detention basin located on the rear of lots 17 and 18. The longitudinal slope on the grassed swale shall be between one and four percent. The grass shall be a blended fescue mix.

3.0 MAINTENANCE AND INSPECTION REQUIREMENTS

3.1 General - All maintenance and inspections shall be carried out in accordance with the requirements and recommendations contained in Stormwater Best Management Practices, of latest revision, the City of Raleigh Stormwater Design Manual, and Part 10, Chapter 9 of the Code of Ordinances of the City of Raleigh. Persons and/or organizations responsible for maintenance should obtain copies and thoroughly familiarize themselves with this information. The following general maintenance guidelines for each type of device are taken directly from the edition of Stormwater Best Management Practices in place at the time of preparation of the Maintenance Plan for Bridgewater.

3.1.1 Bioretention Area Maintenance Guidelines

A schedule of recommended maintenance for bioretention areas is given in Table 4.7. The table gives general guidance regarding methods, frequency, and time of year for bioretention area maintenance.

1. Planting Soil

The planting soil utilized in the bioretention basin shall be as described in item 17 of the Construction Procedures and Requirements contained on sheet 10 of the construction drawings, a sandy loam with a clay content of less than 25%, and an infiltration rate in excess of 0.52 inches per hour. Planting Soil shall be in a pH range of 5.5 to 6.5, organic matter from 1.5% to 3.0%, and soluble salts shall not exceed 500 ppm.

Urban plant communities tend to become very acidic due to precipitation as well as the influences of stormwater runoff. For this reason, it is recommended that the application of an alkaline substance, such as limestone be considered once or twice a year. Testing of the pH of the organic layer and soil should precede the limestone, application to determine the amount of limestone required.

Soil testing should be conducted annually so that the accumulation of toxins and heavy metals can be detected or prevented. Over a period of time, heavy metals and other toxic substances will tend to accumulate in the soil and the plants. Data from other environs such as forest buffers and grass swales suggest accumulation of toxins and heavy metals within five years of installation. However, there is no methodology to estimate the level of toxic materials in the bioretention areas runoff, soil, and plant characteristics will vary from site to site.

As the toxic substances accumulate, the plant biological functions may become impaired, and the plant may experience dwarfed growth followed by mortality. The biota within the soil can also perish and the natural soil chemistry may be altered. The preventative measures would include the removal of the contaminated soil. In some cases, removal and disposal of the entire soil base, as well as the plant material, may be required.

2. Mulch

Bioretention areas should be mulched once the planting of trees and shrubs has occurred. Mulch shall be a two inch deep layer of 12 month old shredded hardwood mulch. Any ground cover specified as plugs may be installed once the area has been mulched. Ground cover established by seeding and/or consisting of grass should not be covered with mulch.

EXHIBIT C

Table 4.7 Example Maintenance Schedule for Bioretention Areas

Description	Method	Frequency	Time of Year
Soil			
Inspect and Repair Erosion	Visual	Monthly	Monthly
Soil Test for toxicity and chemistry	Multiple samples	Once a year	Spring
Organic Layer			
Remulch any void area	By hand	Whenever needed	Whenever needed
Remove previous mulch layer before applying new layer (optional)	By hand	Once every two or three years	Spring
Any additional mulch added	By hand	Once a year	Spring
Plants			
Remove and replacement of all dead and diseased vegetation considered beyond treatment and replant per landscape plan	See planting specifications	Twice a year	3/15 to 4/30 and 10/1 to 11/30

Treat all diseased trees and shrubs	Mechanical or by hand	N/A	Varies, but will depend on insect or diseased infestation
Watering plant material shall take place at the end of each day for fourteen consecutive days and after planting has been completed as needed	By hand	Immediately after completion of project as needed to accommodate any replanting	N/A
Replacement of support stakes	By hand	Once a year	Only remove stakes in the spring
Replace any deficient stakes or wires	By hand	Whenever needed	Whenever needed
Fertilize Plants	By hand, within the plant root zone, with a slow release fertilizer	Twice a year, in accordance with the results and recommendations of the annual soil testing	Spring and Fall

3. Plant Materials

Plant material within the bioretention basin will be a mix of trees and shrubs as specified in the Plant List on sheet 12 of the construction drawings.

