

Agenda

PLANNING COMMISSION REGULAR DOCKET TUESDAY, February 10, 2015 – 5:30 P.M. CITY COUNCIL CHAMBERS

I. PLANNING COMMISSION GATHERING -- 4:30 P.M. (Held in the NDS Conference Room)
Commissioners gather to communicate with staff. (4:30-5:30 P.M.)

II. REGULAR MEETING -- 5:30 P.M.

A. COMMISSIONERS' REPORTS

B. UNIVERSITY REPORT

C. CHAIR'S REPORT

a. Planning Awards

D. DEPARTMENT OF NDS

E. MATTERS TO BE PRESENTED BY THE PUBLIC NOT ON THE FORMAL AGENDA

F. CONSENT AGENDA

(Items removed from the consent agenda will be considered at the end of the regular agenda)

1. Minutes - January 13, 2015 – Pre meeting & Regular meeting
2. Minutes - December 9, 2014 – Regular meeting
3. Zoning Text Initiation –Flood Plain

III. JOINT PUBLIC HEARINGS (Beginning at 6:00 P.M.)

G. JOINT PUBLIC HEARINGS

1. ZT-15-01-01 – Flood Plain Ordinance Amendment - This is a proposal for an amendment to Chapter 34 of the City Code (Zoning), Article II (Overlay Districts), Division 1(Flood Hazard Protection Overlay District), Sections 34-240 through 34-258, by repealing the existing regulations in their entirety, and re-enacting floodplain regulations consistent with current requirements of the Federal Emergency Management Agency (FEMA) and FEMA's model floodplain ordinance. The updated regulations, if adopted, would apply to all properties within flood hazard areas identified within FEMA's Flood Insurance Rate Maps (FIRMs) for the geographic area within the City of Charlottesville. A copy of the proposed updated floodplain regulations is available for public inspection in the Office of Neighborhood Development Services, located at 610 East Market Street, Charlottesville, VA 22902. Any questions regarding the content of the proposed ordinance should contact Tony Edwards at 434-970-3182.

IV. REGULAR MEETING – (continued)

H. Critical Slope Waiver Request – Kroger at Seminole Square

I. Discussion

1. Lochlyn Hill PUD

J. FUTURE MEETING SCHEDULE

Date and Time	Type	Items
Tuesday February 24, 2015 – 5PM	Work session	Transient Lodging Facilities, Application Procedure Proposals, Unified Development Ordinance
Tuesday, March 10, 2015 – 4:30 PM	Pre- Meeting	

Tuesday, March 10, 2015 – 5:30 PM	Regular Meeting	Special Use Permit – 201 Garrett St Spot Blight – 1810 Yorktown Drive Rezoning – William Taylor Plaza PUD Amendment, Longwood PUD January 27 Work session minutes
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Anticipated Items on Future Agendas

- Zoning Text Amendment - PUD ordinance updates
- Locklyn Hill PUD
- Carlton Avenue – Lot A – Site Plan
- ZTA – Unified Development Ordinance

Persons with Disabilities may request reasonable accommodations by contacting ada@charlottesville.org or (434)970-3182

PLEASE NOTE: THIS AGENDA IS SUBJECT TO CHANGE PRIOR TO THE MEETING.

PLEASE NOTE: We are including suggested time frames on Agenda items. These times are subject to change at any time during the meeting.

MINUTES
PLANNING COMMISSION REGULAR MEETING
Tuesday, January 13, 2015

I. PLANNING COMMISSION PRE-MEETING (Beginning at 4:30 p.m.)

Location: NDS Conference Room, Charlottesville City Hall, 2nd Floor

Members Present: Chair Rosensweig; Commissioners Taneia Dowell, Lisa Green, Kurt Keesecker, Genevieve Keller, Jody Lahendro, and John Santoski; UVA representative Bill Palmer

Call to Order: the meeting was called to order by Chair Rosensweig at 5:10 p.m.

The Commission noted that they would pull the December 9th meeting minutes from the consent agenda for review of the wording of motions.

Ms. Green asked if a timeframe for the SUP for the Farmer's Market could be placed as a condition. It was noted that a time limit could be a consideration since the application asks for a temporary use for this site.

Commissioners asked for clarification on the spot blight process including when there would be BAR review and that information was provided.

Ms. Creasy provided an overview of the preliminary discussion process. Mr. Rosensweig asked how the current construction at 201 Garrett fits into the SUP request. Staff noted that the work being done right now is by right.

Ms. Dowell asked for background information on the William Taylor Plaza parking layout and that information was provided.

The meeting ended at 5:25.

Votes: No Vote or other action was taken by the Commission.

Adjournment: At 5:25 p.m. the Chair adjourned the meeting in order to reconvene in City Council Chambers at 5:30 to continue with the Commission's regular monthly agenda.

II. ADMINISTRATIVE AGENDA (Beginning at 5:30 p.m.)

Location: City Council Chambers, Charlottesville City Hall, 2nd Floor

Members Present: Chair Rosensweig; Commissioners Taneia Dowell, Lisa Green, Kurt Keesecker, Genevieve Keller, Jody Lahendro, and John Santoski; UVA representative Bill Palmer

Call to Order: the meeting was called to order by Chair Rosensweig at 5:30 p.m.

A. Commissioner's Reports:

Commissioner Lahendro— reported on December 10th, the Tree Commission met and approved the nomination of the first two trees under the new tree conservation ordinance. The two nominations go to City Council for approval. The design for signage for a small tree arboretum on Jefferson Park Avenue was approved. The Commission then reviewed the landscape plan for the Virginia Department of Transportation proposed Best Buy ramp design and concluded with a request for additional tree canopy in that design.

The Parks and Recreation Board met December 17th. Mr. Daly, Director of Parks and Recreation opened the meeting by announcing the City had received three awards at the Virginia Recreation and Park Society Conference held in December for 2013 projects. The City received the Best Environmental Sustainability Effort for Extreme Restoration, the Best New Program in Art Adventures at Open House, and the Best Renovation or Addition in the Bricks and Mortar category for Carver Recreation. The McIntire Park Master Plan was discussed. It was presented at the December City Council meeting where there were some concerns expressed about the large ponds. There will be a public open house in January for public comment on the McIntire Plan and design options. Revisions based on City Council and public comments will be brought back to City Council in February. The Skateboard Park design was approved at the December City Council meeting. An open house for the Skate Park design will be held on January 22nd for public comment, and then the plan will return back to the City Council in February for final approval. During the public comment period, a citizens group made a pitch for a City and County indoor tennis facility to be located at the Darden Towe Park.

Commissioner Keller— said the TJDPC is in the process of strategic planning and will be holding a retreat soon. The PLACE Task Force has re-scheduled its meeting for January 27th.

Commissioner Dowell— reported the Community Block Development Grant meeting was cancelled in December, and the next meeting is February 2, 2015.

Commissioner Keesecker— reported the BAR met in December and discussed three items of interest to the Planning Commission. 1) changes to the massing and scale of the project the Commission reviewed on 1000 West Main were brought forward. The revised project will be less tall, less intense, have fewer and smaller units, as well as some changes to street level. The BAR had concerns about the expression of some of the architectural ideas particularly on West Main as a result of those changes. It was an informal discussion but it will come back. 2) The Market Plaza project on Water Street for the City Market. There was discussion on stepbacks and setbacks. The Planning Commission gave the BAR a range to work with, and it turned out that the BAR seemed to be comfortable with what the applicant put forward. The BAR did add another opening on 2nd street which was a concern of the Planning Commission for some time -- animating the façade on 2nd Street with a mezzanine that would be accessible off 2nd Street so you could look into the Market area as well as look up to some activity that was half a level up. There was a lot of talk about the stairs on 1st Street and the applicant will come back with more detail. The BAR also talked about the trees on the plaza in planters. Some of the landscape architects on the BAR had concerns about their viability and whether they would ever grow to any maturity. The discussion related to trying to find another vertical element in the landscape that could delineate 1st Street in a memorialized way that had a

better way of survival. Ultimately, the BAR will see those plans again. 3) The Atlantic on West Main is a mixed use project that is located closely to the Jefferson School. The discussion had a lot to do with the architectural treatment on Commerce Street, trying to understand what Commerce Street was historically and how the design could be improved even by including a little pocket park part of that Commerce Street façade.

Commissioner Santoski— reported the MPO Tech Committee did not have a December meeting but will be meeting on January 20th.

Commissioner Green - reported the Citizen Transportation Advisory Committee (CTAC) met on January 7, 2015. The TJPDC staff has prepared a document named Lessons Learned from the last Long Range Transportation Plan and in it included the letter the Planning Commission sent asking for more input in the process. It is a draft document right now but will eventually be an internal document to use. There was a lot of discussion about the role of CTAC members and bringing information back and forth between the commissions and committees on which the Committee members participate. There was discussion about the long range transportation plan--having a plan A and plan B. This led into the discussion on the reallocation of the funds of the Long Range Transportation Plan that were originally designated for the Western Bypass but could be reallocated to the projects that are in the Long Range Transportation Plan or a new project. This was discussed at the MPO meeting and the consensus was to use those funds for existing projects that are already on the Long Range Transportation Plan. The MPO Policy Board will meet on the 28th of January. The CTAC is looking to update its bylaws and at the work program for 2016 which began on July 1st. Part of the work program is putting together a Transportation Academy to help people understand how transportation projects are planned. The next meeting will be March 5th at 7:00 pm at the Water Street Center.

- B. University Report—Bill Palmer - Palmer reported classes are in session this week for the Spring semester, and the School of Architecture is having its 4th Annual vortex. This is a multi-disciplinary studio that most of the students in the school participate in. They are looking at the Ivy road corridor going from the bypass to Emmet Street intersection and they will focus on 3 sites to form design solutions with a residential focus for University housing. The designs will be presented on Sunday at Carver Recreation Center.

Ms. Keller also reported the project started with the geography of Ivy road between Emmet Street and the Boars Head Inn and looking at this as a large landscape area in which the University has a considerable ownership and interest both directly and through the foundation. After the events of last fall the project was re-interpreted to add a residential and public space component as a prompt for design. The students and the faculty will be looking at three specific intersections: the Emmet Street intersection with Ivy Road, the Alderman-Massie intersection, and the area between the former Children's Rehabilitation Center and the 29- 250 bypass interchange. Those will have some specific design recommendations. There are also 4 research type teams: one is looking at residential life and public space, transportation, cultural landscapes and how to communicate with design ideas from the school to the public. Each one of the teams will be looking at Ivy Road as a complete street. While some of these solutions would be theoretical, it is an opportunity to explore ideas without the

constraints of reality but using the guidance that is available from the city, county and the University. Products will be on exhibition at City Space through the month of February with the opening on February 6th. She said it is an honor to have Sylvia Carr, a notable landscape architect from the Netherlands present for the project. She has already given two public lectures and is an expert on many topics the project is dealing with including highway design. She is very sensitive to our community and the University.

- C. Chair's Report—Chair Rosensweig- reported that the Housing Advisory Committee met in sub-committees in December and are recommending incentives for producing affordable units and also reviewing the code from the perspective of the goals in the housing section of the Comprehensive Plan. The next HAC meeting will be on Wednesday, January 21st at 12:00 in the NDS conference room. The next Planning Commission work session will be in two weeks from today to discuss two issues--the draft unified development code ordinance and a report from the Small Area Plan committee on priorities. He said the River Committee met today and Ms. Creasy will make a report on that. He commended the NDS staff for organizing and the public for attending the interesting and informative event at the Jefferson School on December 13th on the Streets That Work and the Code Audit efforts. He said there were many great comments from the public. Mr. Rosensweig informed everyone that the Director of Neighborhood Development Services, Jim Tolbert, after many years of service to the community is leaving to take a job as Assistant City Manager in a town in Georgia. He expressed his personal gratitude to Mr. Tolbert for all the work he has done over the years, things big and small, noticed and unnoticed. He has been at the helm during a period of remarkable change for Charlottesville but what people who only see him in public don't realize is what a really good person he is and what a huge heart he has in particular for people who have historically fewer opportunities in the community. The City is going to miss him but we very much wish him the best of luck.
- D. NDS Department Report: given by Missy Creasy- She attended the Rivanna River meeting which went well. This is a group set by City Council and the Albemarle Board of Supervisors. The group has been asked to look at three issues: the courts, transportation, and the Rivanna River. These are areas where we need to work together. People were invited from the Economic Development office, both the City and County Visitor's Bureau to talk about opportunities that they saw from their prospective and what they are hearing from folks in the community about things that could happened with the river. She said this still in the and will invite a lot of other people to speak with us about and speak with us about their experience with similar types of projects and opportunities to learn a little bit about what has worked in other places and hasn't worked for Charlottesville. She also mentioned the votes for the Planning awards The Planning award celebration will be at the Commission meeting in February. This is an opportunity for the Planning Commission provide to awards to people in the community for good projects or outstanding community efforts. She thanked Heather Poole, the new planner who had done a lot of the logistics for this. She said we are a Department in transition and she will be taking over as interim director of Neighborhood Development Services for a period of time until a successor is chosen. There will be some additional staff working more directly with the Planning Commission for a period of time. The staff will keep The Commission informed of the things they need to be aware of and any questions should be directed to her. She said the staff is really going to miss Jim as well.

E. Public Comment (Items Not Scheduled for a Public Hearing on the Regular Agenda):

1. Travis Pietila, from the Southern Environmental Law Center, speaking on the proposed changes to the William Taylor Plaza PUD, said the commitment to provide 90% of the parking in an underground structure has been replaced with a simple statement that surface parking will be provided and shielded from view. There is no longer any mention of structured parking in the proffer statement. The drawings indicate that the amount of surface parking has jumped considerably. More surface parking usually means more pavement translating into more run off and a number of other environmental harms. It appears that the commitment that all buildings in the PUD are built to LEED standards has been eliminated. This was not only a condition of the initial PUD approval but also the City sale of land for this project. The applicant also seeks to allow construction of roads and parking areas in the open space. This change is not only inconsistent with the number of the City's goals for PUDs but also the language of the PUD ordinance which clearly states that streets and parking areas should not be counted as open space. He urged the Commission to make sure the request does not become a precedent for allowing an applicant to renege on important environmental commitments that helped the project gain approval.
2. Mr. Clayton Lauder, 507 Ridge Street which is adjacent to the William Taylor PUD said this is an historic part of the city. He said the recent proposal completely flies in the face of any historic value that the City has deemed as appropriate to this area. He said his land is adjacent to the bottom area to which the proposed parking area is located. The significant amount of degradation it would do to his land value in addition to the significant runoff and other environmental concerns mentioned by the gentleman from Southern Environmental Law Center raises significant concerns in his mind. He said he is very much in support of sensible development of the area, understanding the commitment the city has made to the original plan of development makes sense. He said that the changes are really are abhorrent to the development in this part of the City.
3. Ms. Jean Maushammer, 200 Garrett Street, speaking about the proposed Special Use Permit for 201 Garrett Street, stated that she is a board member of the Unit Owners Association for the Gleason. They have 44 owners, businesses and residents in the Condominium Association. They are not pleased with the proposal to increase the density of the housing in their area. It is 57 units which are allowed in their area and the developer is proposing 229 units. The applicant is talking about 450 square foot units that would be studio apartment type of use and the Association feels that this does not fit into the neighborhood. The Gleason owners are the only residential owners in that area. Everything around their building is rental apartments or commercial businesses. The Association's principle objection is parking. The Association is also worried about the type of neighborhood it creates with such an intense development. This is an area which is developing and the owners welcome development but they feel the amount of units is too much. The proposal is a nine story building which seems to be out of whack for the rest of the area.
4. Kurt Woerpel – Blue Ridge Road, speaking about the proposed Special Use Permit for 201 Garrett Street, stated that he owns the Downtown Design Center Building which is between 1st

and 2nd Street in Garrett. The Downtown Design Center Building is a warehouse building and parking lot across from Gleason and next to the Glass Building. He said what the applicant is proposing looks very smart to him. He said there are plenty of large condos, the Waterhouse is empty, there are plenty of apartments down Water Street and many of those are not full yet. He said the applicant is proposing something very innovative and it is reasonable. He said the applicant is not proposing to build a massive square structural building, corner to corner using every inch of the geography. He said the applicant has done a great job at this before. He said the applicant has been very intelligent about what he is doing and again, what the applicant is proposing is pioneering. He said the applicant was the first one to cross the railroad tracks. He said the applicant bought a building there and invested in a warehouse which is now the Warehouse District. He supports this request very much.

F. Consent Agenda:

- 1) Minutes, December 9, 2014 Pre-Meeting
- 2) Minutes, December 9, 2014 Regular Meeting
- 3) Minutes, November 18, 2014

Motion: to remove items F1 and F3 from the Consent Agenda and to Approve the Remaining Items on the Consent Agenda

Motion by: Commissioner Keller

Seconded: Commissioner Santoski

VOTE:

“Aye”: Commissioners Dowell, Green, Keesecker, Keller, Lahendro, Rosensweig, Santoski

“Nay”: None

Abstentions: None

Disqualifications: None

III. REGULAR AGENDA

A. JOINT PUBLIC HEARINGS (Beginning at 6:00 p.m.)

1) **SP-14-12-12—SUP Application for Temporary Farmer’s Market**

Applicant: Director of NDS, on behalf of City of Charlottesville

Owner: Charlottesville Parking Center, Inc.

Subject Property: City Tax Map 28 Parcel 62

Presentation: Staff Planner Brian Haluska gave a verbal summary of the Staff Report dated December 19, 2014, on behalf of the Department of Neighborhood Development Services

Presentation by Applicant’s Representative: Planner Haluska’s Staff Report served as the Applicant’s presentation.

Mr. Rosensweig opened the Public Hearing. Having no speakers, he closed the Public Hearing.

Commissioners discussed the 3 year time frame for the parking lot.

Jim Tolbert, Director of NDS advised them instead of stating a 3 year time frame, to use the terms at the end of three market seasons which was agreed and inserted in the motion.

MOTION: To Approve **SP-14-12-12**, subject to the following conditions: (1) the temporary farmer's market shall be easily visible from adjacent vehicular rights-of-way, easily accessible from adjacent sidewalks, and shall be arranged in a manner that facilitates a comfortable flow of pedestrians among the vendor stands in the temporary farmer's market; and (2) the special use permit for this temporary farmer's market shall expire on December 31, 2017, upon a finding that the proposed temporary use is required by the public necessity, convenience, general welfare, or good zoning practice.

Motion by: Commissioner Keller
Seconded: Commissioner Santoski

VOTE:

"Aye": Commissioners Dowell, Green, Keesecker, Keller, Lahendro, Rosensweig, Santoski

"Nay": None

Abstentions: None

Disqualifications: None

2) Review of Preliminary Determination of Spot Blight (610 Ridge Street)

Presentation: Jim Tolbert, Director of Neighborhood Development Services made a verbal presentation to the Commission, summarizing the information set forth within his written report to the Commission ("Repair or Disposition of Blighted Property (City Code 5-194)) dated December 15, 2014).

Commissioners discussed the condition of the property and the outstanding building code violations.

Building Code Official, Patricia Carrington reported that the violations are that exterior wood surfaces are peeling and chipped paint. Window surfaces exposed are rotting and deteriorating, stucco is cracked, loose and falling away from the structure, the down spout is in bad shape and detached from the house.

RESOLUTION: Commissioner Santoski read into the record a written Resolution making the findings and determinations required by City Code 5-195, and made a motion for approval of the resolution. A copy of the Resolution is attached to these minutes and incorporated by reference.

Motion by: Commissioner Santoski
Seconded: Commissioner Lahendro

VOTE:

"Aye": Commissioners Dowell, Keesecker, Keller, Lahendro, Rosensweig, Santoski

"Nay": Commissioner Green

Abstentions: None

Disqualifications: None

B. PRELIMINARY DISCUSSION—PROPOSED DEVELOPMENT(S)

- 1) **Site: 201 Garrett Street.** Proposal for a Special Use Permit Authorizing Additional Residential Density

Presentation: by Russell Nixon and Oliver Kuttner,

The maximum by-right residential density in the Downtown Extended corridor is 43 dwelling units per acre, with 240 units per acre permitted by special use permit. The applicant is requesting density of 168 dwelling units an acre.

The Commissioners discussed the proposed development questioning the size of the units and the height of the buildings.

Commissioner Green stated this approach is extremely refreshing.

Commissioner Rosensweig questioned where else do we want density but right where we have businesses and jobs and transit.

Commissioner Keller said it would be good to make sure there's really nothing like this on the market and asked how many market-rate apartments are there in this section of the city?

Mr. Kuttner said there would be three buildings in all as part of the complex and they would be built in phases. He said he would build the required parking spaces, but he will design the garage to be flexible.

No Vote or other action was taken by the Commission.

- 2) **Project: William Taylor Plaza PUD (Ridge/ Cherry). Proposal to Amend PUD** to allow for the establishment of a Hotel

Disclosure: Chair Rosensweig made a statement for the record, disclosing that he is employed as the executive director of a non-profit agency that has contractual relationships with Southern Development, but that he does not have a personal interest in this transaction and can participate in the Commission's discussions and consideration of this project.

Presentation: by Charlie Armstrong, President of Southern Development

Commissioner Keller said she can see this as extending the Fifth Street and Interstate 64 interchange into the heart of our city and she really doesn't like that.

Commissioner John Santoski said he didn't care about the expense and that the applicant shouldn't have agreed to that condition back in 2009 if he had no plans to build it. He said it gives him extreme heartburn that they want to take away the open space and substitute open-air parking and that they want to take away the LEED certification, which was a big selling point at the time.

Commissioner Keller, who was on the commission in 2009, said she was surprised to see the requested changes. She further stated that she didn't think any of them thought of a hotel as commercial but were thinking restaurants, cafes, offices and those kinds more neighborhood commercial uses.

Ms. Creasy, assistant director of the Neighborhood Development Services department, commented that zoning ordinance would classify a hotel use as commercial. However, she also said the commission should look at the proposal as if it is a brand-new application.

Ms. Creasy stated they have an approved Planned Unit Development and that it is the zoning for the site. She said they are asking to revise the rezoning and this brings the opportunity for all things to be discussed because it will be a new zoning.

Commissioner Lahendro said he noticed in the 2009 plans are three articulated blocks of buildings with porosity in between them to allow pedestrians to get from Cherry to the interior lot.

Other commissioners also said they could not support the rezoning.

Commissioner Green said this project in concept is to bring life and vitality to the neighborhood of Cherry Avenue and she's not convinced that a hotel does that.

No Vote or other action was taken by the Commission.

ATTACHMENT TO MINUTES:

1. Resolution Regarding Determination of Blight at 610 Ridge Street

CERTIFICATION OF MINUTES

I certify that the foregoing Minutes were approved by the Charlottesville Planning Commission on _____, 2015.

Signature: _____

**RESOLUTION OF THE CHARLOTTESVILLE PLANNING COMMISSION
REPORTING FINDINGS AS TO PROPERTY BLIGHT AT 610 RIDGE STREET**

BE IT RESOLVED by the Charlottesville Planning Commission, following a public hearing conducted on January 13, 2015 to consider the condition of property located at 610 Ridge Street ("Property") which is the subject of a preliminary determination of blight pursuant to City Code Sec. 5-193, THAT:

- (1) The property is a blighted property, as defined within City Code section 5-192
- (2) The owner has failed to cure the blight or to present a reasonable plan to do so;
- (3) The property is not occupied for personal residential purposes,
- (4) The property has not been condemned for human habitation for more than one (1) year;
- (5) The director's plan for the repair or other disposition of the property is reasonable and in accordance with the city's adopted comprehensive plan, zoning ordinances, and other applicable land use regulations; and
- (6) The property is located within an area listed on the National Register of Historic Places. This commission has referred the director's plan to the board of architectural review for comment regarding the director's proposed plan for repair or other disposition of the property; AND

BE IT FURTHER RESOLVED THAT this Planning Commission hereby directs staff to transmit these findings to City Council after receipt of the BAR's written comments on the Director's plan, and the Council transmittal shall include a recommendation that City Council should affirm these findings and take all necessary action to abate the blight on this Property.

Approved: _____, 2015

**MINUTES
PLANNING COMMISSION MEETING
December 9, 2014 - 5:30 P.M.
CITY COUNCIL CHAMBERS**

Planning Commissioners Present

Dan Rosensweig – Chairperson
Tanea Dowell
Lisa Green
Kurt Keesecker
Genevieve Keller
Jody Lahendro
John Santoski

Staff Present

Ms. Missy Creasy, Planning Manager
Ms. Lisa Robertson, Chief Deputy City Attorney
Mary Joy Scala, Preservation and Design Planner
Brian Haluska, Senior Planner
Matt Aflele, City Planner

The meeting was called to order by Chairman, Dan Rosensweig at 5:30.

COMMISSIONERS REPORT

Mr. Keesecker – Nothing to report

Mr. Santoski – He attended the final Free Bridge Ecological project meeting. The general consensus was it was an interesting exercise and it may not have been the best location to do this ecological project. There were some recommendations for what might happen with Free Bridge. He also attended the MPO Technical Committee meeting and there is unallocated funding for the long range transportation plan and one of the considerations is to use some of the funds for a Free Bridge related project.

Mr. Lahendro – He attended the Parks and Recreation Commission on 11/19. The discussion involved McIntire Park schematic designs with the visitor's center, the potential botanical garden and the design for the skate park. Two designs were approved for further review by City Council. He said the process for CIP funding was discussed and described. Mr. Rosensweig asked about the northern portion of McIntire Park including alternate smaller active use area and if these were included in the master plan? Mr. Lahendro said there are ponds, walkways and trails and visitors center are being proposed.

Ms. Keller – reported that the PLACE Task Force will be meeting at noon in the NDS conference room on December 11th.

Ms. Green – nothing to report

UNIVERSITY OF VIRGINIA REPORT

Mr. Palmer – stated that the bike share pilot project is moving forward with about 90 bikes and they hope to have the full project ready by the next semester.

A. CHAIR'S REPORT – Mr. Rosensweig said the Housing Advisory Committee met on November 19th and talked about two issues of interest to the Planning Commission. First was how best to participate in the Code Audit specifically with regard to affordable housing, and the goals and vision within the housing section of the updated Comprehensive Plan. Second, was the ongoing work of a subcommittee to examine best practices and incentives for creating more affordable and mixed income housing. They approved a recommendation to Council regarding the scope of a comprehensive housing study. The River Committee met and discussed some next steps guided by Dan

Mahon, Albemarle County Parks and Recreation. This included expanding the boundaries of the proposed planning area to incorporate everything north up to the Native American burial grounds across from the South Fork Soccer Park, and to the south down to the site of Jack Jouett's crossing at the Rivanna. Everyone thought it was a great suggestion to incorporate all the historic sites along the way. The committee discussed scheduling a meeting to inform citizens what is going on and to get feedback about the features, factors, and things we hold dear collectively in and adjacent to the Rivanna River. This meeting should be scheduled with the opening of the Lewis and Clark facility at Darden Towe Park. At the next meeting of this committee, plans are to include members of the tourist industry, economic development from the City and the County, and members of the committee asked TJPDC staff to bring forward case studies from other cities, towns, and municipalities who have done a similar type of project. He said Council ask the chairmans of various bodies participating in the Code Audit and Streets That Work initiative to discuss the process moving forward. Four Councilors were in the room joining the chairs of the BAR, Planning Commission, Tree Commission, PLACE Design Task Force to discuss and he felt like it was a very productive meeting. The Committee received an update of the extensive neighborhood out-reach program conducted by the NDS staff and also discussed some higher altitude guiding principles for both the Code Audit and the Streets that Work initiatives. As the process continues the Committee will get a summary of the public out-reach including the up-coming community day this Saturday, December 13th at the Jefferson School.

B.DEPARTMENT OF NDS - Ms. Creasy reported that the Saturday event will be held at Carver Recreation Center in the multipurpose room from 8 am – 11:30 am. The meeting will start with a general discussion and presentation and then move into group work, and some report out. We will have a facilitated meeting and hope we will have good attendance. Should anyone need additional information give us a call; and we do have information online at Charlottesville.org/CompleteStreets. She said she received Real Estate forms from everybody. Ms. Creasy said it's time to think about the Planning Award nominations so start thinking about who you would like to nominate for those awards. The January work session will be on the 27th and the first item on the agenda is the Unified Development Code Ordinance for discussion; and a place holder for small area plans will be the second part of that discussion.

Matters By the Public

Bill Emory – 1604 E. Market Street in the Woolen Mills, Charlottesville's waterfront, a historic garden neighborhood located at the foot of a world heritage site, cradled by the Rivanna River. He stated that he is the secretary of the Woolen Mills Neighborhood Association and has been authorized by the neighborhood association to welcome Ms. Dowell and Mr. Lahendro to the Planning Commission and invite their active participation in the long running conversation regarding land use in the east end of the City. Staff is working on setting up a January work session to prioritize small area plans. The neighborhood is on pins and needles regarding this discussion. He stated that in 1988 Planning Commissioner Sue Lewis advised residents of the Woolen Mills to become involved in the discussion of development in their area "before something happens". They took Ms. Lewis's advice to heart. They got in the queue. The queue is updated every few years, most recently, with the 2013 revision of the Comprehensive Plan. Before that Woolen Mills neighborhood concerns were voiced in the 2007 and 2001 Comp Plans.

He asked how are Small Area Plans and Land Use issues prioritized and what part does community engagement play. He noted that at the small area plan subcommittee's meeting in April and June of this year, the Woolen Mills and the Rivanna Corridor were mentioned dozens of times. These mentions arose from the corridor visions put forward in the Torti-Gallas Study early in this millennium. The mentions sprung from the incompatibility inherent in adjacent industrial and residential zoning. The mentions arose from the recreational potential of reconnecting Charlottesville with its waterfront, from the possibility seen by the Charlottesville and Albemarle County Planning Commissions of working cooperatively within the Rivanna River Corridor. The mentions arose from a desire to address a gate way to our City, High Street.

He said that as a neighborhood they ask that the Commission consider Placekeeping. Presently, the underlying zoning in their neighborhood and in the river corridor doesn't support city's nascent vision for the area. They ask that the Commission deal with underlying zoning in the Woolen Mills neighborhood and the Rivanna Corridor.

Planning, and that planning is preferable to triage. Get law on the ground in advance of development proposals so that we might realize the gifts of this unique area to the larger community.

Emily Walker – 1515A Antoinette Avenue in Johnson Village, speaking on behalf of other families who live on Antoinette Avenue at the intersection of Shamrock. She said they have reviewed the site plans for Johnson Village Phase III and have two concerns, 1) they are concerned about construction and equipment in the cul de sac area at the end of Shamrock road and 2) Michael West (represents the properties) is concerned that the plan for a barrier wall at the end of Shamrock would not serve any purpose because of elevation and suggested leaving a larger barrier of the natural area instead which would be an effective natural barrier as opposed to the wall. She said the elevation would prevent it from being effective and there are a couple of other points he had made which she didn't have at this time. She said their neighborhood is filled with children playing in the street. She said that the neighborhood is full of renters but they have a strong community there and feel that the nature of our neighborhood will be irreversibly changed by the loss of that swath of trees. The forest area and the development they understand are going to change but would be right on their backyards. She asked that the Commission leave a section of trees along the perimeter at the top of Antoinette and the end of Shamrock.

Ann Marie Park, 825 Village Road, a board member of the Home Owner's Association for Cherry Hill and Village Place Association. She has worked with the developer over the past few years and it is fair to say that there are numerous changes between the previous site plan and the current plan under review. The current plan is more desirable for the neighbors on Village Place. The changes include moving the clubhouse away from the pool. The long side of the building is not facing the front side of the homes so there is less visual space. She asked that if something is going to be built, to please use the current plan which is more desirable. Putting a parking lot between the apartment and the homes preserves more of the backyard space.

Heather Walker, 603 Shamrock Road, President of the Johnson Village Association, noted the developers of Village Place and Cherry Hill are the same developers of Phase III and she wanted to remind the Commission of the barrier that was supposed to be left between Cherry Hill and Johnson playground but was not left. It was completely clear cut and she wants to make sure there is a wide barrier of trees to protect the homes that are on Antoinette.

F. CONSENT AGENDA

(Items removed from the consent agenda will be considered at the end of the regular agenda)

1. Minutes - November 11, 2014 – Pre meeting
2. Minutes - November 11, 2014 – Regular meeting
3. Minutes - November 18, 2014 – Work Session will be brought back for approval next month.
4. Site Plan – Rialto Beach PUD

Ms. Keller moved to approve the Consent Agenda with the exclusion as noted, seconded by Mr. Santoski, motion passes 7-0.

III. JOINT PUBLIC HEARINGS (Beginning at 6:00 P.M.)

1. **Charlottesville Capital Improvement Program FY 2016-2020:** Consideration of the proposed 5-year Capital Improvement Program totaling \$86,852,483 in the areas of Education, Economic Development, Public Safety & Justice, Facilities Management, Transportation & Access, Parks & Recreation, technology Infrastructure, Storm water Initiatives and General Government Infrastructure. A copy of the proposed CIP is available for review at <http://www.charlottesville.org/Index.aspx?page=3637>.

Report prepared by Ryan Davidson, Office of Budget and Performance Management.

The Charlottesville Planning Commission is asked to endorse an \$18.2 million capital improvement budget for the next fiscal year, but also asked the City Council to consider adding more money for new street trees and to encourage the fire department to transition to smaller vehicles. The five-year capital plan totals \$87 million through 2020, though councilors will only adopt the first year of funding when they adopt the total budget in early April. The draft plan for next year allocates \$25,000 for "urban tree preservation and planting" but the City's Tree Commission had asked for more.

Ryan Davidson, City budget analyst explained why a capital improvement oversight committee did not recommend granting their request. He said it is not a reduction but level funding from the previous year, we feel that's adequate for what we can keep alive. He also said paying to plant more trees also would require the city to hire someone to help make sure the new trees survive, and the committee has to take the impact to the city's operating budget into account.

Jim Tolbert, Director of Neighborhood Development Services stated this is the first year we've considered the impact of ongoing operating costs that come with additions to the capital plan. He also pointed out the \$11 million dollars allocated in the capital plan for a new streetscape for West Main includes money for street trees to be planted as well.

Mr. Tolbert said Council will hold a work session Dec. 18 to review the West Main plan created by the Alexandria-based consultant Rhodeside & Harwell. The capital plan also anticipates spending about \$6.5 million over the period to contribute to a shared district court with Albemarle County.

Mr. Davidson said the money in the capital plan is there as a placeholder though no official decision has been made by either the Council or the Albemarle Board of Supervisors. He stated the funding there is the city's portion of the cost of co-locating the Albemarle and Charlottesville General District courts at the Levy Opera House to keep all the courts in one place.

Ms. Keller stated she wants to be supportive because it is built on generations of investment in Court Square. Nearly \$4 million would go to public safety including an upgrade to the 800-MHz radio system used by emergency services. The five-year capital plan would allocate \$2 million toward replacement fire trucks. At its meeting in November, the Planning Commission had asked for more information on the types of trucks that would be purchased. The Planning Commissioners requested smaller vehicles so city streets could be made narrower and thus more safe and welcoming for pedestrians.

Mr. Rosensweig said he wants the city to have a broader discussion on the topic. Fire Department staff responded in a memo to the Commission. Fire Department officials stated in order to go to a smaller apparatus we would have to add additional resources, including specialized apparatus's and hiring more personnel in order to get an effective firefighting force on the scene of a fire or other emergency, and the city budget trends do not look favorable for hiring more personnel.

Mr. Rosensweig said this conversation has to happen between Council and the Fire Department.

Mr. Davidson said there is about \$58 million dollars in unfunded requests over the five-year period.

Ms. Green said she served on the capital committee this year and it was the most eye-opening thing she's ever done since being on the Planning Commission. She said there's just not enough money to do it all. There is also \$1 million dollars in the capital plan between now and 2020 to create new small area plans such as the West Main study. The Council will prioritize planning areas at a work session in January.

MOTION: To approve the CIP as presented by staff with the additions enumerated or instructions enumerated by Chair Rosensweig and I further include in the motion a directive to the Director of NDS that the Planning Commission's recommendations be sent to Council accordance with the Code of Virginia.

Motion by: Commissioner Keller

Seconded: Commissioner Green

VOTE:

"Aye": Commissioners Dowell, Keesecker, Keller, Lahendro, Rosensweig, Santoski

"Nay": Commissioner Green

Abstentions: None

Disqualifications: None

G. JOINT PUBLIC HEARINGS

2. **SP-14-10-09 – 722 Preston Ave** - An application pursuant to City Code sec. 34-796 for a special use permit for a mixed-use development to allow for retail space up to 10,000 square feet (gross floor area) on property located within the Central City Mixed Use Corridor Zoning District, located at 722 Preston Avenue, identified on City Tax Map 31 as Parcel 38. The subject property is located within the Central City (CC) Mixed Use Corridor zoning district and is approximately 1.89 acres or 82,328 square feet. The Land Use Plan generally calls for Mixed Use. **Report prepared by Brian Haluska, Senior Planner.**

The Applicant has submitted an application seeking approval of a Special Use Permit in an existing building at 722 Preston Avenue. The Property has additional street frontage on Albemarle Street. The proposed development plan shows locating several businesses in the structure, one of which would be a retail business of greater than 4,000 square feet of gross floor area. The building would have parking for 101 cars located in a surface parking lot adjacent to the building. The Central City Corridor zoning permits retail businesses of up to 4,000 square feet by right, and retail businesses in excess of 4,000 square feet by special use permit. The applicant has requested a special use permit for retail uses up to 10,000 square feet of gross floor area. Land Use and Comprehensive Plan

Staff finds that the proposal is supported by the City's Comprehensive Plan, that the use requested is appropriate for this location, and that the impacts of the development can be addressed through conditions placed on the special use permit.

Staff recommends approval with the following conditions:

1. The maximum gross floor area that a single retail establishment may occupy is 10,000 square feet.
2. All deliveries to the site should be directed to enter and exit via the Preston Avenue entrance.

Ms. Green asked if we did a Special Use Permit for bio-tech.

Mr. Haluska said there was an SUP for bio-tech attached to a previous plan that was abandoned.

Pete Goergen, 114 Hessian Hills Ridge, said he has been working closely with Mary Joy and Brian Haluska. He said the first business should be opening in the spring. He said the reason he is here is to get 10,000 square feet and a SUP for retailers. He said they have amended their site plan to close the parking lot to Albemarle Street and all of the deliveries will be coming from Preston. Shawn Tevendale and Blue Ridge Cycling is one of the tenants who we are excited to be in the building

Mr. Lahendro asked is there any kind of deliveries and vehicular traffic off of the side street.

Mr. Goergen said yes, we are completely closing off to the 10th and Page neighborhood for any vehicular traffic from the project to the site.

Ms. Green asked if this is a multiple retail establishment.

Ms. Smith asked if there will be pedestrian excess to Albemarle Street.

Mr. Goergen said yes, you will be able to walk the stairs into a parking lot up to Albemarle Street.

Opening the public hearing

Shawn Tevendale, is the owner of Blue Ridge Cycling located currently on Millmont Street. He is moving into the Coke Building. He said one thing they like about the building is the appeal of the location and the size of the building is the focus of being a small business oriented. He said they need the additional floor footage to work from and so part of what they are looking at with this is the ability to go in with the 5200 square feet but also potentially flex up with their space if needed in the future and this is reflected in the 10,000 square feet request to the Planning Commission. They are very focused on the community access to the cycling aspect of this. They are excited to be on bikeable routes and bike share lanes. They are also in the process of implementing a bike share program down on the University of Virginia grounds. They are hopefully looking at expanding that so that the bike share program can come over to where we are currently located. They currently employ 8 employees and looking to increase up to 12 in the spring time. They are excited to be moving to Preston, we just need the permit in order to do the square footage.

Marie McDaniel, 803 Anderson Street, stated that she is in favor of this SUP.

Public Hearing closed

Ms. Smith asked the applicant if there would be any outdoor music.

Mr. Goergen said there could potentially be some outdoor music, but he didn't know how much.

Mr. Santoski asked if there were any restrictions on decibel, loudness, and how long music can be played especially if there will be an outdoor beer garden there. If so there could be music in the spring, summer and fall and he said he is not quite sure what the restrictions are.

Mr. Haluska said whatever is covered under the city noise ordinance.

Ms. Green said this is the best use permit for the land but not the applicant and she will not be swayed by the specific business.

Mr. Keesecker motioned to amend the SUP request to include pedestrian and bike excess off of Albemarle into the site seconded by Mr. Lahendro, the amendment passes unanimously.

Ms. Keller motioned to further amend the SUP to increase square footage but limited it to be contained within the existing historic building because it is an individual protected property in the City of Charlottesville, seconded by Mr. Lahendro, the 2nd amendment passes unanimously.

Mr. Lahendro moved to recommend approval of a special use permit as requested in SP-14-10-09, subject to 4 conditions, because "I find approval of this request is required for the public necessity, convenience, general welfare or good zoning practice. My motion includes a recommendation for the conditions referenced in the staff report dated November 24, 2014, subject to the following revisions: maximum gross floor area that a single retail establishment may occupy is 10,000 square feet, all deliveries to the site should be directed to enter and exit via the Preston Avenue entrance, remove vehicular access to Albemarle Street but keep, a pedestrian and bike excess off of Albemarle street and the use of the SUP be restricted to the existing building" The motion was seconded by Ms. Green, and the motion passed 7-0.

3. SP-14-10-10 – 1106 West Main Street: An application for a special use permit pursuant to City Code sec. 34-637(2), to allow development of a hotel, at a height of up to 101 feet on the property identified on City Real Property Tax Map 10 as Parcels 64 and 65. The subject parcels, together, consist of approximately 0.458 acres of land having street frontage on West Main Street and 11th Street SW. The subject parcels are located within the West Main South (WMS) Corridor, subject to the West Main Architectural Design Control Overlay District referenced in City Code sec. 34-272, and Parking Modified Overlay Zone referenced in City Code sec. 34-971(e)(3). The Land Use Plan generally calls for Mixed Use. In the WMS zoning district, hotels are uses allowed by right; however, the maximum height allowed by right (without a special use permit) is 70 feet.

Report prepared by Brian Haluska, Senior Planner.

The Applicant, Austin Flajser, has submitted an application seeking approval of a Special Use Permit in conjunction with a site plan for a hotel located at 1106 West Main Street. The Property has additional street frontage on 11th Street SW. The proposed development plan shows a 101 foot tall building with 150 hotel rooms and a restaurant. The building would have parking for 90 cars located in structured parking in the building. The West Main South Corridor zoning permits a maximum height of 70 feet by right, and 101 feet by special use permit.

Staff finds that the proposal is supported by the City's Comprehensive Plan, that the increase in height is reasonable at this location and that the impacts of the development can be addressed through conditions placed on the special use permit.

Staff recommends the application be approved with the following conditions:

1. The minimum required setback on 11th Street SW shall be 6 feet.
2. The minimum required stepback on 11th Street SW shall be 0 feet.

3. The frontage on West Main Street will reflect the City's approved West Main Streetscape plan.
4. The design, height, and other characteristics of the Development shall remain essentially the same, in all material aspects, as described within the application materials dated October 21, 2014, submitted to the City for and in connection with SP-14-10-10 ("Application"). Except as the design details of the Development may subsequently be modified to comply with requirements of a certificate of appropriateness issued by the City's BAR, or by any other provision(s) of these SUP Conditions, any substantial change of the Development that is inconsistent with the Application shall require a modification of this SUP.
5. Prior to commencement of any land disturbing activity on the Property, the developer shall hold a meeting with notice to all adjoining property owners and representatives of the University of Virginia, to review the proposed location of construction worker parking, plan for temporary pedestrian and vehicular circulation, and hours and overall schedule for construction activities. The city's director of neighborhood development services shall be provided with evidence that such meeting was held, and of the required notices, prior to the issuance of any building permit for the Development.
6. The developer shall submit a Traffic Control Plan as part of the proposed final site plan, detailing measures proposed to control traffic movement, lane closures, and construction entrances, haul routes, idling of construction vehicles and equipment, and the moving and staging of materials to and from, and (if planned, in public rights-of-way adjacent to the site, during the construction process. This Traffic Control Plan shall be amended, as necessary, and submitted along with any application or a building permit or other development permit applications.
7. The developer shall provide the city's director of neighborhood development services, adjoining property owners and the University of Virginia with written notice of a person who will serve as a liaison to the community throughout the duration of construction of the Development. The name and telephone number, including an emergency contact number, of this individual shall be provided.
8. If the City exists public infrastructure (public streets, sidewalks, curb, gutters, utilities, etc.) is damaged during construction of the Development, then the Property owner shall be responsible for repair and/or reconstruction of the same in accordance with applicable City standards.
9. The developer shall submit a foundation inspection, prior to commencement of construction of the first floor above-grade framing for the Building(s). The foundation inspection shall include
 - (i) the building footprint, as depicted within the approved final site plan,
 - (ii) the top-of-slab elevation and
 - (iii) the first floor elevation. The foundation inspection shall be prepared and sealed by a registered engineer or surveyor, and shall be approved by the zoning administrator prior to the commencement of construction of the first-floor above-grade framing.
10. Any structural elements that are proposed to extend into the public right-of-way, including, but not necessarily limited to, footings, foundations, tie-backs, etc., must be shown on the proposed final site plan and the property owner shall be required to enter into a written encroachment easement, in a form approved by the City Attorney, suitable for recording in the City's land records. A copy of the recorded instrument shall be submitted to the City along with the first request for a building permit for the development.
11. A Traffic Plan, showing the layout of signs, details, signals, turning lanes, entrances and exits, and pavement markings, shall be submitted to the City as part of the proposed final site plan for the development.
12. The Developer shall be responsible for the cost of constructing, in areas adjacent to the Property, any turning lane(s), traffic signals, or other public street improvements or traffic regulation devices, the need for which is substantially generated by the proposed Development.
13. In the event that the City determines, prior to the issuance of the final certificate of occupancy within the Development, that (i) relocation of any existing on-street parking, or (ii) changes to the direction of traffic on any adjacent street(s), (iii) elimination of any existing turn lane(s), and/or (iv) the addition of on-street parking adjacent to the Development Site, is reasonably necessitated by the proposed Development, then the Developer shall be responsible for the following:

- a. The cost of removal of existing signage and of installation of new signs and appurtenances necessary to shift or establish on-street parking, or to change the direction of traffic along the Development site's frontage with any existing public street; and
 - b. Pavement marking modifications (such as eradication of existing and addition of new markings).
- 14. The Development shall include one or more off-street loading docks/ areas. To the maximum extent feasible, all loading shall occur off-street, within such docks/ areas. Loading schedules shall be coordinated to facilitate off-street loading and to minimize idling by waiting vehicles. The Applicant has submitted an application seeking approval of a Special Use Permit in conjunction with a site plan for a hotel located at 1106 West Main Street. The Property has additional street frontage on 11th Street SW. The proposed development plan shows a 101 foot tall building with 150 hotel rooms and a restaurant. The building would have parking for 90 cars located in structured parking in the building.

Ms. Green asked how the drop off lane would be handled city wide. If we don't have a drop off lane and someone decides they want to do valet parking in the front instead and have valet right in front of the street, how this would be handled by the city.

Mr. Haluska said any sort of regulation regarding on street parking or anything on the street is subject to city regulation including the enforcement of parking regulations. If they wanted a legally established valet where they would not get ticketed or stopped by the police, they should certainly come in and talk to traffic engineering to make sure that arrangements works with the flow of traffic, not disrupting it in anyway. He said if anyone wanted to establish a valet program they would certainly have to talk to the planners first on how they handle the pick-ups if they are using a city street. He said it would need to be signed as such so there would be no confusion that certain on street spaces may be used for that.

Mr. Haluska said stopping in the street is a violation.

Mr. Santoski asked about 11th street. Is there a bike lane on 11th street?

Mr. Haluska said not at this time. He said with the concern from the University having two north bound lanes there and having a left and right turn and if that happen you do not have a dedicated bike lane. It would be looking more like a share road situation. He said right now there is not a striped lane and if you want a dedicated one that's taking space from other potential use. He said he didn't think there was a firm plan that the city has endorsed.

Mr. Santoski asked about the west main streetscape whether or not the side streets coming on to west main were also a part of the over-all plans for that.

Mr. Haluska said he didn't think the side streets were included from a bike lane standpoint. He said they were certainly considered from a pedestrian standpoint because there is a lot of traffic on Lee Street. There are a lot of people walking from the bus stop.

Mr. Keesecker asked if the conditions #7- 14 have a lot of logistical requirements related to notices repairing damage and loading dock and stuff included in the market plaza discussion. How many of those 7-14 are general requirements of site plan approval and building permits and normal regulations Is it fair to say that those conditions are a part of the city requirements anyway.

Mr. Haluska said some are and some are not. He said seven is not. Eight would be and nine is not a current requirement. He said ten, eleven, twelve, and fourteen but thirteen was struck by City Council on the Market Plaza application.

Ms. Keller asked Mr. Haluska to share his thoughts on the 11th street stepback and setback on conditions one and two.

Mr. Haluska said the one and two are the request from the applicant and the information he received from the BAR was split on how they saw that. Some of the BAR found it appropriate and some didn't. Looking at the street the only structure that gives you a frame of reference is the garage. The university garage has a substantial stepback on it. It is not five feet, it is quite a bit more than five feet.

Mr. Rosensweig asked whether the two floors of commercial had to be on the first floor.

Mr. Haluska said that the current design meets the zoning requirement.

Mr. Huja asked why there are so many different colors on the design.

Ms. Keller questioned if the applicant had considered having your guests dropped off on 11th street.

Mr. Flajser said they had considered this and described by UVA as an important travel artery to and from the hospital and the parking garage. To have a pull off on west main and a sidewalk where currently none does not

exist, is not going to be feasible in order to also maintain travel lanes. The University is looking at adding an additional travel lane in that area and certainly if we had a drop off in that location it would be impossible. Even now it would be very tight and would require coming in about two feet on sidewalk we are proposing today. We are proposing to maintain what is there as a bus drop off today and make that a car pull off and have the bus pull off drop off in front of it maintaining on street bus drop off because it is consistent with the new west main plan.

Mr. Keesecker asked have you considered an internal drop off inside the garage on the second level.

Mr. Applicant said this would further confuse the guest where you would have people confused about taking the right on 11th and further confused pulling into a garage, an urban drop off location. He said it has been done successful in other urban areas but he thinks that is only in areas where people are more use to that set up.

Mr. Keesecker said there are basically two ways people will be arriving to the hotel either driving a car or taking a taxi and if they are driving themselves they will need to find that garage.

Mr. Santoski looking at the diagram on the illustration, there are two cars in that spot and he is familiar with hotels at peak times more than two cars are trying to pull in and this will back up traffic on West Main Street one way or the other. He said the internal drop off makes a whole lot more sense.

Ms. Smith, City Councilor, stated that in the pictures there appears to be one whole side with no windows on the right side of the building.

Mr. Flajser, said that side is completely glass now rather than parking.

Ms. Smith said she is speaking of the wall face up above.

Mr. Flajser said yes that is windowless because it abuts an adjacent property where they can build up to our line so we will have to accommodate future development on that side.

Ms. Smith asked if the towers being completely different from the bottom are fairly institutional looking, is there a reason for that.

Ms. Cooper stated that their design intent is not for them to look institutional but it is slightly more modern and more contemporary in keeping with some of the more recently approved projects, the ground floor with the more terra cotta coloring, we are trying to pay homage to brick you see but yet taking a slightly more contemporary direction.

Mr. Lahendro said the loading dock and the parking entrance on 11th street right now shows a 36 feet gap in the sidewalk, asked if it possible to have a pedestrian island between the two vehicular entrances.

Open Public Hearing

Morgan Butler – 201 West Main Street, the applicant is seeking to build to the absolute maximum height that can be permitted. Other recent request has been the Flats, 1000 West Main and the standard. All of which were granted Special Use Permits that allowing them to build to the maximum height. I've seen the universal reaction to the Flat, now that it has gone from design drawings to reality, there is a strong sentiment in the community that we need to be much more careful to what we are permitting on West Main street. Height is only one aspect of scale but is an important one. Tall buildings can be an effective tool for advancing some city goals such as increasing density in appropriate corridors and potentially helping with advancing affordable housing. They can overwhelm nearby buildings and neighborhoods and can suffocate the pedestrian vitality which is another city goal. The communities concerns about height and scale on West Main Street has been channels into the cities ongoing work revisiting the permissible building envelopes along the street. The public last viewed this work late last summer and we understand that it will be the subject of a work session with City Council next week. The proposal will change the maximum permissible building height along this part of West Main Street from 101 feet down to 80 feet and would make other changes to the existing standards to help keep new buildings from overwhelming their surroundings and this proposal hasn't been adopted at this point but the concerns that it embodies in the general direction of which it was pointing namely down are important to keep in mind with this latest request to max out the permissible height. I want it be clear that we are not opposing a tall building on this site and the parking challenge that the applicant has identified might provide some justification why the building needs to go higher. However, we believe the city must get into the habit of requiring a truly compelling justification from applicant for pushing it right up to that maximum height allowance. Notably with the hotel the city isn't even getting some of key justifications that were mentioned during the debates on the flats as well as other proposals, specifically some of the higher residential densities and the potential of advancing the ball on affordable housing. Finally when maximum heights are proposed some of the

protective elements such as stepbacks and setbacks become more important. We share the concerns of some of the BAR members and some of you have expressed about the applicants request to eliminate the stepback and to reduce the setback on 11th street where it looks like a canyon would result. It sounded encouraging tonight by the applicant saying it is possible that we would no longer need to eliminate that stepback but it's not clear that they are now saying they do plan to have the five foot stepback. He said he wanted to make a point in response to the question to staff about staffs views on the necessity on the stepback, the response seem to be well the stepback doesn't seem to make that much difference anyway so it may not be a huge deal if we let that go. I would suggest another way of looking at this, if a five foot setback is not adequate and this is a Special Use Permit request, you have the discretions to ask for conditions why we don't impose a stepback that will make a difference.