An important aspect of landscape architecture is to design areas that require little maintenance. Certain plant species involve maintenance problems due to dropping of fruit or other portions of the plant. Another problem includes plants, primarily trees, that are susceptible to windthrow, which creates a potential hazard to people and property (parked cars). As a result, some plant species will be limited to use in low traffic areas.

Ongoing monitoring and maintenance is vital to the overall success of bioretention areas. Annual maintenance will be required for plant material, mulch layer, and soil layer. A maintenance schedule should include all of the main considerations discussed.

Maintenance requirements will vary depending on the importance of aesthetics. Soil and mulch layer maintenance will most likely be limited to correcting areas of erosion. Replacement of mulch layers may be necessary every two to three years. Mulch should be replaced in the spring. When the mulch

- layer is replaced, the previous layer should be removed first. Plant material upkeep will include addressing problems associated with disease or insect infestations, replacing dead plant material, and any necessary pruning.

4. Non-Erosive Perimeter

The area around the perimeter of the bioretention basin shall be maintained in a stabilized, non-erosive fashion with grass, ground cover, mulch, natural plant litter, or hardened surface areas. If sediment appears within the bioretention basin, the source should be discovered and stabilized. Maintenance shall be performed as follows :

- All grassed areas along the perimeter of the bioretention basin should be mowed to a maximum height of six inches.

3.1.2 Grassed Swale Maintenance Guidelines

- Swale maintenance basically involves normal grass management activities such as mowing, reseeding or resodding when necessary and periodic sediment removal, if significant deposition occurs. Maintenance shall be performed as follows:

- At least once annually, remove excess sediment, especially from the upstream edge, to maintain original contours and grading.
- At least once annually, repair and erosion and regrade the swale to ensure that the runoff flows evenly in a thin sheet through the swale.
- At least once annually, during the fall, inspect vegetation and revegetate the swale to maintain a dense growth of vegetation.
- Grassed swales shall be mowed to a maximum height of six inches.
- Add fertilizer, lime and other needed nutrients, annually during the fall in accordance with the recommendations of the annual soil testing.

3.1.3 Dry Detention Basin Maintenance Guidelines

Dry basins require frequent mowing and unclogging of outlets. Poorly designed basins with steep side slopes may be hazardous to mow with power equipment creating difficult and/or expensive maintenance. Trash, debris and sediment accumulation is rapid in most basins, requiring frequent cleaning.

Detention basins usually do not normally fail structurally; however, many dry detention basins are not functioning as designed mainly because they do not empty completely between storms. This reduces

the effective storage volume and detention times for incoming storm flows.

Maintenance Requirements are as follows:

- All grassed areas of an extended dry detention basin should be mowed to a maximum height of six inches.
- Reseeding of any areas not germinating with ground cover. Periodic reseeding may be required to establish grass on areas where seed did not take or has been destroyed. Before seeding, fertilizer (12-12-12) shall be applied at a minimum rate of 12 to 15 pounds per 1000 square feet. The seed should be covered with soil to a depth of approximately 1/4 of an inch. Immediately following the planting, the area should be mulched with straw. At a minimum, semi annual maintenance should include seeding and fertilizing of the dry detention basin shall be performed by the groundskeeping contractor or individual otherwise noted.
- Extended dry detention basins will tend to collect debris. It should be removed whenever it accumulates, or at least quarterly.
- The basin should be inspected annually after a rain event of more than one inch to ensure that it is operating as designed and that debris is removed from inlets and outlets and the crest of the spillway.
- At a minimum, items that should be included in the annual inspection and addressed are:
 1. clogging of the outlet or two rapid a release,
 2. erosion on the banks,
 3. erosion at the inlet and outlet,
 4. sediment accumulation and the need for removal ,
 5. condition of the emergency spillway,
 6. woody vegetation in the embankment, and
 7. condition of embankment.
- Embankments shall be kept clear of any woody vegetation.
- Rip rap pads, channels, and slope protection shall be repaired or replaced as needed.

3.2 Inspections - During the first year period commencing when the devices are placed in operation, inspections of all major components shall be conducted quarterly by the owners representative. At the conclusion of the initial year operating period, the devices should be inspected annually, and reports filed with the City of Raleigh Department of Inspections in accordance with Section 10-9028 of the City Code by a qualified registered Professional Engineer, Professional Land Surveyor, or Landscape Architect. Any deficiencies noted at that time should be corrected as soon as possible. A registered geotechnical engineer shall perform an inspection on the conditions of the embankment every five years.