Charlie Hurt, Route 20, Scottsville, Va. as The Director of Real Estate Leasing Services, representing the University of Virginia and the Medical Center. He suggested that both on the Battle Building excess to the Children's Hospital has an interior drop off and also the pedestrian bridge from the garage from across the tracks also interior to the parking garage so we are not directing all of the pedestrian traffic into the street. He stated that their institutional interest to this project derive from concerns regarding excess to the hospital, garages, and nearby offices. We are concern about excess by automobile, public transportation and pedestrians. For the past five years the University has invested in over 170,000,000 million dollars, 140,000,000 in the children's hospital, 26,000,000 in the garage, a million dollars on West Main Street improvements and a 5,000,000 pedestrian bridge to cross the tracks. This is to improve our first class medical center. Smooth traffic flow and public transportation all contribute to our success. Maintaining two-way vehicular as well as pedestrian traffic on 11th street during construction as well as when the hotel is open is critical to the operation to the health system. The 11th street garage has approximately 1,000 spaces due to hospital staff parking in the garage turns over three times a day. This garage also accommodates all patients over flow from the Lee Street garage which has 800 spaces and is generally filled up each day by midmorning. There are approximately 1750 appointments every day at the hospital and this does not include visitors, employees and staff members who work at the hospital. He suggested to take two feet of 11th street to accommodate the parking garage may further impact necessary street improvement on 11th street. He stated as mentioned trying to make a left handed turn from 11th street onto Main Street and in further reducing the existing width on 11th street may preclude that left hand turn onto West Main Street. He said part of our goal is to get people to the hospital but to get people on their way as well. The 11th street has to excess points 11th street and the entrance off Jefferson Park, so unimpeded two way excess on 11th street is vital to moving visitors, patients and staff. The University of Virginia Foundation successfully constructed the Battle Building on 11th street because we work closely with them to schedule construction delivers during work hours minimizing the impact on health care services and patient staff commutes. Much of the work was completed at night and delivers were carefully planned. We would like for all project approvals by the city to be conditioned by the request for temporary road closures, a one way traffic determination and be coordinated with UVA. We would like for it to be a requirement that goes beyond sharing information and would like to see UVA included as a participant in any request to temporarily close the one way street construction. He said it is challenging when you bring in a SUP and don't allow significant property owners joining not enough time to present their case so I will close. He continued saying the University would like to have an active voice in any temporary closing of one way actions during construction. We would like the bus stop and the pull off to remain active and in place during the construction and after operation. It is a major through-fare for pedestrians and closing the bus stop will make the pedestrians walk in the street to excess buses seems to disenfranchise those who use public transportation. There are four routes that use that bus stop, four, seven, and nine, thirteen bus stops between 8 and 7. We would like to minimize the fact to close 11th street and the sidewalk cause by truck deliveries that do not fully excess into the truck dock.

Closed the Public Hearing

Ms. Keller has concerns about the vehicular drop off on the West Main Streetscape current usage in terms of the City's current plan on streetscape improvements for that area one of her major concerns is the effects on West Main Street. She would like to explore ideas of her colleagues about interior access threw the parking garage. She said she does not think it to be insurmountable in finding this hotel if you are coming from out of town. She said it was interesting to hear from the University on how they handle their garages.

Ms. Dowell asked if we could make this a condition for the Special use Permit.

Ms. Creasy said you could not necessarily be specific about it being internal but you could denote the external and that may limit it to be internal.

Ms. Green said we wanted urban density and we have already approved three. She said when we do a comprehensive plan and get to this point. She said this is a great place for a hotel and she doesn't see any difference in adding this height to this hotel than she would the other three student houses. She said she has concerns about the drop off and doesn't feel it should be any difference from the University. Ms. Green said she likes wide sidewalks and has concerns about the two feet of sidewalk into the right-of-way. She also stated that this is a breath of fresh air to all of the brick. She said she likes the modern design, something different rather than the same we usually have down there.

Ms. Cooper said the existing conditions on 11th Street are less than ideal for pedestrians. She said we see at this corner is really a void in the space and we believe this is a gateway site for the Medical Center. She stated people will be coming to this building from far reaches and may not know this area, therefore, we're very concerned that if there's not a hotel drop-off, that people will just stop in the middle of the road. She also stated the pull-off would be similar to the loading zones at several places farther west, where the street becomes University Avenue.

Ms. Keller said she has concerns for the pedestrian on 11th street and the canyon affect and what that does to the pedestrian experience and the dark effect it would have on a street that is so heavily used by pedestrian. She stated she would like to see some pedestrian amenities for 11th street and she thinks she is in favor of the setback and step back along 11th street in return for increased height.

Mr. Santoski stated that he agrees with Ms. Keller that 11th is his concern that the pedestrian excess on 11th street is not acknowledged. He said he would like to see plantings along the route. He said we trying to be a walkable city then we should be able to walk where we want to walk and not in the canyon or tight up against a building and he is concerned about keeping 11th street in the width that it could handle 3 lanes in the future to accommodate the type of traffic that the University of anticipating out of the garage.

Mr. Keesecker said the application is for a reduction on a setback that would normally be 10 feet on 11th street. He asks without the SUP, they would have a 5 foot setback, and they have asked for 6 and 0.

Mr. Rosensweig asked if there are other concerns about impacts of the additional height and the other request for a reduction in setback and setback.

Mr. Keesecker said only the concerns mentioned so far and he doesn't have any new ones to add.

Mr. Rosensweig said the commissioners can probably craft some conditions to approve ultimately the variance on 11th street. Mr. Rosensweig complimented the applicant to the changes to the street wall on West Main and he incorporation of human space on all four levels at least on the west side of the building is a huge success and compliments by making that corner the tower feature by making that corner feature brings it to the front without bringing the whole tower to the front. He would like to memorialize that into a condition. One of our conditions is that the plan conforms to the SUP package, but he would like to incorporate the illustration of the building as well from the power point.

Ms. Robertson said since it's significantly important to you, you should call it out in the conditions and the same thing is true with any additional right-of-way along 11th street that they are offering to provide rather than rely on a general reference to the application materials. She stated that the application material as submitted is offering the additional two feet. In this sense, the conditions are memorializing another key component of the application that is of interest to you.

Ms. Smith, Council Member asked if an 8 foot sidewalk goes to a 10 foot sidewalk, does that start changing its potential for multi-use. She said for some reason she thinks that's illegal.

Ms. Creasy said she did not know the specifics about that.

Ms. Robertson said trails and sidewalks are different when you start going to something like a 10 foot sidewalk you more potential for things like outdoor cafes in that type of area, like a small plaza area instead of a true sidewalk.

Ms. Keller said a condition that restricts any vehicular access on the West Main Street corridor up to the building.

Mr. Keesecker said he agrees with Ms. Keller and Mr. Lahendro.

Mr. Santoski agrees with Kurt the biggest point is the drop off entrance on West Main Street.

Mr. Rosensweig said there has to be space for the entrance to the restaurant from West Main Street.

Mr. Huja, Mayor of Charlottesville, suggested that the applicant have a chance to speak.

Mr. Flajser gave a brief round-up of reasons to support the West Main South Corridor zoning permit; at a maximum height of 70 feet by right, and 101 feet by special use permit.

Mr. Lahendro inquired about tress and landscaping on 11th street.

Mr. Haluska said this is an ongoing problem having to do with discouraging trees planted in far too low volume of soil for the tress to thrive. He is not saying it's impossible but be sure to word the condition so that we get trees that are going to do well there without interruption to recognize that there is not a huge amount of room.

Ms. Keller said could we have a condition that there be landscaping and pedestrian amenities that are consistent with the theme of the West Main Street plan.

Ms. Robertson asked if the side streets are referenced in the plan.

Ms. Keller said only in the terms of connectivity and we haven't looked at anything from West Main in a while but if it is vocabulary of landscape material that are consistent with West Main Street then it would work.

Ms. Green move to recommend approval of a special use permit with increased height as requested in SP-14-10-9, subject to conditions, because I find that approval of this request is required for the public necessity, convenience, general welfare or good zoning practice. My motion includes a recommendation as outlined by Ms. Creasy conditions referenced in the staff report dated, subject to the following revisions

1. Subject to approval by the City traffic engineer, the developer shall construct an 8 foot wide sidewalk on the Subject Property's 11th St., S.W. frontage.
2. There will be no pull-off on or along West Main Street for vehicles picking up or dropping off patrons of the building. The Subject Property's frontage on West Main Street will be developed in a manner consistent with the City's approved West Main Streetscape Plan in effect at the time of site plan approval.
3. The design, height, and other characteristics of the Development shall remain essentially the same, in all material aspects, as described within the documents dated October 21, 2014 submitted to the City for and in connection with SP-14-10-10 ("Application"), as supplemented by additional drawings, elevations and other written materials presented to the Planning Commission at its meeting on December 9, 2014 ("12/9/14 Supplemental Materials") (collectively, the "Application Materials"). Except as the design details of the Development may subsequently be modified to comply with requirements of a certificate of appropriateness issued by the City's BAR, or by any other provision(s) of these SUP Conditions, any substantial change of the development that is inconsistent with the information or representations contained within any of the Application Materials shall require a modification of this SUP.
4. Among the 12/9/14 Supplemental Materials is a building elevation ("12/9/14 West Main Elevation") depicting the West Main Street frontage of the development. The proposed development shall adhere to the details depicted on the 12/9/14 West Main Elevation, including, without limitation:
 - a. Space located on the building's second and third floors (located over the area designated within the Application Materials as being planned for a ground-floor restaurant) shall be finished interior space.
 - b. Plantings shall be provided along West Main Street, in the depicted locations.
5. Prior to commencement of any land disturbing activity on the Subject Property, the developer shall hold a meeting with notice and invitation sent to all adjoining property owners, and to representatives of the University of Virginia, for the purpose of reviewing the proposed location(s) of construction worker parking; the plan for temporary pedestrian and vehicular circulation during construction; and the hours and overall schedule for construction activities. The city's director of neighborhood development services shall be provided with evidence that such meeting was held, and of the required notices, prior to the issuance of any building permit for the development.
6. The developer shall submit a Traffic Control Plan as part of its proposed final site plan, detailing measures proposed for the control of traffic movement, lane closures, construction entrances, haul routes, idling of construction vehicles and equipment, and the moving, storage and staging of excavated and fill materials and building materials to and from the development site during construction. Such plan shall specifically indicate whether any such activities are planned and requested to take place within public rights-of-way adjacent to the site. Following final site plan approval, this Traffic Control Plan may be amended, as necessary, with the approval of the City Engineer and director of neighborhood development services, and the currently-approved Traffic Plan shall be attached to any application for a building permit and to other development permit applications.

7. The developer shall provide the city's director of neighborhood development services, adjoining property owners and the University of Virginia with written notice of an individual who will serve as a liaison to the community throughout the duration of construction of the development. The name and telephone number, including an emergency contact number, of this liaison shall be provided. In the event the identify and/ or contact information of the designated liaison changes prior to completion of construction, the developer shall provide updated information to the director, adjacent property owners, and the University of Virginia.
8. If the City's existing public infrastructure (public streets, sidewalks, curb, gutters, utilities, etc.) is damaged during construction of the development, then the Property owner shall be responsible for repair and/or reconstruction of the same in accordance with applicable City standards.
9. The developer shall submit a foundation inspection, prior to commencement of construction of the first floor above-grade framing for the building(s). The foundation inspection shall include (i) the building footprint, as depicted within the approved final site plan, (ii) the top-of-slab elevation, and (iii) the first floor elevation. The foundation inspection shall be prepared and sealed by a registered engineer or surveyor, and shall be approved by the zoning administrator prior to the commencement of construction of the first-floor above-grade framing.
10. Any structural elements that are proposed to extend into the public right-of-way, including, but not necessarily limited to, footings, foundations, tie-backs, etc., must be shown on the proposed final site plan and the property owner shall be required to enter into a written encroachment easement, in a form approved by the City Attorney, suitable for recording in the City's land records. A copy of the recorded instrument shall be submitted to the City along with the first request for a building permit for the development.
11. The development shall include one or more off-street loading docks/ areas. To the maximum extent feasible, all loading shall occur off-street, within such docks/ areas. Loading schedules shall be established and coordinated to facilitate off-street loading and to minimize idling by loading and unloading of vehicles and by other vehicles traveling in adjacent rights-of-way.
12. There shall be at least two pedestrian entrances to the building on the West Main frontage, and at least one pedestrian entrance to the building on 11th Street SW.
13. The Subject Property's frontage along 11th Street SW shall be landscaped, and the landscape treatment shall provide pedestrian and landscape amenities consistent with the City's approved West Main Streetscape Plan in effect at the time of site plan approval, subject to approval by the City Arborist. This landscape treatment, approved by the City Arborist, shall be included as part of the final site plan for the development.
14. There shall be a dedicated pedestrian entrance/exit from the parking garage;

Seconded by Mr. Santoski, the motion passed 7-0.

Mr. Lahendro - yes
 Ms. Keller - yes
 Ms. Dowell - yes
 Mr. Keesecker - yes
 Mr. Santoski - yes
 Ms. Green - yes
 Mr. Rosensweig - yes

4. **ZT-14-10-11 – Transient Lodging Facility:** A proposed zoning text amendment, to add a new § 34-1176 to the City's Zoning Ordinance, and to amend and re-ordain § 34-420, § 34- 480, § 34-796 and § 34-1200 of the Zoning Ordinance of the City of Charlottesville, to provide a definition of "Transient lodging facility", and to allow any dwelling unit to be used as a transient lodging facility, subject to compliance with a Provisional Use Permit, within all zoning district classifications where residential uses are allowed. For the purposes of this proposed zoning text amendment, the term "transient lodging facility" generally refers to any dwelling unit offering guest rooms or other lodging rented out for continuous occupancy for fewer than 30 days, excluding any bed and breakfast. The lodging facilities contemplated by this zoning text amendment are

temporary stays in dwelling units, such as those offered through services commonly known as “Airbnb”, “HomeAway”, and “Stay Charlottesville”. Currently, such uses would fall within the Zoning Ordinance definition of “hotel/motel” in City Code sec. 34-1200, and are not currently authorized in any residential zoning district.

Report prepared by Read Brodhead, Zoning Administrator and Matt Alfele, City Planner.

The Applicant has submitted an application seeking approval of a Special Use Permit in conjunction with a site plan for a hotel located at 1106 West Main Street. The Property has additional street frontage on 11th Street SW. The proposed development plan shows a 101 foot tall building with 150 hotel rooms and a restaurant. The building would have parking for 90 cars located in structured parking in the building. The West Main South Corridor zoning permits a maximum height of 70 feet by right, and 101 feet by special use permit. Land Use height is reasonable at this location and that the impacts of the development can be addressed through conditions placed on the special use permit.

Ms. Keller questioned transient lodging regarding someone staying in a one room or someone staying in a one bedroom house, will they all be treated the same?

Mr. Aflete stated that is correct they all will be treated the same.

Ms. Dowell asked is this information gathered from AirBnB networks.

Mr. Aflete said yes that why the numbers are in the report, but if you looked on the website today the numbers would be different. We are looking at different models than we have in the past and we are trying to keep it fair to everyone while respecting homeowner right.

Ms. Green asked if the rules are not followed, will there not be another permit issued annually. She asked if the rules are not followed would the permit be revoked.

Mr. Aflete said we would revoke the permit.

Ms. Green said this is listed under all provisional but she doesn't understand the staff report recommendations. Why separate R1-U since RI-SU is smaller lots and there is more parking. Why wouldn't you take out of M1? It is still industrial. She said she doesn't understand the matrix's that was considered in the staff report and why it is appropriate in some areas and not in others.

Mr. Aflete said we tried to keep it inclusive as possible. The thought behind R1-U is it is the most restricted area and your most typical neighborhoods and the added difficulty of being near the University and there is a lot of stress between those two and so they thought it would be another added level of stress for the neighborhood.

Ms. Green said in looking at the Comprehensive Plan, how the goals match up and encouraging small businesses to enhance the neighborhoods.

Mr. Aflete said he understands her comments but this is just their recommendations.

Ms. Green stated if you are the own a condo can you rent it out?

Mr. Aflete said yes you can if you own the condo.

Ms. Green said since there is no cap on the amount of homes, you can have transient lodging everywhere, especially in the university area. She questioned how you would regulate the 30 days when you are eliminating certain neighborhoods.

Mr. Aflete stated in some areas where enforcement is an issue.

Ms. Dowell asked is this a bigger issue because of the people operating the small businesses or transient lodging are not paying taxes or the transient lodging taxes due to the city and state. She said she didn't see any reference to taxes being part of the issue.

Mr. Aflete stated that this would fall under getting your business license. He said we have found that the people want to pay their taxes but we cannot enforce taxes in the NDS capacity.

Ms. Creasy said once you get your business license the Commissioner of Revenue will follow up with that portion.

Mr. Santoski said if he wanted to rent out his house as long as he is not in the home can he rent it out.

Mr. Aflete said some do cap a number and certain permits they allow per year or census block. Some will do it on density.

Mr. Santoski said if he rented out his house for three days or 30 days regardless what it's for and I am not in the house it would fall under this.

Mr. Aflete said you would fall under the “HomeStay”.

Mr. Rosensweig said have there been any additional abuses of this.

Mr. Aflete said some places cap the number of permits per year, some by density and some by amount of census blocks.

Mr. Santoski asked is there protection for the renters.

Ms. Robertson said this goes through the fair housing act and this would be leased through the landlord to the renter.

Mr. Brodhead stated that the majority of complaints are noise and parking around the University area.

Opportunity for Public to Speak

Travis Wilburn, 400 E. Water's Street, He manages many businesses in Stay Charlottesville. He felt there are a lot of discrepancies in the zoning code. He said the people who like to stay with them are people who do not want to go to hotel, families coming together for Christmas, a family for graduation, or just coming to experience Charlottesville. Our company employs 4 full people and 10 part-time people. We have helped various people with short term rental that has experienced repo homes. We have been in this business for seven years. There are folks who will talk to anyone here for free to help this city with regulations that work.

Joyce Kasswandic, 1310 Timber Branch Court, the owner of Guest Houses established in 1976 and she is the third owner of Homestay for many years. The tourist industry has grown home rental is a big part of their business. In looking at the proposal and she thinks it's a good idea. Her main competition has been AirBnB. Is a one bedroom cottage treated the same as a 3 bedroom house. This business was started during UVA weekend. She disagrees that R1-U zone should be excluded. The proposal states we should notify neighbors and she has never notified her neighbors. She does not feel this proposal is going to eliminate all of the problems. She said there are properties not paying taxes that should be enforced. Lastly she said she wants to continue the use of Guest Houses as is.

David Vanderveer, 224 Mulberry Drive, Standards Ville, VA, He is an AirBnB host and no complaints from the neighbors. His guests are fantastic and wonderful people to have around. According to local zoning there should be only 2 people per bedroom. He keeps his property in good condition and has great reviews. He said people that stay longer are usually the noise makers while weekenders are there to get away from noise and be in a peaceful quiet place.

Alana Speidel, 2666 Jefferson Park Circle, we have resided there since 1984. JPA circle is a quiet place to live. The house next to us has changed owners four times and the new owners are a family with two small children. We did not realize the new folks were preparing the house for weekend rentals. About a year later we started to notice large groups of people around the house on weekends. These groups were noisy, using a considerable amount of alcohol while standing around a fire built in a metal container which was about 50 feet from the side of our house. We were told that this house is used for weekend rental without the residents present. We looked online and found a website for rental of 7 bedrooms in the home. Is this in compliance with the city codes? She said this is a business and the question is, is a business acceptable in a residential neighborhood. This can damage the quality of our neighborhood and my security. Gone is the comfort in knowing who the people next door are and the quality of life this affords. Increase noise and vehicular traffic is stressful.

Janet Mathews, 500 Lexington Avenue, she purchase the house from Martha Jefferson Hospital who used it as a boarding house for doctors who were on call. She has renovated it to be a Homestay and has an excellent experience with the management of the property. She was encouraged to comply with all parking regulations, talk to her neighbors in advance and she has never had one complaint. She keeps in close touch with them. She is in favor of regulations and she pays taxes through her business and she will be happy to get a business license but would like an introduction to zoning text after more public discussion.

Martin Killian, University Circle, the neighborhood association is opposed to this because of neighborhood under stress, not enough parking, 8-15 people in a house, football games, and alcohol. The city has known for two years that these houses do not comply with the zoning laws. He said if you enforce this proposal you will not have enough man power to enforce your own laws. He is very much against it.

Karen Doogle, 20 University Circle, She agrees with her neighbors Mr. Killian and Ms. Speidel. She said there is no supervision and there are all kinds of events at these two homes. Everybody invites their friends. There are wedding parties, football games, Fox field, and up to 10-12 cars at one house. She said Mr. Brodhead cannot run around all weekend to check on these houses and it is a huge problem on our circle.

Scott Wiley, 812 Rose Hill Drive, He is a nurse and he lives in town. The ability to rent a house has helped him to continue to afford to live in town. He supports this with some revisions.

Todd Divers, The Commissioner of Revenue, said this is a taxable activity and we have been unable to tax many of these folks for fear of lending legitimacy to an activity that is currently illegal. He said there's a ton of activity out there and we aren't getting any revenue from it. The city is reviewing the issue partially at the request of companies that are facilitating the practice. He feels that most of these people would be happy to pay. This is a big deal from a revenue standpoint.

Greer Murphy, 725 Hinton Avenue, We have lived in our house for 15 years and seen monumental changes in their neighborhood, mostly for the better. About 6 or 8 months ago we were approach by our neighbor which is a driveway away from our house and been a rental. The tenants were very kind but very noisy, meeting with friends, working on their cars and being social with their friends. I have to small children which is a constant nuisance to us. She stated that her family always used transient lodging and found it an enjoyable experience. She said she is the neighbor and certainly understands, but some are doing it correctly and some are not. She supports some rules and regulations that makes this work for everybody but thinks this is a great value to the city for them to pay taxes.

Janice Cavanaugh, 209 Douglas Ave, She has been rented out half of her house for over 6 years and has had great experience and her neighbors are aware of it and certainly agree that there are some bad apples causing havoc on some neighborhoods and has to be dealt with and certainly that if they have three strikes against them they should get their business license taken away. It is a great amenity for family that travels giving more space than a hotel room.

Cynthia Walters, University Circle, the neighborhood is trying to keep its intactness over time. Being close to the University we get a lot of family to rental which starts a trend, so you wonder if you want to be in that neighborhood anymore and what will it look like in 20 years because if it becomes transient all around you, you will not want to be there anymore. She doesn't think this is a good idea long term for the neighborhoods that are under pressure to fall.

Closed the Public Input

Ms. Green agreed with Mr. Killian's concern and said the city needs to take time to get the regulations right to make sure they will hold up in court.

Ms. Green said when you have the regulations, there's something to fall back on. However, the city does not have enough zoning officers to keep up with enforcement.

Ms. Keller said she is opposed to opening up the city to additional business uses in residential areas. She said she thinks temporary rentals will decrease the city's affordable housing stock. She also stated we've heard about people buying houses deliberately to make them transient lodging facilities and those are all houses now where families do not live. The other commissioners agreed the issue needs to be addressed through a change to the zoning code.

Mr. Lahendro said clearly, there is money to be made with this and I can see it growing and I can see the abuses getting worse.

The commissioners discussed Transient Lodging Facility at length, and reported its specific findings and recommendations to City Council.

5. Entrance Corridor – Johnson Village Phase III

The applicant is requesting Entrance Corridor review for the preliminary site plan for 241 units, including 31 townhouse units in four blocks, and 210 multi-family units in six buildings. Townhouse blocks range from 5-12 units. Most of the townhouse units have garages. There are also two freestanding garage/storage buildings. A total of 409 parking spaces are provided: in surface lots, in driveways, in garages, and along Cleveland Avenue. Recreational uses include a clubhouse, pool with paved deck area, two pocket parks with benches, and wooded open space area with 5 ft. wide natural trails. Landscaping consists of large shade trees, understory trees, evergreen trees,

and shrubs. The applicant has proposed a well- designed community. The development as presented addresses the criteria outlined in the Entrance Corridor regulations.

The commissioners discussed and agreed on another point of access as a condition the issue needs to be addressed through a change to the zoning code. The staff proposed no conditions. The lights are a part of the ordinance.

Mr. Santoski move to approve the Entrance Corridor certificate of appropriateness application for the Johnson Village PUD Phase 3, with the additional pedestrian connection to Cleveland Avenue, seconded by Mr. Keesecker, motion passes 6-1.

Mr. Lahendro - yes
 Ms. Keller - yes
 Ms. Dowell - yes
 Mr. Keesecker- yes
 Ms. Green - no
 Mr. Rosensweig – yes

6, Site Plan – Johnson Village Phase III

The applicant has proposed a well- designed community. The development as presented addresses the criteria outlined in the Entrance Corridor regulations.

Staff recommends approval as submitted.

Ms. Green questioned the critical slopes on this project. She said this new reconfiguration doesn't do that in her opinion.

Scott Collins of Collins Engineering, acting as agent for New Visions Properties, LLC, Inc. is requesting approval of a preliminary site plan to construct 141 dwelling units in a planned unit development at the intersection of 5th Street and Cleveland Avenue. City Council approved a rezoning for a PUD at this site at their March 1, 2004 meeting.

Mr. Collins said he remembers talking about the critical slopes and the biggest problem was they were impacting the slopes for a lot of additional units which was a lot of back and forth discussion on that. They have moved all of the units away from the critical slopes. The impact that is still there is the same footprint of the other critical slopes is the entrance road that comes in. At the very top is two apartment units back up against the top but we have pulled those apartments away from the residents and added a wall back there as well to keep us off the slopes as much as possible.

Ms. Green said so the road impacts the slopes not the building.

Mr. Collins said yes and the site changes elevations from 380 at the entrance up to 465 at the very top so in order to get up to the site.

Ms. Keller said she noticed that there were 3 pages of questions and comments and wondered how they all were addressed.

Mr. Aflete said most of the comments and questioned have been addressed. The engineers have work very close with Hugh Blake, NSD Engineer who has addressed the comments as well.

Mr. Keesecker move to approve conditioned on the satisfaction of remaining comments during the final site plan review and entrance corridor approval, seconded by Mr. Lahendro, passed 6-1.

Mr. Lahendro - yes
 Ms. Keller - yes
 Ms. Dowell - yes
 Mr. Keesecker- yes
 Ms. Green - no
 Mr. Rosensweig – yes

Ms. Keller move to adjourn at 12:10 a.m. until the second Tuesday in January, 2015.

CITY OF CHARLOTTESVILLE
DEPARTMENT OF NEIGHBORHOOD DEVELOPMENT SERVICES
STAFF REPORT



PLANNING COMMISSION REGULAR MEETING
DATE OF PLANNING COMMISSION MEETING: February 10, 2015

Author of Staff Report: Tony Edwards, Development Services Manager

Date of Staff Report: January 23, 2015

Origin of Request: Neighborhood Development Services Staff

Applicable City Code Provisions: 34- 41 Amendments to the Zoning Ordinance

Initiation Process

Whenever the public necessity, convenience, general welfare or good zoning practice require, the City Council may, by ordinance, amend, supplement, or change the city's zoning district regulations, district boundaries, or zoning district classifications. Any such amendment may be initiated either by (1) resolution of council or (2) motion of the planning commission. (See City Code §34-41(a), which is based on Virginia Code §15.2-2286(a)(7))¹.

Initiation Request

The Federal Emergency Management Agency (FEMA) has notified the City's Department of Neighborhood services that the City's current floodplain ordinance is outdated, and should be revised and replaced with new regulations mirroring the regulations set forth in FEMA's Model Floodplain Ordinance. FEMA has notified the City that an amended ordinance needs to be adopted in early 2015.

¹ A rezoning of a particular piece of property can be initiated by Council, Planning Commission, or a property owner (including the owner's agent).