3.3 Reports and Record keeping - Copies of all inspection reports and records of any remedial or

corrective action taken shall maintained in the files of the Homeowners Association.

3.4 Regularly Scheduled and Preventive Maintenance - The owner shall establish and maintain a schedule of regular maintenance as outlined above and as prescribed by the City requirements and State guidelines contained in Stormwater Best Management Practices. A report detailed scheduled and preventative maintenance activities undertaken shall be maintained by the Homeowners Association.

3.5 Items of Special Concern - The outlet structures and discharge channels should be inspected by the owner's representative after any rainfall event in excess on one inch for any sign of erosion or deterioration of any type. Should any instability become evident, the Homeowners Association should immediately request an inspection by a registered Professional Engineer or the City of Raleigh. Should erosion or deterioration of the devices occur, eroded areas should be repaired by backfilling with earth and covering with sod or planted in accordance with the original design of the device. If the area is a reoccurring problem, an alternate remedial measure should be developed and submitted to the City for their review and approval. All repairs must be carried out under the direction of a registered Professional Engineer.

4.0 EMERGENCY ACTION PLAN

4.1 IDENTIFICATION OF EMERGENCY CONDITIONS

Representatives of the Homeowners Association and maintenance personnel must be prepared to act promptly and effectively when a stormwater control measure exhibits signs of failure. They should be familiar with principal types of failure and their identifiable signs. Because of their familiarity with the measures and associated appurtenances, the owners and maintenance personnel can more readily detect changes in the devices.

The six (6) principal types of catastrophic device failure the owner and maintenance personnel should be aware of are as follows:

1. Overtopping
2. Piping
3. Development of a large slide
4. Failure of an appurtenant structure
5. Seepage
6. One third or more of the bioretention basin plants are diseased or dying

If any of these conditions are noticed, the EMERGENCY ACTION PLAN should be implemented immediately. A description of these conditions is as follows:

4.2 PRINCIPAL TYPES OF DEVICE FAILURE AND EARLY WARNING SIGNS

4.2.1 Overtopping - The water level of should be monitored during periods of heavy rainfall and runoff. The likelihood of the device being overtopped is slight due to the minimum freeboard at the spillway design storm and storage capacity of the device. However, overtopping could result if a large slide or slough in the upstream or downstream slope of the embankment significantly lowered the device crest. Overtopping could also occur if the primary and emergency spillways are not working adequately. The crest areas of the spillways must be cleaned periodically of any accumulated debris to maintain proper operations of flows.

4.2.2 Piping - Piping is usually indicated by a rapid increase in seepage rate, a muddy discharge at or near the downstream toe, sinkholes on or near the embankment and/or a whirlpool (eddy) in the reservoir. Boils at or near the downstream toe may be an indication that piping is beginning. The downstream side of all devices and embankments, particularly in the area of the outlet device should be monitored regularly for any signs of change.

4.2.3 Development of any Slide or Slump - A slide or slump could develop in either the upstream or downstream slope of the embankment and threaten to release any impounded water. The slopes should be periodically inspected for signs of erosion and repairs should be made immediately. The upstream face is especially vulnerable due to saturated conditions and changes in water level. Arch shaped cracks are indications that slides are slipping or beginning to slip.

4.2.4 Failure of an Appurtenant Structure - The sudden or rapid failure of an appurtenant structure could threaten complete failure of the device and release of its impoundment. The concrete or metal outlet devices through the embankment pose the greatest threat to the dam's stability due to the potential for piping. Any large cracks in the slab, sides or walls could be signs of instability and potential piping. Cracks in these structures could also be signs of slope instability and a potential large slide. Culvert slabs and walls should be periodically inspected for signs of cracking and/or seepage. A "crack map" sketch should be kept to identify old and new cracks of monitoring.