Relevant Code Sections:

Chapter 34 (Zoning), Article II (Overlay Districts), Division 1 (Flood Hazard Protection Overlay district)

Public Comments Received

No public comment has been sought or received at the time this report was written. These regulations are driven by federal requirements.

Appropriate Motions

After listening to the proposal, the Planning Commission has the following options for moving forward:

- 1) “I move to *initiate* a proposed amendment to the city’s zoning ordinance, amending and re-enacting City Code Chapter 34, Article 2, Division 1, containing the regulations applicable within the City’s Flood Hazard Protection Overlay District.”
- 2) Decline to initiate the process, by voting against such a motion; or
- 3) Defer the entire matter until a later time.

If the Planning Commission votes in favor of initiation, the public hearing may be commenced (see below). Otherwise, the zoning text amendment cannot proceed until an initiation has been approved in accordance with procedural [legal] requirements.

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Study period and public hearing

Once an amendment has been initiated, our zoning ordinance provides that it is *deemed* referred by city council to the planning commission for study and recommendation. (See City Code §34-41(d)).

Standard of review

If initiated, the planning commission shall review and study each proposed amendment to determine:

- (1) Whether the proposed amendment conforms to the general guidelines and policies contained in the comprehensive plan;
- (2) Whether the proposed amendment will further the purposes of this chapter and the general welfare of the entire community;
- (3) Whether there is a need and justification for the change; and
- (4) When pertaining to a change in the zoning district classification of property, the effect of the proposed change, if any, on the property itself, on surrounding property, and on public services and facilities. In addition, the commission shall consider the

appropriateness of the property for inclusion within the proposed zoning district, relating to the purposes set forth at the beginning of the proposed district classification. City Code § 34-42

Suggested Motion

If the Planning Commission wishes to move to recommend adoption of the ordinance, the following motion may be used:

I move to recommend to City Council that it should amend and re-enact the City's floodplain regulations, as set forth in the proposed ordinance prepared by staff as part of ZT-15-XX, based on a finding that the *public necessity, convenience, general welfare or good zoning practice* require the proposed amendments.

CITY OF CHARLOTTESVILLE
DEPARTMENT OF NEIGHBORHOOD DEVELOPMENT SERVICES
STAFF REPORT



ZT-15-01-01: REQUEST FOR A ZONING TEXT AMENDMENT

PLANNING COMMISSION REGULAR MEETING
DATE OF PLANNING COMMISSION MEETING: February 10, 2015

Author of Staff Report: Tony Edwards

Date of Staff Report: January 23, 2015

Applicable City Code Provisions: §34-41 (Amendments to the Zoning Ordinance), §34-240 through §34-270 (Flood Hazard Protection Overlay District)

Executive Summary

This is a proposed zoning text amendment which would amend the Flood Hazard Protection Overlay District.

Background

The Federal Emergency Management Agency (FEMA) has notified the City's Department of Neighborhood Services that the City's current floodplain ordinance is outdated, and should be revised and replaced with new regulations mirroring the regulations set forth in FEMA's Model Floodplain Ordinance.

Standard of Review

As per state law and §34-42 of the City Code, the planning commission is required to review this proposed amendment to determine:

- (1) Whether the proposed amendment conforms to the general guidelines and policies contained in the comprehensive plan;
- (2) Whether the proposed amendment will further the purposes of this chapter and the general welfare of the entire community;
- (3) Whether there is a need and justification for the change; and
- (4) Whether the amendment is required by the public necessity, convenience, general welfare or good zoning practice.

Discussion of the Proposed Draft Ordinance

The full text of the proposed draft ordinance is attached to this report. The proposed ordinance is in the format prescribed by the Model Ordinance given to us by FEMA. Following below is a discussion of the purposes of the City's floodplain regulations, noting changes (if any) in the substantive regulations:

1. The floodplain regulations regulate uses, activities and development which, alone or in combination with other existing or future uses, activities, and development, will cause unacceptable increases in flood heights, velocities and frequencies;

The draft ordinance would allow the locality to expand those Floodplain Districts regulated currently, as Special Flood Hazard Areas (SFHA), to those areas of reoccurring flooding, where analysis methodologies similar to FEMAs could support that a flood hazard exists and should be regulated by the same standards.

2. The floodplain regulations restrict or prohibit certain uses, activities, and development from locating within districts subject to flooding;

The draft ordinance would allow the city more enforcement flexibility by the declaration of any non-compliant structure a public nuisance and abate as such. In some cases, flood insurance may be withheld from structures constructed in violation of this ordinance. It is more clearly stated that the locality will coordinate with new development to ensure that all appropriate adjacent communities, federal, and state agencies are notified of any proposed water course alterations.

3. The floodplain regulations require uses, activities, and developments that do occur in flood-prone districts to be protected and / or floodproofed against and flooding and flood damage;

The draft ordinance would require those currently non permitted improvements such as the installation of above ground tanks to be monitored more closely to ensure that proper anchoring requirements are applied. Any existing structures within the SFHA, that are modified to more than 50% of their Market Value, the entire structure shall comply with the USBC, whereas only the addition is currently required to meet these requirements.

4. The floodplain regulations protect individuals from buying land and structures which are unsuited for intended purposes because of flood hazards;

The ordinance encourages localities to provide additional information on Floodplain related issues to the general public in a variety of forms. The city could evaluate the expansion of the current information resources, like individual meetings with property owners and developers, city web site mapping, and FEMA web links.

5. If the City’s floodplain regulations meet the requirements of the national flood insurance program, lands within the city may qualify for flood insurance availability.

FEMA/ DCR has reviewed the proposed ordinance attached to this staff report, and their comments have been incorporated. With the approval of these agencies, and with the use of their Model Ordinance, the updated regulations will meet the requirements of the national flood insurance program.

Staff Analysis

1. Does the proposed amendment conform to the general guidelines and policies contained in the comprehensive plan?

The Environmental chapter of the Comprehensive Plan lists the following goals:

- “Value the Rivanna River as a major asset in the life of our City and Region and restore it to a healthy condition within our ecosystem in order to improve habitat, watershed health and water quality.”
- “Improve public and private stormwater infrastructure while protecting and restoring stream ecosystems.”

2. Does the proposed amendment further the purposes of the Zoning Ordinance (Chapter 34, City Code) and the general welfare of the entire community?

The city has had a flood hazard protection overlay zoning district in place for many years. The provisions of our current regulations have not been substantively reviewed or updated since 2008. The purpose of this overlay district is to promote the public health, safety and general welfare and also to minimize public losses due to flood conditions in specific areas. The proposed amendment, which has been prepared in the format of the Model Ordinance provided to staff by FEMA, reinforces this public purpose by adding clarity to the roles and responsibilities of the city staff and the applicant who request changes within these Special Flood Hazard Areas (SFHA)

3. Is there a need and justification for the change?

The Federal Emergency Management Agency FEMA, with the assistance of the Department of Conservation and Recreation (DCR) has required that the ordinance changes meet the current minimum compliance standards. FEMA reviewed the City’s draft and provided edits which have all been included in the document included in this package.

Public Comment

These changes are being driven by a FEMA/ DCR directive that our ordinance needed updating, and the provisions of the proposed ordinance are from a Model Ordinance provided by FEMA/ DCR for this purpose. Public input received during the public hearing process can be considered, and if any substantial changes are recommended by the planning commission, those changes would need to be sent to FEMA/ DCR for their approval prior to being adopted.

Recommendation

Staff recommends approval of the zoning text amendment.

Possible Motions

1. “I move to recommend to City Council that it should amend Chapter 34, Article 2, Division1 of the zoning ordinance, to update the Flood Hazard Protection Overlay District regulations in conformity with FEMA’s Model Ordinance, as presented in the draft ordinance provided by staff, because I find that this amendment is required by the public necessity, convenience, general welfare or good zoning practice.
2. I move to recommend to City Council that it should amend Chapter 34, Article 2, Division1 of the zoning ordinance, to update the Flood Hazard Protection Overlay District regulations in conformity with FEMA’s Model Ordinance, with the following changes:
 - a. _____
 - b. _____

I find that the draft ordinance presented by staff, with these changes, is required by the public necessity, convenience, general welfare or good zoning practice.

3. “I move to recommend to City Council that it should not amend Chapter 34, Article 2, Division1 of the zoning ordinance, to update the Flood Hazard Protection Overlay District regulations in conformity with FEMA’s Model Ordinance, because I find that the amendment is not required by the public necessity, convenience, general welfare or good zoning practice.

Attachments

Applicable city code section 34 -240 link: <https://www.municode.com>

Proposed Floodplain Ordinance per FEMA requirements

Virginia Model Floodplain Ordinance, dated March 20, 2014

DCR e-mail requiring the city ordinance revision.

From: Ghalayini, Nabil (DCR)
Sent: Thursday, April 24, 2014 3:44 PM
To: Edwards, Tony; Brodhead, Read
Subject: NFIP Community Assistance Visit (CAV)

Tony /Read:

A copy of the NFIP CAV report is attached for you records.

As indicated in the report, the City must continue to pursue a remedy to the violation at 1150 River Road as indicated in the attached March 20, 2014 letter.

The City must also revise its floodplain regulations consistent with the current Virginia Model Floodplain Ordinance (copy of March 2014 version attached.)

Please provide a polished draft of the revised floodplain regulations for DCR review by July 25, 2014, prior to adoption. If this timeline is not feasible, please let me know ASAP.

Thanks

Nabil

Nabil Ghalayini, P.E., PMP, D.WRE, CFM
Floodplain Program Engineer
Dam Safety and Floodplain Management
Department of Conservation and Recreation
600 East Main Street, 24th Floor
Richmond, VA 23219
804-514-3884 (M)



RESOLUTION
RECOMMENDING ZONING ORDINANCE TEXT AMENDMENTS
PROPOSING TO REPEAL THE CITY’S CURRENT FLOODPLAIN ORDINANCE
AND TO RE-ENACT UPDATED FLOODPLAIN REGULATIONS IN ACCORDANCE
WITH FEMA’S MODEL ORDINANCE PROVISIONS

WHEREAS, FEMA has notified the City’s Department of Neighborhood Development Services (NDS) that the City’s floodplain ordinance is outdated, and should be revised and replaced with new regulations mirroring the regulations set forth in FEMA’s Model Floodplain Ordinance; and

WHEREAS, the City Attorney’s office and NDS have prepared a proposed revised floodplain ordinance, using FEMA’s Model Floodplain Ordinance as a guide; and

WHEREAS, this Planning Commission, by motion, has initiated the following amendments to the City’s zoning ordinance and following a public hearing upon notice as required by law, this Commission has discussed and considered the amendments; and

WHEREAS, this Planning Commission finds and determines that the proposed zoning text amendments set forth following below within this Resolution constitute necessary amendments required by the public necessity, convenience, general welfare and good zoning practices, and are also required by FEMA; and

NOW, THEREFORE, this Planning Commission does hereby recommend to City Council that the existing provisions of City Code, Chapter 34, Article II, Division 1 (Flood Hazard Protection Overlay District) should be repealed, and in its place recommends that Council adopt the following updated floodplain regulations:

- 1. The provisions of Chapter 34 (Zoning), Article II (Overlay Districts), Division 1 (Flood Hazard Protection Overlay District) are hereby amended and re-ordained to read as follows:**

ARTICLE II – OVERLAY DISTRICTS

DIVISION 1. FLOOD HAZARD PROTECTION OVERLAY DISTRICT

Sec. 34-240. Authorization; purpose

(a) This ordinance is adopted pursuant to the authority granted to localities by Code of Virginia §15.2 – 2280.

(b) The purpose of the regulations set forth within this division is to prevent loss of life and property; deter the creation of health and safety hazards; prevent disruption of commerce and governmental services; avoid extraordinary and unnecessary expenditure of public funds for flood protection and relief; and prevent erosion of the city’s tax base, by:

- A. regulating uses, activities, and development which, alone or in combination with other existing or future uses, activities, and development, will cause unacceptable increases in flood heights, velocities, and frequencies;
- B. restricting or prohibiting certain uses, activities, and development from locating within districts subject to flooding;
- C. requiring all those uses, activities, and developments that do occur in flood-prone districts to be protected and/or flood-proofed against flooding and flood damage; and,
- D. protecting individuals from buying land and structures which are unsuited for intended purposes because of flood hazards; and
- E. meeting the requirements of the national flood insurance program, so that lands within the city may qualify for flood insurance availability.

Sec. 34-241. Applicability

The regulations within this division shall apply to all privately and publicly owned lands within the jurisdiction of the city of Charlottesville which have been identified as areas of special flood hazard according to the flood insurance rate map dated February 4, 2005, as amended (FIRM) provided by the federal emergency management agency (FEMA) to the city.

Sec. 34-242. Compliance and Liability

(a) No land shall be developed, and no structure shall be located, relocated, constructed, reconstructed, enlarged, or structurally altered, except in full compliance with the regulations set forth within this division and other federal, state or local statutes, regulations or ordinances that apply to lands within the jurisdiction of this ordinance.

(b) The degree of flood protection sought by this division is considered reasonable for regulatory purposes and is based on acceptable engineering methods of study, but does not imply total flood protection. Larger floods may occur on rare occasions. Flood heights may be increased by man-made or natural causes, such as ice jams and bridge openings restricted by debris. The applicability of this division to certain lands does not warrant or imply that districts outside the floodplain district, or land uses permitted within such district, will be free from flooding or flood damages.

(c) This enactment of this division shall not create liability on the part of the city of Charlottesville, or any officer or employee thereof, for any flood damages that result from reliance on the regulations set forth herein, or any administrative decision lawfully made hereunder.

Sec. 34-243. Records

Records of actions associated with administering this ordinance shall be maintained by the

Floodplain Administrator in accordance with the applicable requirements of federal and state law and regulations.

Sec. 34-244. Abrogation; greater restrictions

The regulations set forth within this division supersede any regulations currently in effect in flood-prone districts. Notwithstanding the foregoing, any regulations currently in effect shall be and remain in full force and effect to the extent that the provisions of such regulations are more restrictive.

Sec. 34-245. Severability

If any section, subsection, paragraph, sentence, clause, or phrase of this division shall be declared invalid for any reason whatever, such decision shall not affect the remaining provisions of this division. The remaining provisions shall be and remain in full force and effect, and for this purpose the provisions of this division are hereby declared to be severable.

Sec. 34-246. Penalty for Violations

(a) Any person who fails to comply with any of the regulations set forth within this division shall be subject to the enforcement provisions set forth within City Code Sec. 34-81 through 34-89.

(b) Separately, and in addition to the enforcement provisions of this chapter, any person who fails to comply with flood-proofing or other requirements of the Virginia Uniform Statewide Building Code (“USBC”) may be subject to the enforcement provisions set forth therein.

(c) In addition to the above-referenced enforcement provisions, all other enforcement actions are hereby reserved to the city, including, without limitation an action seeking injunctive relief. The imposition of a fine or penalty for any violation of, or noncompliance with, this article shall not excuse the violation or noncompliance or permit it to continue, and any person upon whom such a fine or penalty has been imposed shall be required to correct, remedy or abate such violations. Any structure constructed, reconstructed, enlarged, altered or relocated in noncompliance with this article may be declared by the city to be a public nuisance and abated as such.

(d) Flood insurance may be withheld from structures constructed in violation of this division.

Sec. 34-247. Designation of floodplain administrator

The director of neighbourhood development services is hereby appointed to administer and implement the regulations set forth within this division, and the director is referred to throughout this division as the Floodplain Administrator. The Floodplain Administrator may:

- (1) Perform the duties and responsibilities set forth herein;
- (2) Delegate duties and responsibilities set forth herein to qualified technical personnel, plan examiners, inspectors, and other city employees or agents;

(3) Enter into a written agreement or written contract with another locality or independent contractor, to engage such locality or contractor to serve as the city's agent for administration of the provisions of this division, or specific provisions set forth herein; however, administration of any part of these regulations by an agent shall not relieve the city of its responsibilities pursuant to the participation requirements of the National Flood Insurance Program, as set forth in the Code of Federal Regulations at 44 C.F.R. Section 59.22.

Sec. 34-248. Duties and responsibilities of floodplain administrator

The duties and responsibilities of the Floodplain Administrator shall include, but are not limited to:

- (1) Review applications for permits to determine whether proposed activities will be located in a special flood hazard area (SFHA);
- (2) Interpret floodplain boundaries and provide available base flood elevation and flood hazard information;
- (3) Review applications to determine whether proposed activities will be reasonably safe from flooding and require new construction and substantial improvements to meet the requirements of these regulations;
- (4) Review applications to determine whether all necessary permits have been obtained from the federal, state or local agencies from which prior or concurrent approval is required, including, without limitation: permits from state agencies for any construction, reconstruction, repair, or alteration of a dam, reservoir, or waterway obstruction (including bridges, culverts, structures); any alteration of a watercourse; any change of the course, current, or cross section of a stream or body of water, including any change to the 100-year frequency floodplain of free-flowing non-tidal waters of the State;
- (5) Verify that applicants proposing an alteration of a watercourse have notified adjacent communities, the Virginia Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management), and other appropriate agencies as may have authority over such alteration (e.g., the Virginia Department of Environmental Quality, United States Army Corps of Engineers) and have submitted copies of such notifications to FEMA;
- (7) Approve applications and issue permits authorizing development in flood hazard areas if the provisions of these regulations have been met, or disapprove applications if the provisions of these regulations have not been met;
- (8) Inspect or cause to be inspected, buildings, structures, and other development for which permits have been issued to determine compliance with these regulations, or to determine if non-compliance has occurred or violations have been committed;

(9) Review elevation certificates and require incomplete or deficient certificates to be corrected;

(10) Submit to FEMA, or require applicants to submit to FEMA, data and information necessary to maintain FIRMs, including hydrologic and hydraulic engineering analyses prepared by or for the City of Charlottesville, within six months after such data and information becomes available if the analyses indicate changes in base flood elevations;

(11) Maintain and permanently keep records that are necessary for the administration of these regulations, including:

- (i) Flood Insurance Studies, Flood Insurance Rate Maps (including historic studies and maps and current effective studies and maps) and Letters of Map Change; and

- (ii) Documentation supporting issuance and denial of permits, Elevation Certificates, documentation of the elevation (in relation to the datum on the FIRM) to which structures have been floodproofed, other required design certifications, variances, and records of enforcement actions taken to correct violations of these regulations;

(12) Enforce the provisions of these regulations, investigate violations, issue notices of violations or stop work orders, and require permit holders to take corrective action;

(13) Advise the board of zoning appeals regarding the intent of these regulations and, for each application for a variance, prepare a staff report and recommendation;

(14) Administer the requirements related to proposed work on existing buildings:

- (i) Make determinations as to whether buildings and structures that are located in flood hazard areas and that are damaged by any cause have been substantially damaged; and

- (ii) Make reasonable efforts to notify owners of substantially damaged structures of the need to obtain a permit to repair, rehabilitate, or reconstruct, and prohibit the non-compliant repair of substantially damaged buildings except for temporary emergency protective measures necessary to secure a property or stabilize a building or structure to prevent additional damage;

(15) Undertake other actions, as determined appropriate by the Floodplain Administrator due to the circumstances, including, but not limited to: issuing press releases, public service announcements, and other public information materials related to permit requests and repair of damaged structures; coordinating with federal, state, and other local agencies to assist with substantial damage determinations; providing owners of damaged structures information related to the proper repair of damaged structures in special flood

hazard areas; and rendering determinations as to whether specific properties have been substantially or repetitively damaged by flooding.

(16) Notify FEMA when the corporate boundaries of the city of Charlottesville have been modified and:

- (i) Provide a map that clearly delineates the new corporate boundaries or the new area for which the authority to regulate pursuant to these regulations has either been assumed or relinquished through annexation; and

- (ii) If the FIRM for any annexed area includes special flood hazard areas that have flood zones that have regulatory requirements that are not set forth in these regulations, prepare amendments to these regulations to adopt the FIRM and appropriate requirements, and submit the amendments to the governing body for adoption; such adoption shall take place at the same time as or prior to the date of annexation and a copy of the amended regulations shall be provided to Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management) and FEMA;

(17) Upon the request of FEMA, complete and submit a report concerning participation in the NFIP which may request information regarding the number of buildings in the SFHA, number of permits issued for development in the SFHA, and number of variances issued for development in the SFHA;

(18) Take into account actual flood, mudslide and flood-related erosion hazards, to the extent that they are known, in all official actions relating to land use, development and management throughout the entire jurisdictional area of the city, whether or not those hazards have been specifically delineated geographically via mapping, surveying, or otherwise.

Sec. 34-249. Use and interpretation of FIRMs

The Floodplain Administrator shall make interpretations, where needed, as to the exact location of special flood hazard areas, floodplain boundaries, and floodway boundaries. The following shall apply to the use and interpretation of FIRMs and data:

(1) Where field surveyed topography indicates that adjacent ground elevations:

- (i) are below the base flood elevation, even in areas not delineated as a special flood hazard area on a FIRM: the area shall be considered as special flood hazard area and subject to the requirements of these regulations;

- (ii) are above the base flood elevation: the area shall be regulated as special flood hazard area unless the applicant obtains a letter of map revision, pursuant to Sec. 34-254, removing the area from the SFHA.

(2) In FEMA-identified special flood hazard areas where base flood elevation and floodway data have not been identified and in areas where FEMA has not identified SFHAs, any other flood hazard data available from a federal, state, or other source shall be reviewed and reasonably used;

(3) Base flood elevations and designated floodway boundaries on FIRMs and in Flood Insurance Studies (“FIS”) shall take precedence over base flood elevations and floodway boundaries by any other sources if such sources show reduced floodway widths and/or lower base flood elevations;

(4) Other sources of data shall be reasonably used if such sources show increased base flood elevations and/or larger floodway areas than are shown on FIRMs and in FIS;

(5) If a Preliminary FIRM and/or a Preliminary FIS has been provided by FEMA:

(i) Upon the issuance of a letter of final determination by FEMA, the preliminary flood hazard data shall be used and shall replace the flood hazard data previously provided from FEMA for the purposes of administering these regulations;

(ii) Prior to the issuance of a letter of final determination by FEMA, the use of preliminary flood hazard data shall be deemed the best available data and shall be used where no base flood elevations and/or floodway areas are provided on the effective FIRM;

(iii) Prior to issuance of a letter of final determination by FEMA, the use of preliminary flood hazard data is permitted where the preliminary base flood elevations or floodway areas exceed the base flood elevations and/or designated floodway widths in existing flood hazard data provided by FEMA. Such preliminary data may be subject to change and/or appeal to FEMA.

Sec. 34-250. Jurisdictional Boundary Changes

(a) In the event that, following the adoption of this ordinance, the jurisdictional boundaries of the city are modified by annexation, then the Albemarle County floodplain ordinance in effect on the date of annexation shall remain in effect within the annexed areas, and shall be enforced by the city, until such time as the city adopts a resolution acknowledging and accepting responsibility for enforcing floodplain ordinance standards prior to annexation of any area containing identified flood hazards. If the FIRM for any annexed area includes special flood hazard areas that have flood zones that have regulatory requirements that are not set forth in these regulations, the city will adopt amendments to these regulations to adopt the FIRM and appropriate requirements for such area, and such adoption shall take place at the same time as, or prior to, the date of annexation and a copy of the amended regulations shall be provided to the Virginia Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management) and to FEMA.

(b) In accordance with 44 C.F.R. Sec. 59.22(a)(9)(v), the city will notify the Federal Insurance Administration (FIA) and its Virginia State Coordinating Office in writing, whenever the boundaries of the city have been modified by annexation, or the city has otherwise either assumed or no longer has authority to adopt and enforce floodplain management regulations for a particular area. In order that all FIRMs accurately represent the community's boundaries, a copy of a map of the city suitable for reproduction, clearly delineating the new corporate limits or new area for which the city has assumed or relinquished floodplain management regulatory authority must be included with the notification.

Sec. 34-251. District Boundary Changes

The delineation of any of the Floodplain Districts may be revised by the city when natural or man-made changes have occurred; when more detailed studies have been conducted or undertaken by the USACE or other qualified agency; or when an individual documents the need for such change. However, prior to any such change, approval must be obtained from FEMA.

Sec. 34-252. Interpretation of District Boundaries

Interpretations of the boundaries of the city's floodplain districts shall be made by the city's zoning administrator, by means of written determinations. The zoning administrator's determinations may be appealed to the city's board of zoning appeals, provided within sections 34-126 through 34-139 of the City Code. Any person who appeals an interpretation of the boundaries of the city's floodplain districts as applied to specific land may submit his own technical evidence to the board.

Sec. 34-253. Submitting technical data

A community's base flood elevations may increase or decrease as a result of physical land changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information becomes available, the city shall notify FEMA of such changes by submitting technical or scientific data. Such a submission is necessary so that, upon confirmation of those physical changes affecting flooding conditions, risk premium rates and flood plain management requirements will be based upon current data.

Sec. 34-254. Letters of map revision

When development in the floodplain causes, or will cause, a change in the base flood elevation, the landowner, including any state agency, must notify FEMA by applying for a conditional letter of map revision and then subsequently, followed by a letter of map revision. Examples of circumstances requiring action in accordance with this section include, but are not limited to, the following:

- (1) Any development that causes a rise in the base flood elevations within the floodway;
- (2) Any development occurring in Zones A1-30 and AE without a designated floodway, which will cause a rise of more than one foot in the base flood elevation; and

- (3) Any alteration or relocation of a stream, including but not limited to installation of culverts, bridges and crossings.

Sec. 34-255. Description of Special Flood Hazard Areas

(a) The basis for the delineation of the city's special flood hazard areas (SFHA) shall be the FIS and the accompanying flood insurance rate map prepared by FEMA date February 4, 2005, and any subsequent revisions or amendments thereto ("FIRM").

- (1) The city may also identify and regulate local flood hazard or ponding areas (LFHAs) in addition to the SFHAs delineated on the FIRM. These LFHAs may be delineated on a local flood hazard map (LFHM) using best available topographic data and locally derived information such as flood of record, historic high water marks or approximate study methodologies.
- (2) Upon approval of a LFHM by city council in accordance with the procedures for amendment of the city's zoning district map, the LFHM shall become part of this ordinance and the zoning district map identified within City Code Sec. 34-1.