4.2.5 Seepage - Seepage may vary in appearance from a soft, wet area to a flowing spring. It may show up first as only an area where vegetation is more lush and darker green. Cattails, reeds, mosses, and other marsh vegetation often become established in a seepage area. The downstream abutment areas where the embankment fill and natural ground interface are very common locations of seepage. Also, the contact between the embankment and the spillway conduit is a very common location, which is generally attributed to poor compaction around the conduit. Due to the way in which conduits are installed, this is generally more evident on the underside of the conduit. Slides may result from excessively saturated embankment slopes.

4.2.6 One Third or More of the Plants in a Bioretention Basin are Diseased or Dying - If one third or more of the plants in any bioretention basin are diseased or dying, remove and replace the diseased and dying plants.

4.3 EMERGENCY NOTIFICATION

The response to an identified emergency situation should proceed in four (4) steps:

1. The owner or person who identifies the emergency should notify local law enforcement officials. Law enforcement and local officials should then proceed at their discretion with warning and evacuation plans for potentially affected areas.
2. The owner should notify the City of Raleigh Engineering Department stormwater officials. Remedial actions to repair items 4.2.1 through 4.2.6 are major items for which escrow funds held by the City may be used.
3. The owner should notify downstream property owners that would be affected by a failure of the measure.
4. After notifying local law enforcement, City of Raleigh officials, and downstream property owners, the owner should initiate efforts to prevent or delay the failure and repair the problem.

EMERGENCY NOTIFICATION PLAN

If you are aware of any peculiarities or sudden changes in the stormwater management measures, water level, device embankments, or outlet structures, please:

FIRST - DIAL 9-1-1

calmly identify yourself, state your location and describe the situation.

then notify the following:

State Warning Point (Non-Business Hours)	(919) 733-3861
State Emergency Management Agency	(919) 733-3942
City of Raleigh Police Department	(919) 890-3335
City of Raleigh Engineering Department	(919) 890-3030
Dept of Environment, Health & Natural Resources, Land Quality Section, Raleigh Regional Office (Business Hours)	(919) 571-4700
Mr./Ms. _____, President Bridgewater Homeowner's Association	(919) _____ (work) (919) _____ (home)
Mr./Ms. _____, Sec. & Treasurer Bridgewater Homeowner's Association	(919) _____ (work) (919) _____ (home)
Emergency Management Agency, Wake County	(919) 856-6480
Sheriff's Department, Wake County	(919) 560-6900
Mr. Joe Jenkins, Land Development Manager, Centex Homes	(919) 760-1110

This Emergency Action Plan should be constantly updated to reflect changes in downstream development that may be affected by potential failures. Names and telephone numbers should be constantly kept up-to-date for all the above listed contract personnel.

Personnel should use their discretion in identifying a condition as an emergency. Most of the conditions described above are signs of impending emergency except small amounts of seepage through small cracks in appurtenances and minor erosion of upstream and downstream embankment faces. However, these conditions should be checked as soon as possible by a qualified professional. When in doubt, call the City of Raleigh Engineering Department.

4.4 EMERGENCY REPAIRS

After making the appropriate notifications for implementing warning procedures, the owner should initiate efforts to prevent or delay failure of the device.

It is also important to know what type of emergency repairs should be attempted for the different modes of failure. The following description of possible actions to take to avoid failure are offered. **Extreme caution must be exercised by those working around the device during implementation of any of these emergency repairs.**

Be sure that the spillways are not blocked with debris and are functioning as efficiently as possible. Debris removal may be difficult due to pressure from high velocity flow and should be accomplished using long poles or hooks. **Personnel should not be allowed close to spillway inlets.**

Open the drain valves on the primary outlet device to lower the water level.

Great care should be taken when attempting to temporarily raise the top of embankments with sandbags or other means to try to prevent overtopping of the device. This is because flood inflow may still increase and result in the overtopping of the raised device. If the temporary raised device fails, the release of an even greater volume and depth of water would result.

If an eroded area has not developed too widely, a temporary remedy may be to cover the discharge area with sand and gravel, or rip-rap stone, to temporarily prevent further erosion.

If a whirlpool (vortex) is visible in the impounded water, attempt to plug the "pipe" at the upstream end of the device by dumping material into the whirlpool or sinkhole. Straw has been used effectively for this purpose. If straw is not readily available, anything (earth, rock, etc.) should be tried. **Extreme caution should be taken during any attempts at temporary repairs.** If the "pipe" is plugged, the owner should be aware this is only a temporary repair. The device should be fully drained and a qualified professional should be contacted to recommend permanent remedial measures.

Attempt emergency repairs to prevent or delay failure. **Extreme caution should be taken during any**

attempts at emergency repairs. Slides may be caused by seepage pressures, a saturated slope, a slope which is too steep, or possibly an earthquake. If a large slide in the upstream or downstream slope has occurred which significantly lowers the crest of the device and threatens to release impounded water, sandbags can be used to temporarily raise the crest to prevent overtopping. A complete breach of the device may result if the embankment slope protection fails and bare soil is exposed to overtopping flow. Temporary repair of the device and appurtenant structures will depend on the nature of the problem. **Extreme caution should be taken during any attempts at temporary repairs.**

5.0 BUDGET

The following annual Budget was developed from information provided by Centex Homes.

1. Liability Insurance and Property Insurance	\$ 600.00
2. Admin., Management, and Annual Inspection Report	\$ 5,800.00
3. Maintenance Cost for mowing, seeding, fertilizing and trash removal	\$ 8,000.00
4. Sediment removal (every 5 years) annualized cost	\$ 500.00
5. Rip-rap replenishment (every 3 years) annualized cost	\$ 500.00
Total	\$ 15,400.00



City of Raleigh
North Carolina

Inspections Department

Facsimile Transmittal Sheet

To: JUE JENNINS	From: JPP
Fax #: 571 - 8315	Tel. # 890-3766
	Fax. # (919) 890-3016
Date:	Total # pages (including cover page): 3
Subject:	

Message:

THESE FIGURES ARE BASED ON THE FAX ATTACHED -

Visi

EXHIBIT D

(Also Part of Exhibit C of Bridgewater
Declaration of Covenants, Restrictions &
Easements)

BRIDGEWATER SUBDIVISION

YR	Amount Escrow
0	9,307.69
1	6,411.96
2	6,411.96
3	6,411.96
4	6,411.96
5	6,411.96
6	4,136.75
7	4,136.75
8	4,136.75
9	4,136.75
10	4,136.75

TOTAL 62,051.25

Post-It® Fax Note	7671	Date	# of pages ▶ X 3
To <u>ASHAN</u>		From <u>Joe</u>	
Co./Dept.		Co.	
Phone #		Phone #	
Fax # <u>789-4882</u>		Fax #	

Escrow \$

EXHIBIT D

06/14/02 FRI 12:25 FAX

CENTEX HOMES

PAGE 002
03/03Centex Homes
PO Box 31528
Raleigh, NC 27622
919-760-1119
919-371-8315 Fax

BRIDGE WATER SUBDIV N. 65-02

Facsimile Transmittal

To: Bill Brower Fax: 890-3016

From: Gray Methven Date: June 12, 2002

Re: Bridgewater Storm Sewer Pages: 1

Cc: Joe Jenkins

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

Notes: Joe Jenkins asked me to send these numbers to you for the costs at Bridgewater.

30LF @ \$18/LF	\$540.00
45LF @ \$24.75/LF	\$1113.75
135LF @ \$44.50/LF	\$6007.50
15" FES 1 EA	\$345.00
24" FES 1 EA	\$430.00
36" FES 1 EA	\$875.00
Rip Rap Pad 30 TON @ \$45/TON	\$1350.00
Bioretention Pond	\$27890.00
Dry Detention Pond	\$23500.00
TOTAL	\$62,051.25

CONFIDENTIAL

EXHIBIT D

Laura M Riddick
Register of Deeds
Wake County, NC



Book : 009586 Page : 00964 - 01051

**Yellow probate sheet is a vital part of your recorded document.
Please retain with original document and submit for rerecording.**



**Wake County Register of Deeds
Laura M. Riddick
Register of Deeds**

North Carolina - Wake County

The foregoing certificate S of Monica Edwards

Notary(ies) Public is (are) certified to be correct. This instrument
and this certificate are duly registered at the date and time and in the book and
page shown on the first page hereof.

Laura M. Riddick, Register of Deeds

By: P. Anne Redd
Assistant/Deputy Register of Deeds

This Customer Group
_____ # of Time Stamps Needed

This Document
_____ New Time Stamp
88 # of Pages