(b) The city's SFHA shall consist of the following areas and zones:

- (1) The **AE Zone** on the FIRM, which shall be delineated by applying the following criterion: those areas for which one-per cent (1%) annual chance flood elevations have been provided and a floodway has **not** been delineated. The following provisions shall apply within an AE zone:
 - (i) Until a regulatory floodway is designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within the areas of special flood hazard, designated as Zones AE on the FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the city.
 - (ii) Development activities in Zones AE on the city's FIRM, which increase the water surface elevation of the base flood by more than one foot may be allowed, provided that the applicant first applies – with the endorsement of the Floodplain Administrator – for a letter of map revision in accordance with Sec. 34-254 and receives the approval of FEMA.
- (2) The **floodway** shall consist of certain areas, located within an **AE Zone**, delineated by applying the following criterion: areas within the floodplain that are capable of carrying the waters of the one percent annual chance flood without increasing the water surface elevation of that flood more than one (1) foot at any point ("floodway area"). The floodway areas included in this district are specifically defined in the FIS and shown on

the accompanying FIRM. The following regulations shall apply within the floodway of an AE zone:

- (i) Within any floodway area, no encroachments, including fill, new construction, substantial improvements, or other development shall be permitted unless it has been demonstrated through hydrologic and hydraulic analysis performed in accordance with standard engineering practice that the proposed encroachment will not result in any increase in flood levels within the community during the occurrence of the base flood discharge. Hydrologic and hydraulic analyses shall be undertaken only by professional engineers or others of demonstrated qualifications, who shall certify that the technical methods used correctly reflect currently-accepted technical concepts. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough review by the Floodplain Administrator.
 - (ii) Development activities which increase the water surface elevation of the base flood may be allowed, provided that the applicant first applies – with the Floodplain Administrator’s endorsement – for a letter of map revision in accordance with Sec. 34-254 and receives the approval of FEMA.
 - (iii) All new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions referenced within this division, including, without limitation, **Sections 34-257 to 34-260**.
 - (iv) The placement of manufactured homes is prohibited, except in an existing manufactured home park or subdivision. A replacement manufactured home may be placed on a lot in an existing manufactured home park or subdivision provided the anchoring, elevation, and encroachment standards are met.
- (3) The **approximated floodplain** shall be those areas shown as “A-Zones” on the FIRM, which shall be delineated by applying the following criterion: those areas for which no detailed flood profiles or elevations are provided, but the one percent annual chance floodplain boundary has been approximated. Within the approximated floodplain, the following provisions shall apply:
- (i) For these areas, the base flood elevations and floodway information from federal, state, and other acceptable sources shall be used, when available. Where the specific one percent annual chance flood elevation cannot be determined for this area using other sources of data, such as the U. S. Army Corps of Engineers Floodplain Information Reports, U. S. Geological Survey Flood-Prone Quadrangles, etc., then the landowner shall determine the base flood elevation using detailed methodologies comparable to those contained in a FIS. The requirement for detailed methodologies shall apply to any development that involves 5 acres or 50 lots. The Administrator may require the detailed methodologies for other developments, as appropriate to achieve the purposes of these regulations.

- (ii) For development proposed in the approximate floodplain, technical methods must be utilized that correctly reflect currently accepted non-detailed technical concepts, such as point on boundary, high water marks, or detailed methodologies hydrologic and hydraulic analyses. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough review by the Floodplain Administrator.
- (iii) The Floodplain Administrator shall have the right to require a hydrologic and hydraulic analysis for any development. When such base flood elevation data is utilized, the lowest floor shall be elevated to or above a point that is one foot above the base flood level. This provision shall not affect any separate elevation required by the USBC for electrical equipment or facilities.
- (iv) Prior to granting any permit authorizing development within an approximated floodplain district, the Floodplain Administrator shall obtain the elevation of the lowest floor (including the basement) of all new and substantially improved structures; and, if the structure has been flood-proofed in accordance with the applicable requirements of this division, the elevation (in relation to mean sea level) to which the structure has been flood-proofed.

Sec. 34-256. Zoning overlay

- (a) The SFHAs described above within Sec. 34-255 shall constitute zoning overlay districts. For purposes of this division, the boundaries of the city's SFHA overlay zoning districts are hereby established as shown on the FIRM, and the FIRM is declared to be a part of this ordinance and of the zoning district map identified within City Code Sec. 34-1. The FIRM shall be kept on file at the city's department of neighbourhood development services.
- (b) If there is any conflict between the regulations or requirements for development within an SFHA district and those of any underlying zoning district, the more restrictive provisions shall apply.

Sec. 34-257. Permit and Application Requirements

- (a) Permit required--No use, activity or development shall be established or conducted within any SFHA district, except upon the approval of a permit by the Floodplain Administrator.
 - (1) Every permit issued by the Floodplain Administrator shall be conditioned upon the permittee's strict compliance with the provisions of this division and other applicable federal and state laws, regulations, and city ordinances.
 - (2) No permit shall be approved by the Floodplain Administrator in circumstances when any

use, activity, or development will adversely affect the capacity of the channels or floodways of any watercourse, drainage ditch, or any other drainage facility or system.

(b) Land use and development permit applications—Every application seeking a permit or other authorization of the city allowing the use or development of land, or any land disturbing activity, within any SFHA district shall include the following information:

- (1) The elevation of the Base Flood at the site;
- (2) The elevation of the lowest floor (including basement);
- (3) For structures to be flood-proofed (non-residential only), the elevation to which the structure will be flood-proofed;
- (4) Information from a topographic survey, showing existing and proposed ground elevations.

Sec. 34-258. General permit conditions

The following shall each apply as a condition of the validity of every permit approved by the Floodplain Administrator:

- (1) New construction and substantial improvements shall be performed in accordance with the requirements of this division and the USBC, and shall be anchored as necessary to prevent flotation, collapse or lateral movement of the structure;
- (2) Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement shall be in addition to and consistent with applicable state anchoring requirements for resisting wind forces;
- (3) New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;
- (4) New construction or substantial improvements shall be constructed by methods and practices that minimize flood damage;
- (5) Electrical, heating, ventilation, plumbing, air conditioning equipment and other service facilities, including duct work, shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding;
- (6) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
- (7) 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;

(8) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding and approved by the local health department;

(9) In all SFHAs, the following requirements shall apply:

(i) Prior to any proposed alteration or relocation of any channels or of any watercourse, stream, etc., within this jurisdiction a permit shall be obtained from the USACE, VADEQ, and the VAMRC (a joint permit application is available from any of these organizations). Furthermore, in riverine areas, notification of the proposal shall be given by the applicant to all affected adjacent jurisdictions, the VADCR (Division of Dam Safety and Floodplain Management), other required agencies, and FEMA.

(ii) The flood carrying capacity within an altered or relocated portion of any watercourse shall be maintained.

Sec. 34-259. Elevation and Construction Standards

In all SFHA where base flood elevations have been provided in the FIRM, FIS or generated by a certified professional in accordance with Sec. 34-255, above, the following regulations shall apply:

(1) Residential construction--new construction or substantial improvement of any residential structure (including manufactured homes) in Zones AE and A with detailed base flood elevations shall have the lowest floor, including basement, elevated to or above a point that is one foot above the base flood level.

(2) Non-Residential Construction--New construction or substantial improvement of any commercial, industrial, or other non-residential building (including manufactured homes) shall have the lowest floor, including basement, elevated to or above a point that is one foot above the base flood level. Non-residential buildings located in all AE zones may be flood-proofed in lieu of being elevated, provided that all areas of the building components below the elevation corresponding to the base flood elevation, plus one foot, are water tight with walls substantially impermeable to the passage of water, and use structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A professional engineer, architect or surveyor shall certify that the standards of this subsection are satisfied. Such certification, including the specific elevation (in relation to mean sea level) to which such structures are floodproofed, shall be provided at the time the finished floor is completed. An Elevation Certificate shall be provided and maintained by the Floodplain Administrator within the records required by this division.

(3) Space Below the Lowest Floor—in zones A, AE, AH, AO, and A1-A30, fully enclosed areas of new construction or of substantially improved structures, which are below the regulatory flood protection elevation, shall:

- (i) not be designed or used for human habitation, but shall only be used for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment (standard exterior door), or entry to the living area (stairway or elevator); and
- (ii) be constructed entirely of flood resistant materials below the regulatory flood protection elevation, and shall include measures to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters through openings--all such openings must either be certified by a professional engineer or architect, or must meet all of the criteria referenced in subparagraphs (iii) – (viii) below.
- (iii) There must be provided a minimum of two openings on different sides of each enclosed area subject to flooding.
- (iv) The total net area of all openings must be at least one (1) square inch for each square foot of enclosed area subject to flooding.
- (v) If a building has more than one enclosed area, each area must have openings to allow floodwaters to automatically enter and exit.
- (vi) The bottom of all required openings shall be no higher than one (1) foot above the adjacent grade.
- (vii) Openings may be equipped with screens, louvers, or other opening coverings or devices, provided they permit the automatic flow of floodwaters in both directions.
- (viii) Foundation enclosures made of flexible skirting are not considered enclosures for regulatory purposes, and, therefore, do not require openings. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires openings as outlined above.

(4) Standards for manufactured homes and recreational vehicles—all manufactured homes placed, or substantially improved, on individual lots or parcels, must meet all the requirements for new construction, including, without limitation, the elevation and anchoring requirements in **Sections 34-258, and 34-259(1) through 34-259(3)**. All recreational vehicles must either:

- (i) be on the site for fewer than 180 consecutive days, be fully licensed and ready

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

- (ii) meet all the requirements set forth within this division for manufactured homes.

(5) Standards for new above-ground storage tank all above-ground propane storage tanks, including new tanks installed to replace an existing tank, must meet the following requirements:

- (i) Tanks that are associated with new or existing utility service or that are attached to or located under a building, tank inlets, fill openings, outlets, and vents, shall be elevated above the elevation specified in ASCE / SEI 24.05 or most current standard.

- (ii) Tanks shall be designed, constructed, installed, and anchored to resist at least 1.5 times the potential buoyant and other flood forces acting on an empty tank during design flood conditions.

Sec. 34-260. Standards for subdivision development

(a) All proposed subdivision developments shall be designed in a manner consistent with the need to minimize flood damage;

(b) All proposed subdivision developments shall have public utilities and facilities such as sewer, gas, electrical and water systems located and designed for construction in a manner that will minimize flood damage;

(c) All proposed subdivision developments shall provide drainage adequate to reduce exposure to flood hazards, and

(d) Base flood elevation data shall be obtained from other sources or developed using detailed methodologies, hydraulic and hydrologic analysis comparable to those contained in a Flood Insurance Study for subdivision proposals and other proposed development proposals (including manufactured home parks and subdivisions) that exceed fifty lots or five acres (whichever is less).

Sec. 34-261. Existing structures

A structure or use of a structure or premises which lawfully existed before the enactment of this division, but which is not in conformity with the regulations of this division, may be continued subject to the following conditions:

- (1) Existing structures in the Floodway Area shall not be expanded or enlarged unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practices that the proposed expansion would not result in any increase in the base flood elevation.

- (2) Any modification, alteration, repair, reconstruction, or improvement of any kind to a structure and/or use located in any floodplain areas to an extent or amount of less than fifty (50) percent of its market value shall conform to the USBC and the appropriate provisions of this division.
- (3) The modification, alteration, repair, reconstruction, or improvement of any kind to a structure and/or use, regardless of its location within a SFHA district, to an extent or amount of fifty (50) percent or more of its market value, shall be undertaken only in full compliance with this ordinance and shall require the entire structure to conform to the USBC.

Sec. 34-262. Variances

(a) Variances shall be granted by the BZA only upon a determination (i) that a failure to grant the variance would result in exceptional hardship to the applicant; (ii) that the granting of such variance will not result in unacceptable or prohibited increases in flood heights, additional threats to public safety, extraordinary public expense, any nuisances, any fraud or victimization of the public, or any conflict with federal, state or city laws, regulations or ordinances. Variances shall be issued only after the Board of Zoning Appeals has determined that the variance will be the minimum required to provide relief.

(b) Generally, the granting of variances will be limited to lots having a size of less than one-half acre; however, circumstances may require the BZA to deviate from this general provision. However, as the lot size increases beyond one-half acre, the technical justification required for issuing a variance increases. Variances may be issued by the BZA for new construction or substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, in conformance with the provisions of this section.

(c) Variances may be granted by the BZA for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that the criteria of this section are met, and the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

(d) In considering applications for variances, the BZA shall consider relevant factors and procedures specified by state statutes and city ordinances, and the BZA shall also consider the following additional factors:

- (1) The danger to life and property due to increased flood heights or velocities caused by encroachments. No variance shall be granted for any proposed use, development, or activity within any Floodway District that will cause any increase in the one percent (1%) chance flood elevation.
- (2) The danger that materials may be swept on to other lands or downstream to the injury of others.

- (3) The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination, and unsanitary conditions.
 - (4) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owners.
 - (5) The importance of the services provided by the proposed facility to the community.
 - (6) The requirements of the facility for a waterfront location.
 - (7) The availability of alternative locations not subject to flooding for the proposed use.
 - (8) The compatibility of the proposed use with existing development and development anticipated in the foreseeable future.
 - (9) The relationship of the proposed use to the comprehensive plan and floodplain management program for the area.
 - (10) The safety of access by ordinary and emergency vehicles to the property in time of flood.
 - (11) The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters expected at the site.
 - (12) The historic nature of a structure. Variances for repair or rehabilitation of historic structures may be granted upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.
 - (13) Such other factors which are relevant to the purposes of this ordinance.
- (e) The BZA may refer any application and accompanying documentation pertaining to any request for a variance to a professional engineer or other qualified person or agency for technical assistance in evaluating the proposed project in relation to flood heights and velocities, and the adequacy of the plans for flood protection and other related matters.
- (f) The Board of Zoning Appeals shall notify the applicant for a variance, in writing, that the approval of a variance to construct a structure below the one percent (1%) chance flood elevation increases the risks to life and property and will result in increased premium rates for flood insurance. A record shall be maintained by the Floodplain Administrator of this notification as well as all actions of the BZA pursuant to this section, including justification for the issuance of the variances. Any variances approved by the BZA shall be noted in the annual or biennial report submitted by the Floodplain Administrator to the Federal Insurance Administrator.

34-263. Definitions

As used within this division, the following terms shall have the meanings set forth below:

- (1) Base flood - The flood having a one percent chance of being equalled or exceeded in any given year; also referred to as the 100-year flood.
- (2) Base flood elevation - The water surface elevations of the base flood, that is, the flood level that has a one percent or greater chance of occurrence in any given year. The water surface elevation of the base flood in relation to the datum specified on the community's Flood Insurance Rate Map. For the purposes of this ordinance, the base flood is the 1% annual chance flood.
- (4) Basement - Any area of the building having its floor sub-grade (below ground level) on all sides.
- (5) Board of Zoning Appeals or BZA - The board referred to within City Code 34-126 et seq.
- (6) Development – For the purposes of the City's floodplain regulations, the term means any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.
- (7) Elevated building - A non-basement building built to have the lowest floor elevated above the ground level by means of solid foundation perimeter walls, pilings, or columns (posts and piers).
- (8) Encroachment - The advance or infringement of uses, plant growth, fill, excavation, buildings, permanent structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.
- (9) Existing construction - structures for which the "start of construction" commenced before June 15, 1979. "Existing construction" may also be referred to as "existing structures."
- (10) Flood or flooding – a general or temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters or the unusual and rapid accumulation or runoff of surface waters from any source. Mudflows which are proximately caused by flooding and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding.

- (11) Flood Insurance Rate Map (FIRM) - an official map of a community, on which the Federal Emergency Management Agency has delineated both the special hazard areas and the risk premium zones applicable to the community. A FIRM that has been made available digitally is called a Digital Flood Insurance Rate Map (DFIRM).
- (12) Flood Insurance Study (FIS) – a report by FEMA that examines, evaluates and determines flood hazards and, if appropriate, corresponding water surface elevations for the City of Charlottesville’s FIRM.
- (13) Floodplain or flood-prone area - Any land area susceptible to being inundated by water from any source.
- (14) Flood proofing - any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.
- (15) Floodway - The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.
- (16) Freeboard - A factor of safety usually expressed in feet above a flood level for purposes of floodplain management. “Freeboard” tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization in the watershed.
- (17) Highest adjacent grade - the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.
- (18) Historic structure - Any structure that is
- a. listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
 - b. certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
 - c. individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or,
 - d. individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either
 - i. by an approved state program as determined by the Secretary of the

- Interior; or,
- ii. directly by the Secretary of the Interior in states without approved programs.

(19) Hydrologic and Hydraulic Engineering Analysis – Analyses performed by a *licensed* professional engineer, in accordance with standard engineering practices that are accepted by the Virginia Department of Conservation and Recreation and FEMA, used to determine the *base flood*, other frequency floods, *flood* elevations, *floodway* information and boundaries, and *flood* profiles.

(20) Letter of Map Change (LOMC) - A Letter of Map Change is an official FEMA determination, by letter, that amends or revises an effective *Flood Insurance Rate Map* or *Flood Insurance Study*. Letters of Map Change include:

Letter of Map Amendment (LOMA)-- An amendment based on technical data showing that a property was incorrectly included in a designated *special flood hazard area*. A LOMA amends the current effective *Flood Insurance Rate Map* and establishes that a Land as defined by meets and bounds or *structure* is not located in a *special flood hazard area*.

Letter of Map Revision (LOMR)-- A revision based on technical data that may show changes to *flood zones*, *flood* elevations, *floodplain* and *floodway* delineations, and planimetric features. A Letter of Map Revision Based on Fill (LOMR-F), is a determination that a *structure* or parcel of land has been elevated by fill above the *base flood elevation* and is, therefore, no longer exposed to *flooding* associated with the *base flood*. In order to qualify for this determination, the fill must have been permitted and placed in accordance with the *community's* floodplain management regulations.

Conditional Letter of Map Revision (CLOMR)-- A formal review and comment as to whether a proposed *flood* protection project or other project complies with the minimum NFIP requirements for such projects with respect to delineation of *special flood hazard areas*. A CLOMR does not revise the effective *Flood Insurance Rate Map* or *Flood Insurance Study*.

(21) Lowest adjacent grade - the lowest natural elevation of the ground surface next to the walls of a structure.

(22) Lowest floor - 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 the applicable non-elevation design requirements of Federal Code 44CFR §60.3.

(23) Manufactured home - A structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent

foundation when connected to the required utilities. For floodplain management purposes the term “manufactured home” also includes park trailers, travel trailers, and other similar vehicles placed on a site for greater than 180 consecutive days.

- (24) Manufactured home park or subdivision - a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.
- (25) Mean Sea Level - is an elevation point that represents the average height of the ocean's surface (such as the halfway point between the mean high tide and the mean low tide) which is used as a standard in reckoning land elevation.
- (26) New construction - For the purposes of determining insurance rates, structures for which the “start of construction” commenced on or after June 15, 1979, and includes any subsequent improvements to such structures. For floodplain management purposes, *new construction* means structures for which the *start of construction* commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.
- (27) Post-FIRM structures - A structure for which construction or substantial improvement occurred on or after June 15, 1979 or later.
- (28) Pre-FIRM structures - A structure for which construction or substantial improvement occurred before June 15, 1979.
- (29) Primary frontal dune - a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes immediately landward and adjacent to the beach and subject to erosion and overtopping from high tides and waves during major coastal storms. The inland limit of the primary frontal dune occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.
- (30) Recreational vehicle - A vehicle which is
 - a. built on a single chassis;
 - b. 400 square feet or less when measured at the largest horizontal projection;
 - c. designed to be self-propelled or permanently towable by a light duty truck; and,
 - d. designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational camping, travel, or seasonal use.
- (31) Repetitive Loss Structure – A building covered by a contract for flood insurance that has incurred flood-related damages on two occasions in a 10-year period, in which the cost of the repair, on the average, equalled or exceeded 25 percent of the market value of the structure at the time of each such flood event; and at the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage.
- (32) Severe repetitive loss structure - a structure that:
 - (a) Is covered under a contract for flood insurance made available under the NFIP; and
 - (b) Has incurred flood related damage –
 - (i) For which 4 or more separate claims payments have been made under flood insurance

coverage with the amount of each such claim exceeding \$5,000, and with the cumulative amount of such claims payments exceeding \$20,000; or (ii) For which at least 2 separate claims payments have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure.

(33) Shallow flooding area – A special flood hazard area with base flood depths from 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.

(34) Special flood hazard area (SFHA) - The land in the floodplain subject to a one (1%) percent or greater chance of being flooded in any given year as determined in the FIRM.

(35) Start of construction –Start of construction includes substantial improvement, and means the date the building 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. This definition will be used to determine whether proposed construction must meet new requirements when National Flood Insurance Program (NFIP) maps are issued or revised and Base Flood Elevation's (BFEs) increase or zones change.

The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab 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. For a substantial improvement, the actual start of construction means 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.

Permanent construction does not include 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 not part of the main structure.

(36) Structure - for floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

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

(38) Substantial improvement - Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the *start of construction* of the improvement. This term includes structures which have incurred *repetitive loss* or *substantial damage* regardless

of the actual repair work performed. The term does not, however, include either:

- a. any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or
- b. any alteration of a *historic structure*, provided that the alteration will not preclude the structure's continued designation as a *historic structure*.
- c. Historic structures undergoing repair or rehabilitation that would constitute a substantial improvement as defined above, must comply with all ordinance requirements that do not preclude the structure's continued designation as a historic structure. Documentation that a specific ordinance requirement will cause removal of the structure from the National Register of Historic Places or the State Inventory of Historic places must be obtained from the Secretary of the Interior or the State Historic Preservation Officer. Any exemption from ordinance requirements will be the minimum necessary to preserve the historic character and design of the structure.

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

(40) Watercourse - A lake, river, creek, stream, wash, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

ORDINANCE NO. _____

AN ORDINANCE AMENDING ORDINANCE NO. _____, THE ZONING ORDINANCE OF {community} VIRGINIA, BY ESTABLISHING FLOODPLAIN DISTRICTS, BY REQUIRING THE ISSUANCE OF PERMITS FOR DEVELOPMENT, AND BY PROVIDING FACTORS AND CONDITIONS FOR VARIANCES TO THE TERMS OF THE ORDINANCES.

BE IT ENACTED AND ORDAINED BY THE {community}, Virginia, as follows:

ARTICLE I - GENERAL PROVISIONS

Section 1.1 – Statutory Authorization and Purpose [44 CFR 59.22(a)(2)]

This ordinance is adopted pursuant to the authority granted to localities by Va. Code § 15.2 - 2280. *(applies to an ordinance that is part of the zoning ordinance. If it is a stand-alone ordinance, the citation is § 10.1 – 600 et. seq.)*

The purpose of these provisions is to prevent: the loss of life and property, the creation of health and safety hazards, the disruption of commerce and governmental services, the extraordinary and unnecessary expenditure of public funds for flood protection and relief, and the impairment of the tax base by

- A. regulating uses, activities, and development which, alone or in combination with other existing or future uses, activities, and development, will cause unacceptable increases in flood heights, velocities, and frequencies;
- B. restricting or prohibiting certain uses, activities, and development from locating within districts subject to flooding;
- C. requiring all those uses, activities, and developments that do occur in flood-prone districts to be protected and/or flood-proofed against flooding and flood damage; and,
- D. protecting individuals from buying land and structures which are unsuited for intended purposes because of flood hazards.

Section 1.2 - Applicability

These provisions shall apply to all privately and publicly owned lands within the jurisdiction of {community} and identified as areas of special flood hazard according to the flood insurance rate map (FIRM) that is provided to the {community} by FEMA.

Section 1.3 - Compliance and Liability

- A. No land shall hereafter be developed and no structure shall be located, relocated,

constructed, reconstructed, enlarged, or structurally altered except in full compliance with the terms and provisions of this ordinance and any other applicable ordinances and regulations which apply to uses within the jurisdiction of this ordinance.

- B. The degree of flood protection sought by the provisions of this ordinance is considered reasonable for regulatory purposes and is based on acceptable engineering methods of study, but does not imply total flood protection. Larger floods may occur on rare occasions. Flood heights may be increased by man-made or natural causes, such as ice jams and bridge openings restricted by debris. This ordinance does not imply that districts outside the floodplain district or land uses permitted within such district will be free from flooding or flood damages.
- C. This ordinance shall not create liability on the part of {community} or any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made thereunder.

Section 1.4 – Records [44 CFR 59.22(a)(9)(iii)]

Records of actions associated with administering this ordinance shall be kept on file and maintained by the Floodplain Administrator.

Section 1.5 - Abrogation and Greater Restrictions [44 CFR 60.1(b)]

This ordinance supersedes any ordinance currently in effect in flood-prone districts. Any ordinance, however, shall remain in full force and effect to the extent that its provisions are more restrictive.

Section 1.6 - Severability

If any section, subsection, paragraph, sentence, clause, or phrase of this ordinance shall be declared invalid for any reason whatever, such decision shall not affect the remaining portions of this ordinance. The remaining portions shall remain in full force and effect; and for this purpose, the provisions of this ordinance are hereby declared to be severable.

Section 1.7 - Penalty for Violations [44 CFR 60.2(e)]

Any person who fails to comply with any of the requirements or provisions of this article or directions of the director of planning or any authorized employee of the [community] shall be guilty of the appropriate violation and subject to the penalties therefore.

The VA USBC addresses building code violations and the associated penalties in Section 104 and Section 115. Violations and associated penalties of the Zoning Ordinance of {community} are addressed in Section ____ of the Zoning Ordinance.

In addition to the above penalties, all other actions are hereby reserved, including an action in equity for the proper enforcement of this article. The imposition of a fine or penalty for any violation of, or noncompliance with, this article shall not excuse the violation or noncompliance or permit

it to continue; and all such persons shall be required to correct or remedy such violations within a reasonable time. Any structure constructed, reconstructed, enlarged, altered or relocated in noncompliance with this article may be declared by the [community] to be a public nuisance and abatable as such. Flood insurance may be withheld from structures constructed in violation of this article.

ARTICLE II - ADMINISTRATION

Section 2.1 - Designation of the Floodplain Administrator [44 CFR 59.22(b)]

The (*particular title for the Floodplain Administrator*) is hereby appointed to administer and implement these regulations and is referred to herein as the Floodplain Administrator. The Floodplain Administrator may:

- (A) Do the work themselves. In the absence of a designated Floodplain Administrator, the duties are conducted by the {community} chief executive officer.
- (B) Delegate duties and responsibilities set forth in these regulations to qualified technical personnel, plan examiners, inspectors, and other employees.
- (C) Enter into a written agreement or written contract with another community or private sector entity to administer specific provisions of these regulations. Administration of any part of these regulations by another entity shall not relieve the community of its responsibilities pursuant to the participation requirements of the National Flood Insurance Program as set forth in the Code of Federal Regulations at 44 C.F.R. Section 59.22.

Section 2.2 - Duties and Responsibilities of the Floodplain Administrator [44 CFR 60.3]

The duties and responsibilities of the Floodplain Administrator shall include but are not limited to:

- (A) Review applications for permits to determine whether proposed activities will be located in the Special Flood Hazard Area (SFHA).
- (B) Interpret floodplain boundaries and provide available base flood elevation and flood hazard information.
- (C) Review applications to determine whether proposed activities will be reasonably safe from flooding and require new construction and substantial improvements to meet the requirements of these regulations.
- (D) Review applications to determine whether all necessary permits have been obtained from the Federal, State or local agencies from which prior or concurrent approval is required; in particular, permits from state agencies for any construction, reconstruction, repair, or alteration of a dam, reservoir, or waterway obstruction (including bridges, culverts, structures), any alteration of a watercourse, or any change of the course, current, or cross section of a stream or body of water, including any change to the 100-year frequency floodplain of free-flowing non-tidal waters of the State.
- (E) Verify that applicants proposing an alteration of a watercourse have notified adjacent communities, the Department of Conservation and Recreation (Division of Dam Safety

and Floodplain Management), and other appropriate agencies (VADEQ, USACE) and have submitted copies of such notifications to FEMA.

(F) Advise applicants for new construction or substantial improvement of structures that are located within an area of the Coastal Barrier Resources System established by the Coastal Barrier Resources Act that Federal flood insurance is not available on such structures; areas subject to this limitation are shown on Flood Insurance Rate Maps as Coastal Barrier Resource System Areas (CBRS) or Otherwise Protected Areas (OPA).

(G) Approve applications and issue permits to develop in flood hazard areas if the provisions of these regulations have been met, or disapprove applications if the provisions of these regulations have not been met.

(H) Inspect or cause to be inspected, buildings, structures, and other development for which permits have been issued to determine compliance with these regulations or to determine if non-compliance has occurred or violations have been committed.

(I) Review Elevation Certificates and require incomplete or deficient certificates to be corrected.

(J) Submit to FEMA, or require applicants to submit to FEMA, data and information necessary to maintain FIRMs, including hydrologic and hydraulic engineering analyses prepared by or for the (community), within six months after such data and information becomes available if the analyses indicate changes in base flood elevations.

(K) Maintain and permanently keep records that are necessary for the administration of these regulations, including:

(1) Flood Insurance Studies, Flood Insurance Rate Maps (including historic studies and maps and current effective studies and maps) and Letters of Map Change; and

(2) Documentation supporting issuance and denial of permits, Elevation Certificates, documentation of the elevation (in relation to the datum on the FIRM) to which structures have been floodproofed, other required design certifications, variances, and records of enforcement actions taken to correct violations of these regulations.

(L) Enforce the provisions of these regulations, investigate violations, issue notices of violations or stop work orders, and require permit holders to take corrective action.

(M) Advise the Board of Zoning Appeals regarding the intent of these regulations and, for each application for a variance, prepare a staff report and recommendation.

(N) Administer the requirements related to proposed work on existing buildings:

- 1) Make determinations as to whether buildings and structures that are located in flood hazard areas and that are damaged by any cause have been substantially damaged.

- (2) Make reasonable efforts to notify owners of substantially damaged structures of the need to obtain a permit to repair, rehabilitate, or reconstruct, and prohibit the non-compliant repair of substantially damaged buildings except for temporary emergency protective measures necessary to secure a property or stabilize a building or structure to prevent additional damage.

(O) Undertake, as determined appropriate by the Floodplain Administrator due to the circumstances, other actions which may include but are not limited to: issuing press releases, public service announcements, and other public information materials related to permit requests and repair of damaged structures; coordinating with other Federal, State, and local agencies to assist with substantial damage determinations; providing owners of damaged structures information related to the proper repair of damaged structures in special flood hazard areas; and assisting property owners with documentation necessary to file claims for Increased Cost of Compliance coverage under NFIP flood insurance policies.

(P) Notify the Federal Emergency Management Agency when the corporate boundaries of the (community) have been modified and:

- (1) Provide a map that clearly delineates the new corporate boundaries or the new area for which the authority to regulate pursuant to these regulations has either been assumed or relinquished through annexation; and

- (2) If the FIRM for any annexed area includes special flood hazard areas that have flood zones that have regulatory requirements that are not set forth in these regulations, prepare amendments to these regulations to adopt the FIRM and appropriate requirements, and submit the amendments to the governing body for adoption; such adoption shall take place at the same time as or prior to the date of annexation and a copy of the amended regulations shall be provided to Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management) and FEMA.

(Q) Upon the request of FEMA, complete and submit a report concerning participation in the NFIP which may request information regarding the number of buildings in the SFHA, number of permits issued for development in the SFHA, and number of variances issued for development in the SFHA.

(R) It is the duty of the Community Floodplain Administrator to take into account flood, mudslide and flood-related erosion hazards, to the extent that they are known, in all official actions relating to land management and use throughout the entire jurisdictional area of the Community, whether or not those hazards have been specifically delineated geographically (e.g. via mapping or surveying).

Section 2.3 - Use and Interpretation of FIRMs [44 CFR 60.3]

The Floodplain Administrator shall make interpretations, where needed, as to the exact location of special flood hazard areas, floodplain boundaries, and floodway boundaries. The following shall apply to the use and interpretation of FIRMs and data:

- (A) Where field surveyed topography indicates that adjacent ground elevations:
 - (1) Are below the base flood elevation, even in areas not delineated as a special flood hazard area on a FIRM, the area shall be considered as special flood hazard area and subject to the requirements of these regulations;
 - (2) Are above the base flood elevation, the area shall be regulated as special flood hazard area unless the applicant obtains a Letter of Map Change that removes the area from the SFHA.
- (B) In FEMA-identified special flood hazard areas where base flood elevation and floodway data have not been identified and in areas where FEMA has not identified SFHAs, any other flood hazard data available from a Federal, State, or other source shall be reviewed and reasonably used.
- (C) Base flood elevations and designated floodway boundaries on FIRMs and in FISs shall take precedence over base flood elevations and floodway boundaries by any other sources if such sources show reduced floodway widths and/or lower base flood elevations.
- (D) Other sources of data shall be reasonably used if such sources show increased base flood elevations and/or larger floodway areas than are shown on FIRMs and in FISs.
- (E) If a Preliminary Flood Insurance Rate Map and/or a Preliminary Flood Insurance Study has been provided by FEMA:
 - (1) Upon the issuance of a Letter of Final Determination by FEMA, the preliminary flood hazard data shall be used and shall replace the flood hazard data previously provided from FEMA for the purposes of administering these regulations.
 - (2) Prior to the issuance of a Letter of Final Determination by FEMA, the use of preliminary flood hazard data shall be deemed the best available data pursuant to Section 3.1.A.3. and used where no base flood elevations and/or floodway areas are provided on the effective FIRM.
 - (3) Prior to issuance of a Letter of Final Determination by FEMA, the use of preliminary flood hazard data is permitted where the preliminary base flood elevations or floodway areas exceed the base flood elevations and/or designated

floodway widths in existing flood hazard data provided by FEMA. Such preliminary data may be subject to change and/or appeal to FEMA.

Section 2.4 - Jurisdictional Boundary Changes [44 CFR 59.22, 65.3]

The County floodplain ordinance in effect on the date of annexation shall remain in effect and shall be enforced by the municipality for all annexed areas until the municipality adopts and enforces an ordinance which meets the requirements for participation in the National Flood Insurance Program. Municipalities with existing floodplain ordinances shall pass a resolution acknowledging and accepting responsibility for enforcing floodplain ordinance standards prior to annexation of any area containing identified flood hazards. If the FIRM for any annexed area includes special flood hazard areas that have flood zones that have regulatory requirements that are not set forth in these regulations, prepare amendments to these regulations to adopt the FIRM and appropriate requirements, and submit the amendments to the governing body for adoption; such adoption shall take place at the same time as or prior to the date of annexation and a copy of the amended regulations shall be provided to Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management) and FEMA.

In accordance with the Code of Federal Regulations, Title 44 Subpart (B) Section 59.22 (a) (9) (v) all NFIP participating communities must notify the Federal Insurance Administration and optionally the State Coordinating Office in writing whenever the boundaries of the community have been modified by annexation or the community has otherwise assumed or no longer has authority to adopt and enforce floodplain management regulations for a particular area.

In order that all Flood Insurance Rate Maps accurately represent the community's boundaries, a copy of a map of the community suitable for reproduction, clearly delineating the new corporate limits or new area for which the community has assumed or relinquished floodplain management regulatory authority must be included with the notification.

Section 2.5 - District Boundary Changes

The delineation of any of the Floodplain Districts may be revised by the {community} where natural or man-made changes have occurred and/or where more detailed studies have been conducted or undertaken by the U. S. Army Corps of Engineers or other qualified agency, or an individual documents the need for such change. However, prior to any such change, approval must be obtained from the Federal Emergency Management Agency.

Section 2.6 - Interpretation of District Boundaries

Initial interpretations of the boundaries of the Floodplain Districts shall be made by the Zoning Officer. Should a dispute arise concerning the boundaries of any of the Districts, the Board of Zoning Appeals shall make the necessary determination. The person questioning or contesting the location of the District boundary shall be given a reasonable opportunity to present his case to the Board and to submit his own technical evidence if he so desires.

Section 2.7 – Submitting Technical Data [44 CFR 65.3]

A community's base flood elevations may increase or decrease resulting from physical changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information becomes available, a community shall notify the Federal Emergency Management Agency of the changes by submitting technical or scientific data. Such a submission is necessary so that upon confirmation of those physical changes affecting flooding conditions, risk premium rates and flood plain management requirements will be based upon current data.

Section 2.8 – Letters of Map Revision

When development in the floodplain will cause or causes a change in the base flood elevation, the applicant, including state agencies, must notify FEMA by applying for a Conditional Letter of Map Revision and then a Letter of Map Revision.

Example cases:

- Any development that causes a rise in the base flood elevations within the floodway.
- Any development occurring in Zones A1-30 and AE without a designated floodway, which will cause a rise of more than one foot in the base flood elevation.
- Alteration or relocation of a stream (including but not limited to installing culverts and bridges) 44 *Code of Federal Regulations* §65.3 and §65.6(a)(12)

ARTICLE III - ESTABLISHMENT OF ZONING DISTRICTS

Section 3.1 - Description of Special Flood Hazard Districts [44 CFR 59.1, 60.3]

A. Basis of Districts

The various special flood hazard districts shall include the SFHAs. The basis for the delineation of these districts shall be the FIS and the FIRM for {community} prepared by the Federal Emergency Management Agency, Federal Insurance Administration, dated _____, and any subsequent revisions or amendments thereto.

The (Community) may identify and regulate local flood hazard or ponding areas that are not delineated on the FIRM. These areas may be delineated on a "Local Flood Hazard Map" using best available topographic data and locally derived information such as flood of record, historic high water marks or approximate study methodologies.

The boundaries of the SFHA Districts are established as shown on the FIRM which is declared to be a part of this ordinance and which shall be kept on file at the {community} offices.

1. The **Floodway District** is in an **AE Zone** and is delineated, for purposes of this ordinance, using the criterion that certain areas within the floodplain must be capable of carrying the waters of the one percent annual chance flood without increasing the water surface elevation of that flood more than one (1) foot at any point. The areas included in this District are specifically defined in Table ____ of the above-referenced FIS and shown on the accompanying FIRM.

The following provisions shall apply within the Floodway District of an AE zone [44 CFR 60.3(d)]:

- a. Within any floodway area, no encroachments, including fill, new construction, substantial improvements, or other development shall be permitted unless it has been demonstrated through hydrologic and hydraulic analysis performed in accordance with standard engineering practice that the proposed encroachment will not result in any increase in flood levels within the community during the occurrence of the base flood discharge. Hydrologic and hydraulic analyses shall be undertaken only by professional engineers or others of demonstrated qualifications, who shall certify that the technical methods used correctly reflect currently-accepted technical concepts. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough review by the Floodplain Administrator.

Development activities which increase the water surface elevation of the base flood may be allowed, provided that the applicant first applies – with the {community's} endorsement – for a Conditional Letter of Map Revision (CLOMR), and receives the approval of the Federal Emergency Management Agency.

If Article III Section 3.1 A 1 a is satisfied, all new construction and substantial

improvements shall comply with all applicable flood hazard reduction provisions of Article 4.

b. The placement of manufactured homes (mobile homes) is prohibited, except in an existing manufactured home (mobile home) park or subdivision. A replacement manufactured home may be placed on a lot in an existing manufactured home park or subdivision provided the anchoring, elevation, and encroachment standards are met.

2. The **AE, or AH Zones** on the FIRM accompanying the FIS shall be those areas for which one-percent annual chance flood elevations have been provided and the floodway has **not** been delineated. The following provisions shall apply within an AE or AH zone [44 CFR 60.3(c)]*:

Until a regulatory floodway is designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within the areas of special flood hazard, designated as Zones A1-30 and AE or AH on the FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the {community}.

Development activities in Zones A1-30 and AE or AH, on the {community's} FIRM which increase the water surface elevation of the base flood by more than one foot may be allowed, provided that the applicant first applies – with the {community's} endorsement – for a Conditional Letter of Map Revision, and receives the approval of the Federal Emergency Management Agency.

* The requirement in 63.3(c)(10) only applies along rivers, streams, and other watercourses where FEMA has provided base flood elevations. The requirement does not apply along lakes, bays and estuaries, and the ocean coast.

3. The **A Zone** on the FIRM accompanying the FIS shall be those areas for which no detailed flood profiles or elevations are provided, but the one percent annual chance floodplain boundary has been approximated. For these areas, the following provisions shall apply [44 CFR 60.3(b)]:

The Approximated Floodplain District shall be that floodplain area for which no detailed flood profiles or elevations are provided, but where a one hundred (100)-year floodplain boundary has been approximated. Such areas are shown as Zone A on the maps accompanying the FIS. For these areas, the base flood elevations and floodway information from federal, state, and other acceptable sources shall be used, when available. Where the specific one percent annual chance flood elevation cannot be determined for this area using other sources of data, such as the U. S. Army Corps of Engineers Floodplain Information Reports, U. S. Geological Survey Flood-Prone Quadrangles, etc., then the applicant for the proposed use, development and/or activity shall determine this base flood elevation. For development proposed in the

approximate floodplain the applicant must use technical methods that correctly reflect currently accepted non-detailed technical concepts, such as point on boundary, high water marks, or detailed methodologies hydrologic and hydraulic analyses. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough review by the Floodplain Administrator.

The Floodplain Administrator reserves the right to require a hydrologic and hydraulic analysis for any development. When such base flood elevation data is utilized, the lowest floor shall be elevated to or above the base flood level (recommend \geq one foot).

During the permitting process, the Floodplain Administrator shall obtain:

- 1) The elevation of the lowest floor (including the basement) of all new and substantially improved structures; and,
- 2) if the structure has been flood-proofed in accordance with the requirements of this article, the elevation (in relation to mean sea level) to which the structure has been flood-proofed.

Base flood elevation data shall be obtained from other sources or developed using detailed methodologies comparable to those contained in a FIS for subdivision proposals and other proposed development proposals (including manufactured home parks and subdivisions) that exceed fifty lots or five acres, whichever is the lesser.

4. The **AO Zone** on the FIRM accompanying the FIS shall be those areas of shallow flooding identified as AO on the FIRM. For these areas, the following provisions shall apply [44 CFR 60.3(c)]:
 - a. All new construction and substantial improvements of residential structures shall have the lowest floor, including basement, elevated to or above the flood depth specified on the FIRM, above the highest adjacent grade at least as high as the depth number specified in feet on the FIRM. If no flood depth number is specified, the lowest floor, including basement, shall be elevated no less than two feet above the highest adjacent grade.
 - b. All new construction and substantial improvements of non-residential structures shall
 - 1) have the lowest floor, including basement, elevated to or above the flood depth specified on the FIRM, above the highest adjacent grade at least as high as the depth number specified in feet on the FIRM. If no flood depth number is specified, the lowest floor, including basement, shall be elevated at least two feet above the highest adjacent grade; or,
 - 2) together with attendant utility and sanitary facilities be completely flood-

proofed to the specified flood level so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.

- c. Adequate drainage paths around structures on slopes shall be provided to guide floodwaters around and away from proposed structures.
5. The **Coastal A Zone** shall be those areas, as defined by the VA USBC, that are subject to wave heights between 1.5 feet and 3 feet, and identified on the FIRM by the **Limit of Moderate Wave Action (LiMWA)** line. For these areas, the following provisions shall apply:

Buildings and structures within this zone shall have the lowest floor elevated to or above the base flood elevation plus one foot of freeboard, and must comply with the provisions in Article III, Section 3.1 A 2 and Article IV, Sections 4.2 and 4.3.

6. The **VE or V Zones** on FIRMs accompanying the FIS shall be those areas that are known as Coastal High Hazard areas, extending from offshore to the inland limit of a primary frontal dune along an open coast. For these areas, the following provisions shall apply [44 CFR 60.3(e)]:
 - a. All new construction and substantial improvements in Zones V and VE (V if base flood elevation is available) shall be elevated on pilings or columns so that:
 - 1) The bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated to or above the base flood level (recommend \geq one foot) if the lowest horizontal structural member is parallel to the direction of wave approach or elevated at least one foot above the base flood level if the lowest horizontal structural member is perpendicular to the direction of wave approach; and,
 - 2) The pile or column foundation and structure attached thereto is anchored to resist flotation, collapse, and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Wind and water loading values shall each have a one percent chance of being equaled or exceeded in any given year (one-percent annual chance).
 - b. A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction, and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of Article III, Section A 6 a.
 - c. The Floodplain Administrator shall obtain the elevation (in relation to mean sea level) of the bottom of the lowest horizontal structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures

in Zones V and VE. The Floodplain Management Administrator shall maintain a record of all such information.

- d. All new construction shall be located landward of the reach of mean high tide.
- e. All new construction and substantial improvements shall have the space below the lowest floor either free of obstruction or constructed with nonsupporting breakaway walls, open wood-lattice work, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system. For the purpose of this section, a breakaway wall shall have a design safe loading resistance of not less than 10 and no more than 20 pounds per square foot. Use of breakaway walls which exceed a design safe loading resistance of 20 pounds per square foot (either by design or when so required by local codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed meet the following conditions:
 - 1) Breakaway wall collapse shall result from water load less than that which would occur during the base flood; and
 - 2) The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and nonstructural). Maximum wind and water loading values to be used in this determination shall each have a one percent chance of being equaled or exceeded in any five year.
- f. The enclosed space below the lowest floor shall be used solely for parking of vehicles, building access, or storage. Such space shall not be partitioned into multiple rooms, temperature-controlled, or used for human habitation.
- g. The use of fill for structural support of buildings is prohibited. When non-structural fill is proposed in a coastal high hazard area, appropriate engineering analyses shall be conducted to evaluate the impacts of the fill prior to issuance of a development permit.
- h. The man-made alteration of sand dunes, which would increase potential flood damage, is prohibited.

Section 3.2 - Overlay Concept

The Floodplain Districts described above shall be overlays to the existing underlying districts as shown on the Official Zoning Ordinance Map, and as such, the provisions for the floodplain districts shall serve as a supplement to the underlying district provisions.

If there is any conflict between the provisions or requirements of the Floodplain Districts and

those of any underlying district, the more restrictive provisions and/or those pertaining to the floodplain districts shall apply.

In the event any provision concerning a Floodplain District is declared inapplicable as a result of any legislative or administrative actions or judicial decision, the basic underlying provisions shall remain applicable.

ARTICLE IV - DISTRICT PROVISIONS [44 CFR 59.22, 60.2, 60.3]

Section 4.1 – Permit and Application Requirements

A. Permit Requirement

All uses, activities, and development occurring within any floodplain district, including placement of manufactured homes, shall be undertaken only upon the issuance of a zoning permit. Such development shall be undertaken only in strict compliance with the provisions of this Ordinance and with all other applicable codes and ordinances, as amended, such as the Virginia Uniform Statewide Building Code (VA USBC) and the {community} Subdivision Regulations. Prior to the issuance of any such permit, the Floodplain Administrator shall require all applications to include compliance with all applicable state and federal laws and shall review all sites to assure they are reasonably safe from flooding. Under no circumstances shall any use, activity, and/or development adversely affect the capacity of the channels or floodways of any watercourse, drainage ditch, or any other drainage facility or system.

B. Site Plans and Permit Applications

All applications for development within any floodplain district and all building permits issued for the floodplain shall incorporate the following information:

1. The elevation of the Base Flood at the site.
2. The elevation of the lowest floor (including basement) or, in V zones, the lowest horizontal structural member.
3. For structures to be flood-proofed (non-residential only), the elevation to which the structure will be flood-proofed.
4. Topographic information showing existing and proposed ground elevations.

Section 4.2 - General Standards

The following provisions shall apply to all permits:

- A. New construction and substantial improvements shall be according to Section 3.1 of this ordinance and the VA USBC, and anchored to prevent flotation, collapse or lateral movement of the structure.

- B. Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This standard shall be in addition to and consistent with applicable state anchoring requirements for resisting wind forces.
- C. New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
- D. New construction or substantial improvements shall be constructed by methods and practices that minimize flood damage.
- E. Electrical, heating, ventilation, plumbing, air conditioning equipment and other service facilities, including duct work, shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
- F. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.
- G. 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.
- H. On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.

In addition to provisions A – H above, in all special flood hazard areas, the additional provisions shall apply:

- I. Prior to any proposed alteration or relocation of any channels or of any watercourse, stream, etc., within this jurisdiction a permit shall be obtained from the U. S. Corps of Engineers, the Virginia Department of Environmental Quality, and the Virginia Marine Resources Commission (a joint permit application is available from any of these organizations). Furthermore, in riverine areas, notification of the proposal shall be given by the applicant to all affected adjacent jurisdictions, the Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management), other required agencies, and the Federal Emergency Management Agency.
- J. The flood carrying capacity within an altered or relocated portion of any watercourse shall be maintained.

Section 4.3 - Elevation and Construction Standards [44 CFR 60.3]

In all identified flood hazard areas where base flood elevations have been provided in the FIS or generated by a certified professional in accordance with Section 3.1 A 3, the following provisions shall apply:

A. Residential Construction

New construction or substantial improvement of any residential structure (including manufactured homes) in Zones A1-30, AE, AH and A with detailed base flood elevations shall have the lowest floor, including basement, elevated to or above (recommend \geq one foot) the base flood level. See Section 3.1.5 and Section 3.1.6 for requirements in the Coastal A and VE zones.

B. Non-Residential Construction

New construction or substantial improvement of any commercial, industrial, or non-residential building (or manufactured home) shall have the lowest floor, including basement, elevated to or above the base flood level (recommend \geq one foot). See Section 3.1.5 and Section 3.1.6 for requirements in the Coastal A and VE zones. Non-residential buildings located in all A1-30, AE, and AH zones may be flood-proofed in lieu of being elevated provided that all areas of the building components below the elevation corresponding to the BFE plus one foot are water tight with walls substantially impermeable to the passage of water, and use structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the standards of this subsection are satisfied. Such certification, including the specific elevation (in relation to mean sea level) to which such structures are floodproofed, shall be maintained by (title of community administrator).

C. Space Below the Lowest Floor

In zones A, AE, AH, AO, and A1-A30, fully enclosed areas, of new construction or substantially improved structures, which are below the regulatory flood protection elevation shall:

1. not be designed or used for human habitation, but shall only be used for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment (standard exterior door), or entry to the living area (stairway or elevator).
2. be constructed entirely of flood resistant materials below the regulatory flood protection elevation;
3. include measures to automatically equalize hydrostatic flood forces on walls by

allowing for the entry and exit of floodwaters. To meet this requirement, the openings must either be certified by a professional engineer or architect or meet the following minimum design criteria:

- a. Provide a minimum of two openings on different sides of each enclosed area subject to flooding.
- b. The total net area of all openings must be at least one (1) square inch for each square foot of enclosed area subject to flooding.
- c. If a building has more than one enclosed area, each area must have openings to allow floodwaters to automatically enter and exit.
- d. The bottom of all required openings shall be no higher than one (1) foot above the adjacent grade.
- e. Openings may be equipped with screens, louvers, or other opening coverings or devices, provided they permit the automatic flow of floodwaters in both directions.
- f. Foundation enclosures made of flexible skirting are not considered enclosures for regulatory purposes, and, therefore, do not require openings. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires openings as outlined above.

D. Standards for Manufactured Homes and Recreational Vehicles

1. All manufactured homes placed, or substantially improved, on individual lots or parcels, must meet all the requirements for new construction, including the elevation and anchoring requirements in Article 4, section 4.2 and section 4.3.
2. All recreational vehicles placed on sites must either
 - a. be on the site for fewer than 180 consecutive days, be fully licensed and ready for highway use (a recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices and has no permanently attached additions); or
 - b. meet all the requirements for manufactured homes in Article 4.3(D)(1).

Section 4.4 - Standards for Subdivision Proposals

- A. All subdivision proposals shall be consistent with the need to minimize flood damage;
- B. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage;

- C. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards, and
- D. Base flood elevation data shall be obtained from other sources or developed using detailed methodologies, hydraulic and hydrologic analysis, comparable to those contained in a Flood Insurance Study for subdivision proposals and other proposed development proposals (including manufactured home parks and subdivisions) that exceed fifty lots or five acres, whichever is the lesser.

ARTICLE V – EXISTING STRUCTURES IN FLOODPLAIN AREAS

A structure or use of a structure or premises which lawfully existed before the enactment of these provisions, but which is not in conformity with these provisions, may be continued subject to the following conditions:

- A. Existing structures in the Floodway Area shall not be expanded or enlarged unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practices that the proposed expansion would not result in any increase in the base flood elevation.
- B. Any modification, alteration, repair, reconstruction, or improvement of any kind to a structure and/or use located in any floodplain areas to an extent or amount of less than fifty (50) percent of its market value shall conform to the VA USBC and the appropriate provisions of this ordinance.
- C. The modification, alteration, repair, reconstruction, or improvement of any kind to a structure and/or use, regardless of its location in a floodplain area to an extent or amount of fifty (50) percent or more of its market value shall be undertaken only in full compliance with this ordinance and shall require the entire structure to conform to the VA USBC.

ARTICLE VI - VARIANCES: FACTORS TO BE CONSIDERED [44 CFR 60.6]

Variances shall be issued only upon (i) a showing of good and sufficient cause, (ii) after the Board of Zoning Appeals has determined that failure to grant the variance would result in exceptional hardship to the applicant, and (iii) after the Board of Zoning Appeals has determined that the granting of such variance will not result in (a) unacceptable or prohibited increases in flood heights, (b) additional threats to public safety, (c) extraordinary public expense; and will

not (d) create nuisances, (e) cause fraud or victimization of the public, or (f) conflict with local laws or ordinances.

While the granting of variances generally is limited to a lot size less than one-half acre, deviations from that limitation may occur. However, as the lot size increases beyond one-half acre, the technical justification required for issuing a variance increases. Variances may be issued by the Board of Zoning Appeals for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, in conformance with the provisions of this section.

Variances may be issued for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that the criteria of this section are met, and the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

In passing upon applications for variances, the Board of Zoning Appeals shall satisfy all relevant factors and procedures specified in other sections of the zoning ordinance and consider the following additional factors:

- A. The danger to life and property due to increased flood heights or velocities caused by encroachments. No variance shall be granted for any proposed use, development, or activity within any Floodway District that will cause any increase in the one percent (1%) chance flood elevation.
- B. The danger that materials may be swept on to other lands or downstream to the injury of others.
- C. The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination, and unsanitary conditions.
- D. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owners.
- E. The importance of the services provided by the proposed facility to the community.
- F. The requirements of the facility for a waterfront location.
- G. The availability of alternative locations not subject to flooding for the proposed use.
- H. The compatibility of the proposed use with existing development and development anticipated in the foreseeable future.
- I. The relationship of the proposed use to the comprehensive plan and floodplain management program for the area.

- J. The safety of access by ordinary and emergency vehicles to the property in time of flood.
- K. The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters expected at the site.
- L. The historic nature of a structure. Variances for repair or rehabilitation of historic structures may be granted upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.
- M. Such other factors which are relevant to the purposes of this ordinance.

The Board of Zoning Appeals may refer any application and accompanying documentation pertaining to any request for a variance to any engineer or other qualified person or agency for technical assistance in evaluating the proposed project in relation to flood heights and velocities, and the adequacy of the plans for flood protection and other related matters.

Variances shall be issued only after the Board of Zoning Appeals has determined that the granting of such will not result in (a) unacceptable or prohibited increases in flood heights, (b) additional threats to public safety, (c) extraordinary public expense; and will not (d) create nuisances, (e) cause fraud or victimization of the public, or (f) conflict with local laws or ordinances.

Variances shall be issued only after the Board of Zoning Appeals has determined that the variance will be the minimum required to provide relief.

The Board of Zoning Appeals shall notify the applicant for a variance, in writing that the issuance of a variance to construct a structure below the one percent (1%) chance flood elevation (a) increases the risks to life and property and (b) will result in increased premium rates for flood insurance.

A record shall be maintained of the above notification as well as all variance actions, including justification for the issuance of the variances. Any variances that are issued shall be noted in the annual or biennial report submitted to the Federal Insurance Administrator.

GLOSSARY [44 CFR 59.1]

- A. Appurtenant or accessory structure - Accessory structures not to exceed 200 sq. ft.
- B. Base flood - The flood having a one percent chance of being equaled or exceeded in any given year.
- C. Base flood elevation - The water surface elevations of the base flood, that is, the flood level that has a one percent or greater chance of occurrence in any given year. The water surface elevation of the base flood in relation to the datum specified on the community's Flood Insurance Rate Map. For the purposes of this ordinance, the base flood is the 1% annual chance flood.
- D. Basement - Any area of the building having its floor sub-grade (below ground level) on all sides.
- E. Board of Zoning Appeals - The board appointed to review appeals made by individuals with regard to decisions of the Zoning Administrator in the interpretation of this ordinance.
- F. Coastal A Zone - Flood hazard areas that have been delineated as subject to wave heights between 1.5 feet and 3 feet.
- G. Development - Any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.
- H. Elevated building - A non-basement building built to have the lowest floor elevated above the ground level by means of solid foundation perimeter walls, pilings, or columns (posts and piers).
- I. Encroachment - The advance or infringement of uses, plant growth, fill, excavation, buildings, permanent structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.
- J. Existing construction - structures for which the "start of construction" commenced before the effective date of the FIRM or before January 1, 1975 for FIRMs effective before that date. "Existing construction" may also be referred to as "existing structures."
- K. Flood or flooding -
 - 1. A general or temporary condition of partial or complete inundation of normally dry land areas from
 - a. the overflow of inland or tidal waters; or,
 - b. the unusual and rapid accumulation or runoff of surface waters from any source.
 - c. mudflows which are proximately caused by flooding as defined in paragraph (1)(b) of this definition and are akin to a river of liquid and flowing mud on the

surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.

2. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in paragraph 1 (a) of this definition.
- L. Flood Insurance Rate Map (FIRM) - an official map of a community, on which the Federal Emergency Management Agency has delineated both the special hazard areas and the risk premium zones applicable to the community. A FIRM that has been made available digitally is called a Digital Flood Insurance Rate Map (DFIRM).
- M. Flood Insurance Study (FIS) – a report by FEMA that examines, evaluates and determines flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudflow and/or flood-related erosion hazards.
- N. Floodplain or flood-prone area - Any land area susceptible to being inundated by water from any source.
- O. Flood proofing - any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.
- P. Floodway - The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.
- Q. Freeboard - A factor of safety usually expressed in feet above a flood level for purposes of floodplain management. “Freeboard” tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization in the watershed.
- R. Highest adjacent grade - the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.
- S. Historic structure - Any structure that is
1. listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
 2. certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily

- determined by the Secretary to qualify as a registered historic district;
- 3. individually listed on a state inventory of historic places in 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 in 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.
- T. Hydrologic and Hydraulic Engineering Analysis – Analyses performed by a *licensed* professional engineer, in accordance with standard engineering practices that are accepted by the Virginia Department of Conservation and Recreation and FEMA, used to determine the *base flood*, other frequency floods, *flood* elevations, *floodway* information and boundaries, and *flood* profiles.
- U. Letters of Map Change (LOMC) - A Letter of Map Change is an official FEMA determination, by letter, that amends or revises an effective *Flood Insurance Rate Map* or *Flood Insurance Study*. Letters of Map Change include:
 - Letter of Map Amendment (LOMA): An amendment based on technical data showing that a property was incorrectly included in a designated *special flood hazard area*. A LOMA amends the current effective *Flood Insurance Rate Map* and establishes that a Land as defined by meets and bounds or *structure* is not located in a *special flood hazard area*.
 - Letter of Map Revision (LOMR): A revision based on technical data that may show changes to *flood zones*, *flood* elevations, *floodplain* and *floodway* delineations, and planimetric features. A Letter of Map Revision Based on Fill (LOMR-F), is a determination that a *structure* or parcel of land has been elevated by fill above the *base flood elevation* and is, therefore, no longer exposed to *flooding* associated with the *base flood*. In order to qualify for this determination, the fill must have been permitted and placed in accordance with the *community's* floodplain management regulations.
 - Conditional Letter of Map Revision (CLOMR): A formal review and comment as to whether a proposed *flood* protection project or other project complies with the minimum NFIP requirements for such projects with respect to delineation of *special flood hazard areas*. A CLOMR does not revise the effective *Flood Insurance Rate Map* or *Flood Insurance Study*.
- V. Lowest adjacent grade - the lowest natural elevation of the ground surface next to the walls of a structure.
- W. Lowest floor - 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 the applicable non-elevation design requirements of Federal Code 44CFR

§60.3.

- X. Manufactured home - A structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For floodplain management purposes the term “manufactured home” also includes park trailers, travel trailers, and other similar vehicles placed on a site for greater than 180 consecutive days.
- Y. Manufactured home park or subdivision - a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.
- Z. Mean Sea Level - is an elevation point that represents the average height of the ocean's surface (such as the halfway point between the mean high tide and the mean low tide) which is used as a standard in reckoning land elevation.
- AA. New construction - For the purposes of determining insurance rates, structures for which the “start of construction” commenced on or after _____ [{insert the effective date of the community’s initial Flood Insurance Rate Map} or after December 31, 1974, whichever is later], and includes any subsequent improvements to such structures. For floodplain management purposes, *new construction* means structures for which the *start of construction* commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.
- BB. Post-FIRM structures - A structure for which construction or substantial improvement occurred after December 31, 1974 or on or after _____ {insert the effective date of the community’s initial Flood Insurance Rate Map} whichever is later.
- CC. Pre-FIRM structures - A structure for which construction or substantial improvement occurred on or before December 31, 1974 or before _____ {insert the effective date of the community’s initial Flood Insurance Rate Map}.
- DD. Primary frontal dune - a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes immediately landward and adjacent to the beach and subject to erosion and overtopping from high tides and waves during major coastal storms. The inland limit of the primary frontal dune occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.
- EE. Recreational vehicle - A vehicle which is
1. built on a single chassis;
 2. 400 square feet or less when measured at the largest horizontal projection;
 3. designed to be self-propelled or permanently towable by a light duty truck; and,
 4. designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational camping, travel, or seasonal use.
- FF. Repetitive Loss Structure – A building covered by a contract for flood insurance that has

incurred flood-related damages on two occasions, in which the cost of the repair, on the average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event; and at the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage.

- GG. Severe repetitive loss structure - a structure that: (a) Is covered under a contract for flood insurance made available under the NFIP; and (b) Has incurred flood related damage – (i) For which 4 or more separate claims payments have been made under flood insurance coverage with the amount of each such claim exceeding \$5,000, and with the cumulative amount of such claims payments exceeding \$20,000; or (ii) For which at least 2 separate claims payments have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure.
- HH. Shallow flooding area – A special flood hazard area with base flood depths from 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.
- II. Special flood hazard area - The land in the floodplain subject to a one (1%) percent or greater chance of being flooded in any given year as determined in Article 3, Section 3.1 of this ordinance.
- JJ. Start of construction - For other than new construction and substantial improvement, under the Coastal Barriers Resource Act (P.L. – 97-348), means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, substantial improvement or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab 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 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 not part of the main structure. For a substantial improvement, the actual start of the construction means 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.
- KK. Structure - for floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.
- LL. Substantial damage - Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.
- MM. Substantial improvement - Any reconstruction, rehabilitation, addition, or other

improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the *start of construction* of the improvement. This term includes structures which have incurred *repetitive loss* or *substantial damage* regardless of the actual repair work performed. The term does not, however, include either:

1. any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or
2. any alteration of a *historic structure*, provided that the alteration will not preclude the structure's continued designation as a *historic structure*.
3. Historic structures undergoing repair or rehabilitation that would constitute a substantial improvement as defined above, must comply with all ordinance requirements that do not preclude the structure's continued designation as a historic structure. Documentation that a specific ordinance requirement will cause removal of the structure from the National Register of Historic Places or the State Inventory of Historic places must be obtained from the Secretary of the Interior or the State Historic Preservation Officer. Any exemption from ordinance requirements will be the minimum necessary to preserve the historic character and design of the structure.

NN. Violation - the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in Section 3.7 B11, Section 4.3 B, Section 4.4 A, Section 4.5, and section 4.8 is presumed to be in violation until such time as that documentation is provided.

OO. Watercourse - A lake, river, creek, stream, wash, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

From: Ghalayini, Nabil (DCR)
Sent: Thursday, April 24, 2014 3:44 PM
To: Edwards, Tony; Brodhead, Read
Subject: NFIP Community Assistance Visit (CAV)

Tony /Read:

A copy of the NFIP CAV report is attached for you records.

As indicated in the report, the City must continue to pursue a remedy to the violation at 1150 River Road as indicated in the attached March 20, 2014 letter.

The City must also revise its floodplain regulations consistent with the current Virginia Model Floodplain Ordinance (copy of March 2014 version attached.)

Please provide a polished draft of the revised floodplain regulations for DCR review by July 25, 2014, prior to adoption. If this timeline is not feasible, please let me know ASAP.

Thanks

Nabil

Nabil Ghalayini, P.E., PMP, D.WRE, CFM
Floodplain Program Engineer
Dam Safety and Floodplain Management
Department of Conservation and Recreation
600 East Main Street, 24th Floor
Richmond, VA 23219
804-514-3884 (M)



CITY OF CHARLOTTESVILLE
DEPARTMENT OF NEIGHBORHOOD DEVELOPMENT SERVICES
STAFF REPORT



PLANNING COMMISSION REGULAR MEETING
DATE OF PLANNING COMMISSION MEETING: February 10, 2015

Project Planner: Heather Poole
Date of Staff Report: January 29, 2015
Applicant: Kroger Limited Partnership I
Applicant's Representative: Toby Locher
Current Property Owner: Kroger Limited Partnership I

Application Information

Property Street Address: 220 Zan Road
Tax Map/Parcel #: Tax Map 41B, Parcel 150, Tax Map 41C Parcel 31 (*Project Area* - 7.35 acres (320,166 SF), total; 203,425.20 SF existing impervious)
Total Area of Critical Slopes on Parcel: 2.26 acres (30.8%)
Area of Proposed Critical Slope Disturbance: (0.97 acres/ 42,253.20 SF)
Comprehensive Plan (Land Use Plan) Designation: Commercial
Current Zoning Classification: HW (Highway Corridor District)
Tax Status: The City Treasurer's office indicates that there are no delinquent taxes owed on the subject properties at the time of the writing of this staff report.

Application Details

Toby Locher, on behalf of Kroger Limited Partnership I, is requesting a waiver from Section 34-1120(b) of the City Code (Critical Slope Regulations) to allow for the expansion of the existing building found on Tax Map 41B, Parcel 150 (existing 53,076 SF formerly used as a Giant grocery store) into a 97,979 SF Kroger building as part of the existing Seminole Square Shopping Center. The proposed location of the Kroger is on the south eastern portion of the property, and will be connected to existing buildings found on Tax Map 41B, Parcels 152 and 153.

Existing critical slopes areas located on this Property include 2.26 acres/ 30.8 percent of the project site. The applicable definition of "critical slope" is as follows:

Any slope whose grade is 25% or greater, **and** (a) a portion of the slope has a horizontal run of greater than 20 feet, and its total area is 6,000 SF or greater, **and** (b) a portion of the slope is within 200 feet of a waterway. *See City Code Sec. 34-1120(b)(2).*

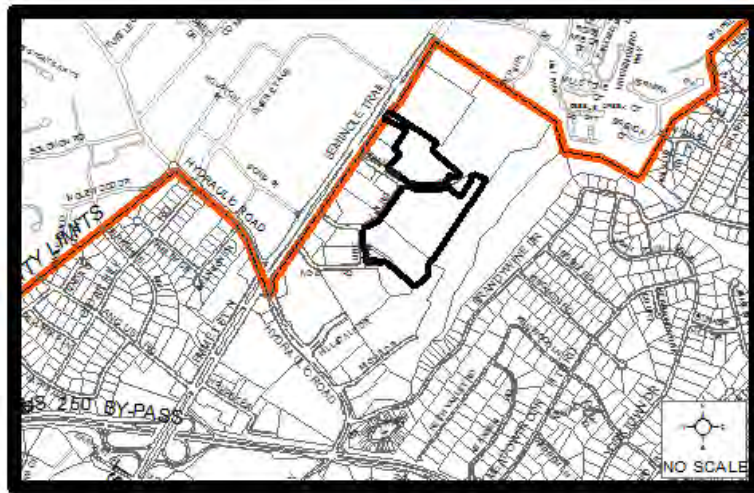
Based on the information presented within the application materials, Staff verifies that the area for which this waiver is sought meets all of the above-referenced components of the definition of “critical slope”. Attached is a diagram showing the details upon which this showing was made in the application.

The application materials also provide the following information relevant to your evaluation of this request:

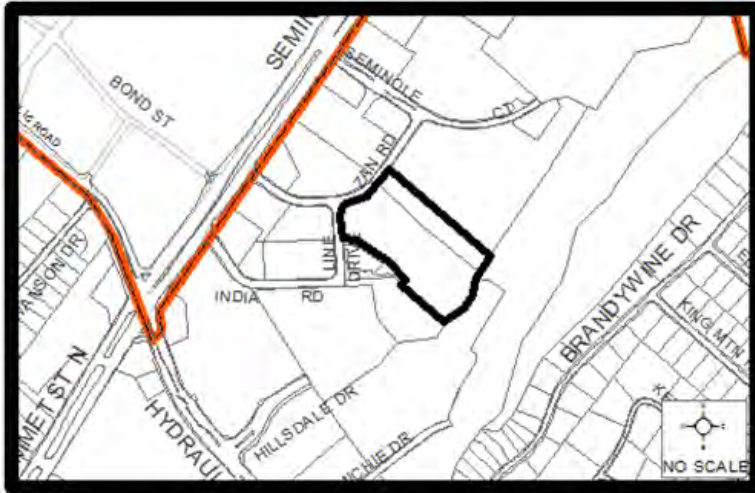
- Large stands of trees: **The applicant has noted trees existing on the manmade slopes, but intends to remove them and replace them with riprap. The applicant states the trees are starting to be covered by an invasive vine species.**
- Rock outcroppings: **None.**
- Slopes greater than 60%: **None.**
- Identification/ description of unusual topography or other physical conditions at the site: **None of the topographical features on the site are unusual.**
- Waterway within 200 feet: **Meadow Creek is within 200 feet of the critical slope area.**
- Location of other areas of the Property, outside Critical Slopes areas, that fit the definition of a “building site” and could accommodate this proposed development: **There are other areas of the property that appear to be suitable building sites. The applicant presents their justification as to why these sites were rejected under Finding #2 on page 6 of their application and summarized in this report.**

Vicinity Map

Seminole Square Shopping Center



Project Area



Standard of Review

A copy of Sec. 34-1120(b) (Critical Slopes Regulations) is attached for your reference. The provisions of Sec. 34-1120(b) must guide your analysis and recommendations.

It is the Planning Commission's ("PC") responsibility, when a waiver application has been filed, to review the application and make a recommendation to City Council as to whether or not the waiver should be granted based off the following:

- (i) The public benefits of allowing disturbance of a critical slope outweigh the public benefits of the undisturbed slope (public benefits include, but are not limited to, stormwater and erosion control that maintains the stability of the property and/or the quality of adjacent or environmentally sensitive areas; groundwater recharge; reduced stormwater velocity; minimization of impervious surfaces; and stabilization of otherwise unstable slopes); or
- (ii) Due to unusual size, topography, shape, location, or other unusual physical conditions, or existing development of a property, one (1) or more of these critical slopes provisions would effectively prohibit or unreasonably restrict the use, reuse or redevelopment of such property or would result in significant degradation of the site or adjacent properties.

If the recommendation is for City Council to grant the requested waiver, the PC may also make recommendations as to the following:

- Whether any specific features or areas within the proposed area of disturbance should remain undisturbed (for example: large stands of trees; rock outcroppings; slopes greater than 60%, etc.)?
- Whether there are any conditions that could be imposed by City Council that would mitigate any possible adverse impacts of the proposed disturbance?

Project Review / Analysis

The applicant shows the area of critical slopes that would be disturbed by the development along the southern edge of the property. The proposed Kroger building would take up an area previously developed as existing commercial buildings and paved parking area. The rear of the proposed building would extend beyond the current building's footprint into the critical slope area near the property line. The critical slope area proposed for disturbance is currently comprised of existing manmade fill slopes. The applicant wishes to use the area behind the proposed building for delivery and fire truck circulation. The proposed location for circulation is within the critical slope area where the applicant plans to remove portions of the manmade fill slopes.

Each applicant for a critical slopes waiver is required to articulate a justification for the waiver, and to address how the land disturbance, as proposed, will satisfy the purpose and intent of the Critical Slopes Regulations (as found within City Code Sec. 34-1120(b)(1), attached). If it wishes to grant a waiver, the City Council is required to make one of two specific findings: either (1) public [environmental] benefits of allowing disturbance of the critical slope outweigh the benefits afforded by the existing undisturbed slope, see City Code 34-1120(b)(6)(d.i), OR (2) due to unusual physical conditions or existing development of a site, the critical slopes restrictions would unreasonably limit the use or development of the property, see City Code 34-1120(b)(6)(d.ii.). The applicant has provided information in the attached critical slopes waiver application for each item discussed below.

Applicant's justification for Finding #1

Statement: The applicant states that the public benefits of the rehabilitation of the existing site outweigh the benefits of the undisturbed slope. The applicant provides the following specifics and provides explanation for these public benefits:

- **Stormwater and Erosion Control that maintains the stability of the property and/or the quality of adjacent or environmentally sensitive areas:** The subject property is part of the existing Seminole Square Shopping Center. The entire site (17.58 acres) including the proposed Kroger site (7.35 acres) currently drains to a central, city maintained, 60" reinforced concrete pipe (RCP) that outfalls at the rear of the buildings (southeastern side of the site) into a city-maintained stormwater pond. The applicant plans to remove the existing stormwater pond and replace it with a riprap lined plunge pool at the outfall of the 60" RCP. The riprap will serve both the Seminole Square shopping center and the adjacent city-owned parcel downgradient of the site that contains the Meadow Creek shoreline. The applicant states the existing stormwater pond is undersized and causes unnecessary pollutant loading. The applicant believes replacing the pond with the mentioned sediment and runoff control measures provides greater public benefit than leaving the slope undisturbed.
- **Groundwater Recharge:** In addition to the riprap plunge pool, the applicant plans to install an underground stormwater detention vault that will reduce runoff rates of the added impervious areas and water quality units that will reduce phosphorus to desired levels and aid in the removal of litter, total suspended solids and oils.

- **Reduced stormwater velocity:** The applicant states the proposed riprap plunge pool will help reduce the velocity of the stormwater leaving the 60” RCP storm sewer pipe.

Staff Analysis: Staff finds that the proposed stormwater control measures being applied to an area inclusive of the proposed site and adjacent property (city property that is downgradient to Seminole Square and shoreline of Meadow Creek) is a public benefit that outweighs leaving the slope undisturbed where the area is currently served by the city-maintained stormwater pond. It was at the request of the Engineering Staff that the applicant consider removing the pond in its entirety. While the pond serves its purpose to a degree, the pond’s size and functionality does not match the runoff it serves; the applicant’s retrofits would be more effective in supporting runoff from this site. A portion of proposed retrofits fall within a Conservation Easement held by the City and The Nature Conservancy. Staff and TNC have met and plan to coordinate with the applicant to ensure any work done within the conservation easement conforms to the objectives set forth in the deed and the overarching goal to promote, protect, and restore Meadow Creek.

Staff finds the invasive vine species argument for removing trees residing in the critical slope area unconvincing. The applicant provides no further detail about what the invasive species might be or how it affects the area as a whole. However, the removal of trees in order to install the stormwater and erosion control measures for the area is believed to outweigh the public benefit of leaving the trees/critical slope area undisturbed.

Applicant’s justification for Finding #2

Statement: The applicant states that by prohibiting the disturbance of critical slopes at the proposed site, the City will unreasonably restrict the use of the property, as the existing shape and size of the developed property prohibits the ability to use the site as desired for the new Kroger Grocery Store.

Staff Analysis: Staff does not agree with the argument presented. There are existing commercial buildings on site, and as such have already established a use of the property. The application of the ordinance will not result in significant degradation of the site, nor does it unreasonably restrict the use, reuse or redevelopment of the property. Staff’s review of the site suggests that there may exist one or more alternative “building sites” that are outside of the critical slope area that could accommodate a Kroger building.

Staff Recommendation

Staff believes the applicant’s proposed disturbance of critical slopes for the installation of stormwater utilities will improve the stability and quality of the site and is a public benefit that outweighs the benefit of leaving the slope undisturbed. Staff and TNC will continue to work with the applicant to ensure the final stormwater control measures consist of green stormwater elements and conform to the conservation easement. Staff believes the applicant does meet the criteria for a waiver of the critical slope ordinance and recommends approval of the waiver request subject to the following condition:

- The developer will provide all information necessary to The Nature Conservancy and will collaborate with the City and TNC to ensure any work done within the conservation

easement conforms to the objectives set forth in the deed and the overarching goal to promote, protect, and restore Meadow Creek.

Suggested Motions

1. “I move to recommend approval of the steep slope waiver for Tax Map 41B, Parcel 150 and Tax Map 41C Parcel 31, 220 Zan Road as requested, with no reservations or conditions, based on a finding that [*reference at least one*]:
 - The public benefits of allowing the disturbance outweigh the benefits afforded by the existing undisturbed critical slope, per City Code 34-1120(b)(6)(d.i)
 - Due to unusual physical conditions, or the existing development of the School’s property, compliance with the City’s critical slopes regulations would prohibit or unreasonably restrict the use or development of the property.
2. “I move to recommend approval of the steep slope waiver for Tax Map 41B, Parcel 150 and Tax Map 41C Parcel 31, 220 Zan Road, based on a finding that [*reference at least one*]:
 - The public benefits of allowing the disturbance outweigh the benefits afforded by the existing undisturbed critical slope, per City Code 34-1120(b)(6)(d.i)
 - Due to unusual physical conditions, or the existing development of the property, compliance with the City’s critical slopes regulations would prohibit or unreasonably restrict the use or development of the property.And this motion for approval is subject to the following:
 - _____the following features or areas should remain undisturbed [*specify*]
 - _____the following conditions are recommended as being necessary to mitigate the potential adverse impacts of approving the waiver in the location requested: [*specify*]
3. “I move to recommend denial of the steep slope waiver for Tax Map 41B, Parcel 150 and Tax Map 41C Parcel 31, 220 Zan Road.”

Enclosures

Application and Narrative
Critical Slopes Ordinance
Engineering Department Review
Conservation Easement



WAIVER REQUEST FORM

Please Return To: City of Charlottesville
Department of Neighborhood Development Services
PO Box 911, City Hall
Charlottesville, Virginia 22902
Telephone (434) 970-3182 Fax (434) 970-3359

For a Critical Slopes Waiver Request, please include one of the following application fees: \$75 for single-family or two-family projects; \$500 for all other project types. **additional application form required*
For all other Waiver Requests, please include one of the following application fees: \$50 for single-family or two-family projects; \$250 for all other project types.

Project Name/Description Kroger R-369 Parcel Number 41B015000
Address/Location 220 Zan Road
Owner Name Giant Seminole Limited Partnership Applicant Name Kroger Limited Partnership I - Toby Locher

Applicant Address: P.O. BOX 14002 ROANOKE, VA 24038
Phone (H) _____ (W) 804-254-8440 (F) 540-563-3638
Email: toby.locher@kroger.com

Waiver Requested (review Zoning Ordinance for items required with waiver submissions):

- | | |
|---|--|
| <input type="checkbox"/> Sidewalk | <input type="checkbox"/> Drainage/Storm Water Management |
| <input type="checkbox"/> *Contact Staff for Supplemental Requirements | <input type="checkbox"/> Off-street Parking |
| <input type="checkbox"/> Site Plan Review | <input type="checkbox"/> Lighting |
| <input type="checkbox"/> Landscape | <input type="checkbox"/> Signs |
| <input type="checkbox"/> Setbacks | <input checked="" type="checkbox"/> Critical Slopes <i>*additional application form required</i> |
| <input type="checkbox"/> Communication Facilities | <input type="checkbox"/> Other |
| <input type="checkbox"/> Stream Buffer Mitigation Plan | |

Description of Waiver Requested: Waiver to allow disturbance of steep slopes in order to construct a new Kroger grocery store.

Reason for Waiver Request: The existing building must be expanded towards the critical slopes and cannot be avoided. See report for further explanation.

Applicant Signature

Date

Property Owner Signature (if not applicant)

Date

For Office Use Only:

Date Received: _____

Review Required: Administrative _____ Planning Commission _____ City Council _____

Approved: _____ Denied: _____

Director of NDS

Comments: _____

City of Charlottesville
CRITICAL SLOPES WAIVER REQUEST SUPPLEMENT

Please review city zoning ordinance section 34-1120(b) "Critical Slopes" and submit a completed Waiver Application Form with Critical Slopes Supplement.

Applicant: Kroger Limited Partnership I Contact: Mr. Toby Locher
PO BOX 14002 Toby.locher@Kroger.com
Roanoke, VA 24038 804-254-8440

RECEIVED

JAN 20 2015

NEIGHBORHOOD DEVELOPMENT SERVICES

Property Owner:
Giant Seminole Square Limited Partnership

Project Description: What are you proposing to do on this site?
Replace several empty buildings with a new Kroger Grocery Store.

Existing Conditions:
The site is developed as the Seminole Square Shopping Center.

Total Site Area:
17.58 acres (Seminole Square) with the Kroger parcel being 7.35 acres of that.

Zoning (if applying for rezoning-please note existing and intended change):
No rezoning required from current zoning of HW.

Percentage of Area greater than or equal to 25% slopes: (critical slopes make up 2.26 acres of the site's 17.58 acres, or 12.9 % of the site area.)

This application should be used to explain how the proposed project meets some or all of the requirements as described in Section 34-1120(6) "Modification or waiver." The applicant is expected to address finding #1 and/or finding #2 and justify the finding by utilizing the "critical slope provisions" as a guide. Completing this application will help staff make their recommendation to the Planning Commission and City Council.

City Council may grant a modification or waiver, upon making one or more of the following findings:

Finding #1: The public benefits of allowing disturbance of critical slope outweigh the public benefits of the undisturbed slope (public benefits include, but are not limited to, stormwater and erosion control that maintains the stability of the property and/or the quality of adjacent or environmentally sensitive areas; groundwater recharge; reduced stormwater velocity; minimization of impervious surfaces; and stabilization of otherwise unstable slopes)

See attached report.

Finding #2. Due to unusual size, topography, shape, location, or other unusual physical conditions, or existing development of a property, one (1) or more of these critical slopes provisions would effectively prohibit or unreasonably restrict the use, reuse or redevelopment of such property or would result in significant degradation of the site or adjacent properties.

See attached report.

Please address how Finding #1 and/or Finding 2# will be met utilizing the “critical slope provisions” noted below.

1. Erosion affecting the structural integrity of those features.

See attached report.

2. Stormwater and erosion-related impacts on adjacent properties.

See attached report.

3. Stormwater and erosion-related impacts to environmentally sensitive areas such as streams and wetlands.

See attached report.

4. Increased stormwater velocity due to loss of vegetation.
See attached report.

5. Decreased groundwater recharge due to changes in site hydrology.
See attached report.

6. Loss of natural or topographic features that contribute substantially to the natural beauty and visual quality of the community such as loss of tree canopy, forested areas and wildlife habitat.
See attached report.

Please list all attachments that should be viewed as support to the above explanations.
See attached report.

Please sign the following statement.

I certify that, to the best of my knowledge, the information I have provided above is based on sound engineering and surveying data and that this site has been carefully inspected and reviewed for the purposes of completing this application accurately. I certify that as the property owner/applicant I have not given false information that may affect the decisions made regarding this development.

Property Owner

Applicant

*Eric General Partner Giant Seminals L.P. and
Squad Investors L.P. 11/11/14*

11/10/14

Please do not write below this line. For office use only.
Planner's Comments/Recommendations:

January 15th, 2015

City of Charlottesville
610 East Market Street
P.O. Box 911
Charlottesville, VA 22902

RECEIVED
JAN 20 2015
NEIGHBORHOOD DEVELOPMENT SERVICES

RE: **220 Zan Road – Tax Map 41B015000; Steep Slope Waiver Justification to Support Development of a new Kroger Grocery Store (R369) at Seminole Square Shopping Center**

To Whom It May Concern:

On behalf Kroger Limited Partnership I, and in accordance with Ordinance Section 34-1120b, we wish to submit this request for critical slop waiver to permit the construction of a new Kroger Grocery Store inside of the Seminole Square Shopping Center. Accompanying this request is a site plan for Kroger R-369 for your review and hopefully approval.

The subject property has a physical address of 220 Zan Road and is part of the existing Seminole Square Shopping Center. The total site area of Seminole Square is 17.58 acres with the new Kroger site consisting of 7.35 acres. Seminole Square is home to several empty buildings and multiple tenants including Big Lots, Office Depot, Marshalls and many more smaller tenants. The site currently drains to a central, city maintained, 60" reinforced concrete pipe (RCP) that outfalls at the rear of the stores (southeastern side of the site) into a city maintained stormwater pond.

Birds Eye View of Existing Site (winter looking north):



The new Kroger building will occupy several existing, empty buildings in the center of the site. The existing buildings will be expanded and remodeled to fit the needs of Kroger. Majority of the site is currently paved or existing building with some on the interior parking areas serving as landscape islands and additionally with landscape strips along the perimeter. Behind the existing buildings on the southern and southeastern side of the site, several manmade fill slopes exist. The area of disturbance for this project will mainly encompass paved areas with placid slopes (1-5% approximately) leading to storm drains located throughout the project site. At the rear of the site a large manmade fill slope exists (facing southeast) with varying height (app. 30') and slope (averaging app. 55%). Additionally a large manmade fill slope exists along the southern boundary (facing north) and drains onto the project site. The slope varies in height (app. 21') and slope (averaging app. 59%) and will remain mostly undisturbed with the exception of the most eastern side which will be disturbed in order to install a new retaining wall. The proposed use of the site requires a small portion of the existing, manmade fill slopes to be removed and replaced with concrete retaining walls in order to facilitate adequate delivery and fire truck circulation.

The critical slopes being impacted appear to be man-made and steeper than typically found where slopes are naturally occurring.

With regard to the goals and objectives of the steep slope regulations we offer the following:

Finding #1: The public benefits of allowing disturbance of critical slope outweigh the public benefits of the undisturbed slope (public benefits include, but are not limited to, stormwater and erosion control that maintains the stability of the property and/or the quality of adjacent or environmentally sensitive areas; groundwater recharge; reduced stormwater velocity; minimization of impervious surfaces; and stabilization of otherwise unstable slopes)

The public benefits of the rehabilitation of the existing site outweigh the benefits of the undisturbed slope. In accordance with ordinance section 34-1120, the benefits of disturbing the slope will be shown by the explanation of the required "critical slope provisions" below:

1. Erosion affecting the structural integrity of those features.

In addition and as stated above, the existing manmade slopes are steeper than would be typically found if naturally occurring elsewhere. Typically, manmade fill slopes are not stable above 50% and the existing slopes appear to average between 55-59%. This excessive slope has the potential to cause long term erosion, maintenance and stability issues; especially when located inside of a flood plain as this site is.

At the toe of southeastern slope behind the shopping center lies an existing stormwater pond. According to a study entitled "Field Monitoring of Retrofitted Stormwater Basins in the Meadow Creek Watershed" by the University of Virginia dated June 30, 2002, page 8 scouring occurs inside the pond causing unnecessary pollutant loading (erosion). At the request of the city, the pond will be removed and replaced with a riprap lined plunge pool at the outfall of the 60" RCP. The riprap will also be extended to the bank of Meadow Creek in order to transport runoff from the plunge pool with limited soil erosion.

2. Stormwater and erosion-related impacts on adjacent properties.

The city owns the neighboring parcel that is adjacent to and downgradient of Seminole Square and is home to the Meadow Creek. The city's property and the shoreline of Meadow Creek will be protected in addition by newly placed riprap to serve as permanent sediment & runoff control extending from the plunge pool to the bank of Meadow Creek. All other neighboring parcels are located at higher elevations and will not be impacted by this site.

3. Stormwater and erosion-related impacts to environmentally sensitive areas such as streams and wetlands.

As it currently exists, the site offers little to no improvement in runoff water quality. However, as proposed the Kroger site will not only reduce the runoff rates for the newly added impervious areas by means of a new underground stormwater detention vault but will also provide greatly improved water quality by means of several proprietary water quality units. These water quality units will not only reduce phosphorus to the desired levels but will also aid in the removal of litter, total suspended solids (silt, etc) and oils.

4. Increased stormwater velocity due to loss of vegetation.

According to the city, the existing stormwater pond is undersized, erodes and is the source for unnecessary and continued maintenance. Additionally and according to a study entitled "Field Monitoring of Retrofitted Stormwater Basins in the Meadow Creek Watershed" by the University of Virginia dated June 30, 2002, page 8 scouring occurs inside the pond causing unnecessary pollutant loading. Therefore, the city has requested that Kroger remove the pond. In its place a new, low maintenance riprap plunge pool will be constructed to help dissipate the energy and reduce the velocity of the water of the stormwater leaving the city's 60" RCP storm sewer pipe. In order to remove the pond and construct the new plunge pool, the slope will need to be disturbed.

5. Decreased groundwater recharge due to changes in site hydrology.

Impervious cover will be increased as part of construction. However, a new underground stormwater vault will be constructed to attenuate and detain runoff from the increased impervious cover. This vault will be designed to retard the timing of release in order to keep the runoff from having a coincidental peak with that of the existing 60" RCP storm sewer. By keeping the peak release of the pond separate from the rest of the site, runoff will have a better chance infiltrating into the ground. In addition, the outfall from the vault is upgradient of the 60" RCP and has an increased path of travel from the outfall to the Meadow Creek; again increasing potential for infiltration. Additionally, the city has requested the installation of a new "plunge pool" as explained above. The plunge pool will hold water b/w rain events to allow additional water the potential to infiltrate into the ground.

6. Loss of natural or topographic features that contribute substantially to the natural beauty and visual quality of the community such as loss of tree canopy, forested areas and wildlife habitat.

It would be difficult to argue that the critical slopes proposed to be disturbed add to the "natural beauty" of the back of the shopping center. They are merely a manmade earthwork (not natural) that enabled the creation of the existing shopping center. What trees that do exist will be removed. However, the slopes and existing trees are starting to be covered by an invasive vine species that needs to be eradicated (see pictures below). Additionally, trees will be planted on-site to beautify the development and the site will now be occupied by a strong, national tenant known for their ability to thrive and should remain viable and well maintained for years to come. If not approved, the site has the potential to remain abandoned and outdated.

Photo taken behind the buildings on the southern end of the existing truck turn around facing West (notice erosion and vines):



Photo taken behind the buildings on the southern end of the existing truck turn around facing South (notice vines behind the fence):



Close up of vines in picture above:



Another picture of vines on the south side of the site:



Finding #2. Due to unusual size, topography, shape, location, or other unusual physical conditions, or existing development of a property, one (1) or more of these critical slopes provisions would effectively prohibit or unreasonably restrict the use, reuse or redevelopment of such property or would result in significant degradation of the site or adjacent properties.

The existing shape and size of the developed property prohibits the ability to use the site as desired for a new Kroger Grocery Store. It is not reasonably possible to shift the store forward into the existing parking to avoid the existing slopes do to terrain, conformity with the rest of the site and adequate parking and circulation. Additionally, delivery and fire services must be maintained behind the store necessitating the expansion of the existing drive.

List of attachments:

Exhibit 1: Survey of Existing Property

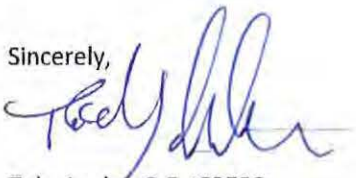
Exhibit 2: Site Plan

Exhibit 3: Steep Slope Disturbance

Exhibit 4: Existing Pond Report

Exhibit 5: Existing VSMP Approval

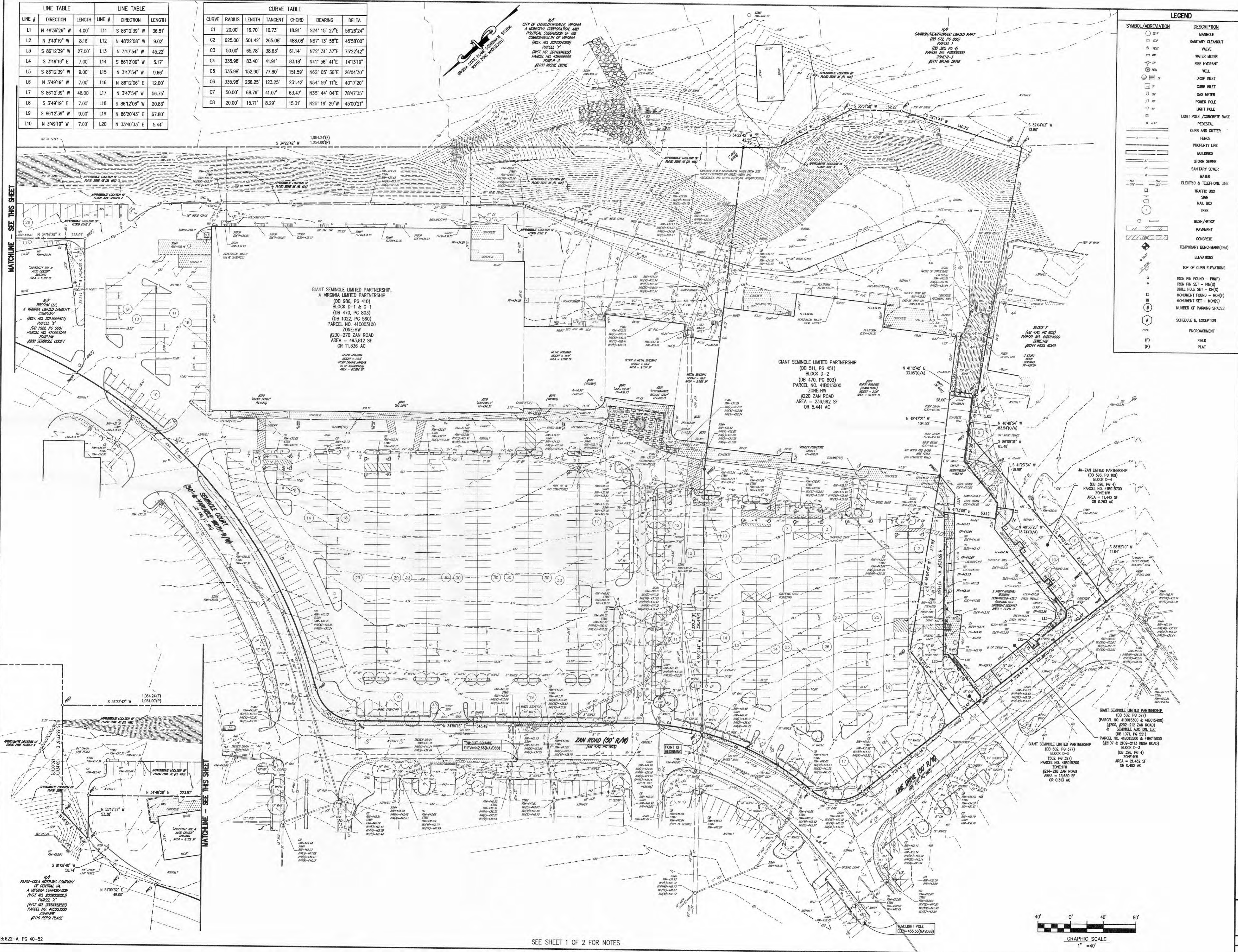
Sincerely,

A handwritten signature in blue ink, appearing to read 'Toby Locher', written over a horizontal line.

Toby Locher, P.E., CPESC
Kroger Limited Partnership I

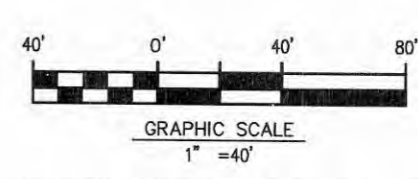
LINE #	DIRECTION	LENGTH	LINE #	DIRECTION	LENGTH
L1	N 48°36'26" W	4.00'	L11	S 86°12'39" W	36.51'
L2	N 3°49'19" W	8.16'	L12	N 48°22'08" W	9.02'
L3	S 86°12'39" W	27.00'	L13	N 3°47'54" W	45.22'
L4	S 3°49'19" E	7.00'	L14	S 86°12'06" W	5.17'
L5	S 86°12'39" W	9.00'	L15	N 3°47'54" W	9.66'
L6	N 3°49'19" W	7.00'	L16	N 86°12'06" E	12.00'
L7	S 86°12'39" W	48.00'	L17	N 3°47'54" W	56.75'
L8	S 3°49'19" E	7.00'	L18	S 86°12'06" W	20.83'
L9	S 86°12'39" W	9.00'	L19	N 86°20'43" E	67.80'
L10	N 3°49'19" W	7.00'	L20	N 33°40'33" E	5.44'

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	20.00'	19.70'	10.73'	18.91'	S24°15'27"E	56°26'24"
C2	625.00'	501.42'	265.06'	488.08'	N87°13'58"E	45°58'00"
C3	50.00'	65.78'	36.63'	61.14'	N72°31'37"E	75°22'42"
C4	335.98'	83.40'	41.91'	83.18'	N41°56'41"E	14°13'10"
C5	335.98'	152.90'	77.80'	151.59'	N62°03'36"E	26°04'30"
C6	335.98'	236.25'	123.25'	231.42'	N54°59'11"E	40°17'20"
C7	50.00'	68.76'	41.07'	63.47'	N35°44'04"E	78°47'35"
C8	20.00'	15.71'	8.29'	15.31'	N26°19'29"W	45°00'21"



FB-622-A, PG 40-52

SEE SHEET 1 OF 2 FOR NOTES



SYMBOL/ABBREVIATION	DESCRIPTION
○	MANHOLE
○	SANITARY CLEANOUT
○	VALVE
○	WATER METER
○	FIRE HYDRANT
○	WELL
○	DROP INLET
○	CURB INLET
○	GAS METER
○	POWER POLE
○	LIGHT POLE
○	LIGHT POLE/CONCRETE BASE
○	POSTAL
○	CURB AND GUTTER
○	FENCE
○	PROPERTY LINE
○	BUILDINGS
○	STORM SEWER
○	SANITARY SEWER
○	WATER
○	ELECTRIC & TELEPHONE LINE
○	TRAFFIC LIGHT
○	SON
○	MAIL BOX
○	TREE
○	BUSH/HEDGE
○	PAVEMENT
○	CONCRETE
○	TEMPORARY BENCHMARK (TBM)
○	ELEVATIONS
○	TOP OF CURB ELEVATIONS
○	IRON PIN FOUND - (PINF)
○	IRON PIN SET - (PINS)
○	DRILL HOLE SET - (DHS)
○	MONUMENT FOUND - (MONF)
○	MONUMENT SET - (MONS)
○	NUMBER OF PARKING SPACES
○	SCHEDULE B, EXCEPTION
○	ENCROACHMENT
○	FIELD
○	PLAT

MSA, P.C.

Environmental Science Planning & Surveying
 Civil & Environmental Engineering - Landscape Architecture
 5652 S. 20th Avenue, Suite 100, Charlotte, NC 28216
 704.399.2600 (FAX) 704.399.2601 (TEL)
 www.msaonline.com

SHEET

2

2 of 2 Sheets
 SCALE: 1" = 40'
 PROJ. NO.: 14099

DESIGNED

DRAWN
 CHECKED
 APPROVED
 DATE: 6-13-14

BLOCK D-2 & BLOCK D-1 & G-1

(DB 470, PG 803) (DB 1022, PG 560)
 PARCEL NO. 418015000 & 410003100

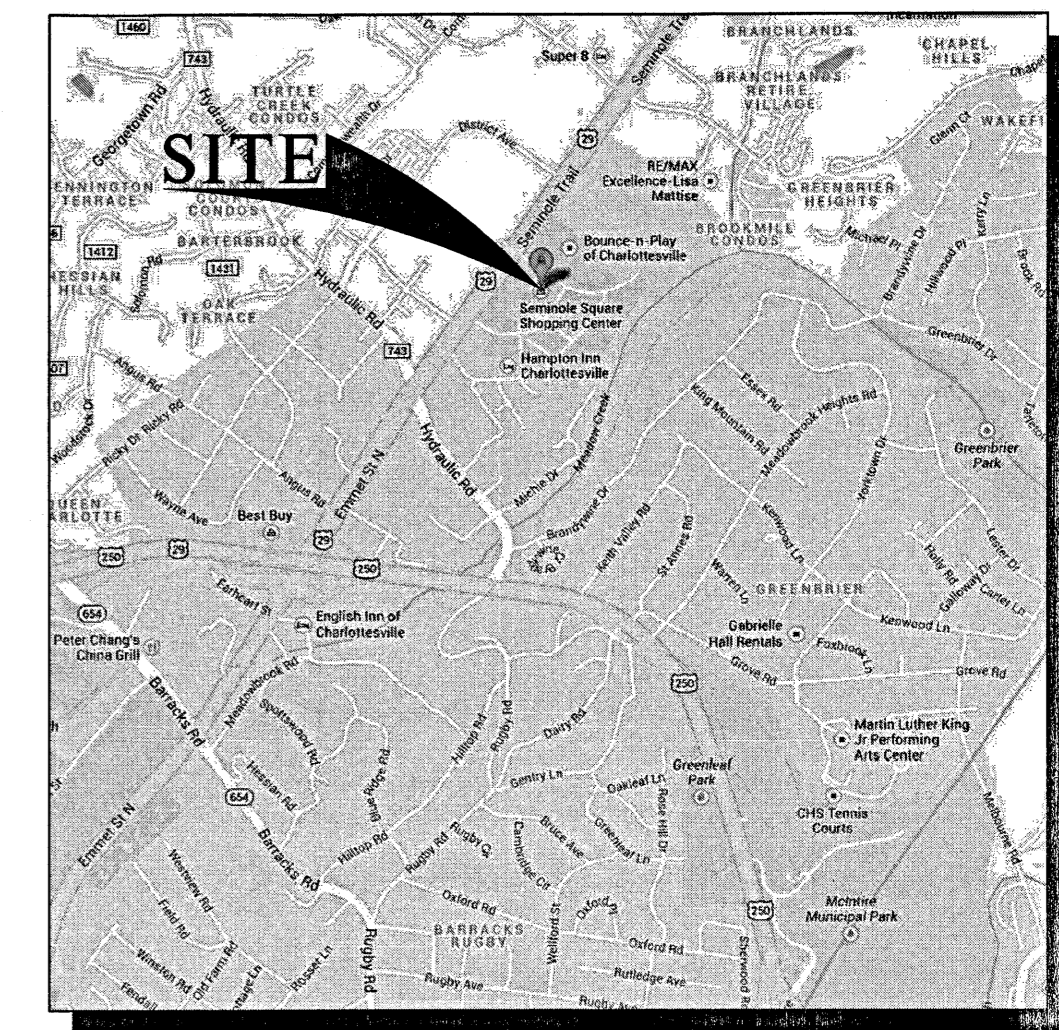
ALTA/ASCM LAND TITLE SURVEY

OF
 BLOCK D-2 & BLOCK D-1 & G-1
 (DB 470, PG 803) (DB 1022, PG 560)
 PARCEL NO. 418015000 & 410003100
 CHARLOTTEVILLE



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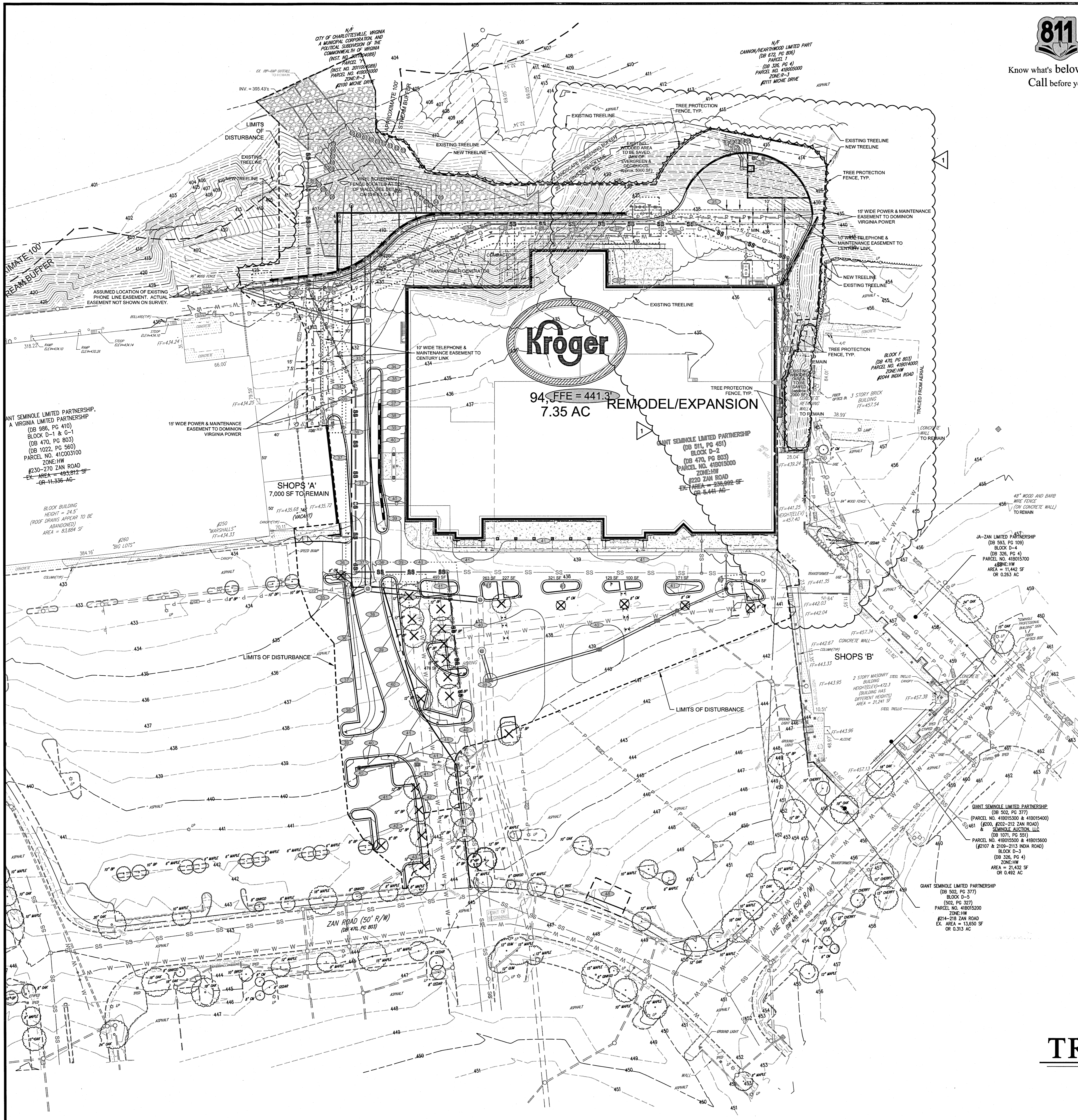
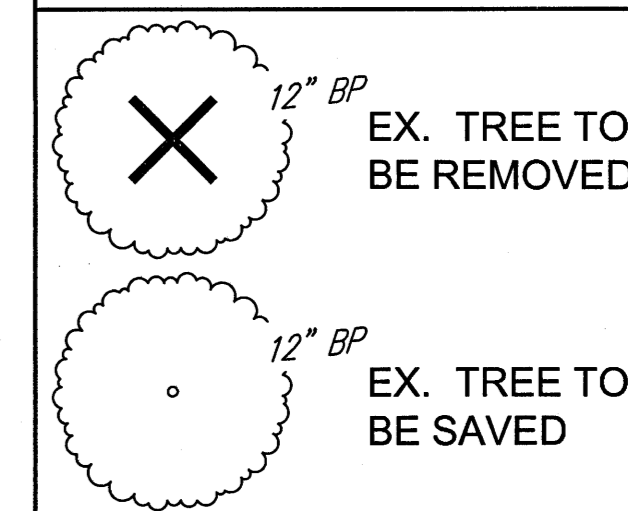
VICINITY MAP

SCALE: NONE

EXISTING TREES TO BE REMOVED:		
TREE TYPE	SIZE	QUANTITY
BRADFORD PEAR (BP)	6"	1
	12"	15
CRAPPE MYRTLE (CM)	8"	5
	12"	1
TOTAL		22

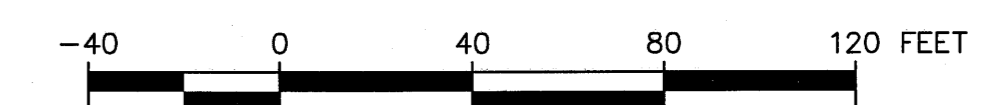
FOR PROPOSED TREES &
TREE REPLACEMENT, SEE
SHEETS LA-1 THROUGH
LA-3.

EXISTING TREE SYMBOLS:

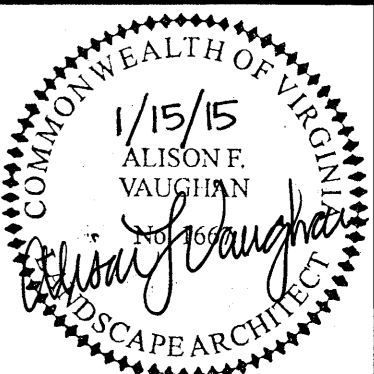


TREE REMOVAL PLAN

SCALE: 1" = 40'



ROBERTSON LOIA ROOF
ARCHITECTS & ENGINEERS
3460 Preston Ridge Road, Suite 275, Alpharetta, Georgia 30005
770-674-2600 • Fax 770-319-0745



KROGER STORE R-369
220 ZAN ROAD
CHARLOTTEVILLE, VA
FOR **KROGER LIMITED PARTNERSHIP I**
P.O. BOX 14002, ROANOKE, VA 24038
(540) 563-3645

REVISIONS
1 REVISE BUILDING
LOCATION
01-14-15

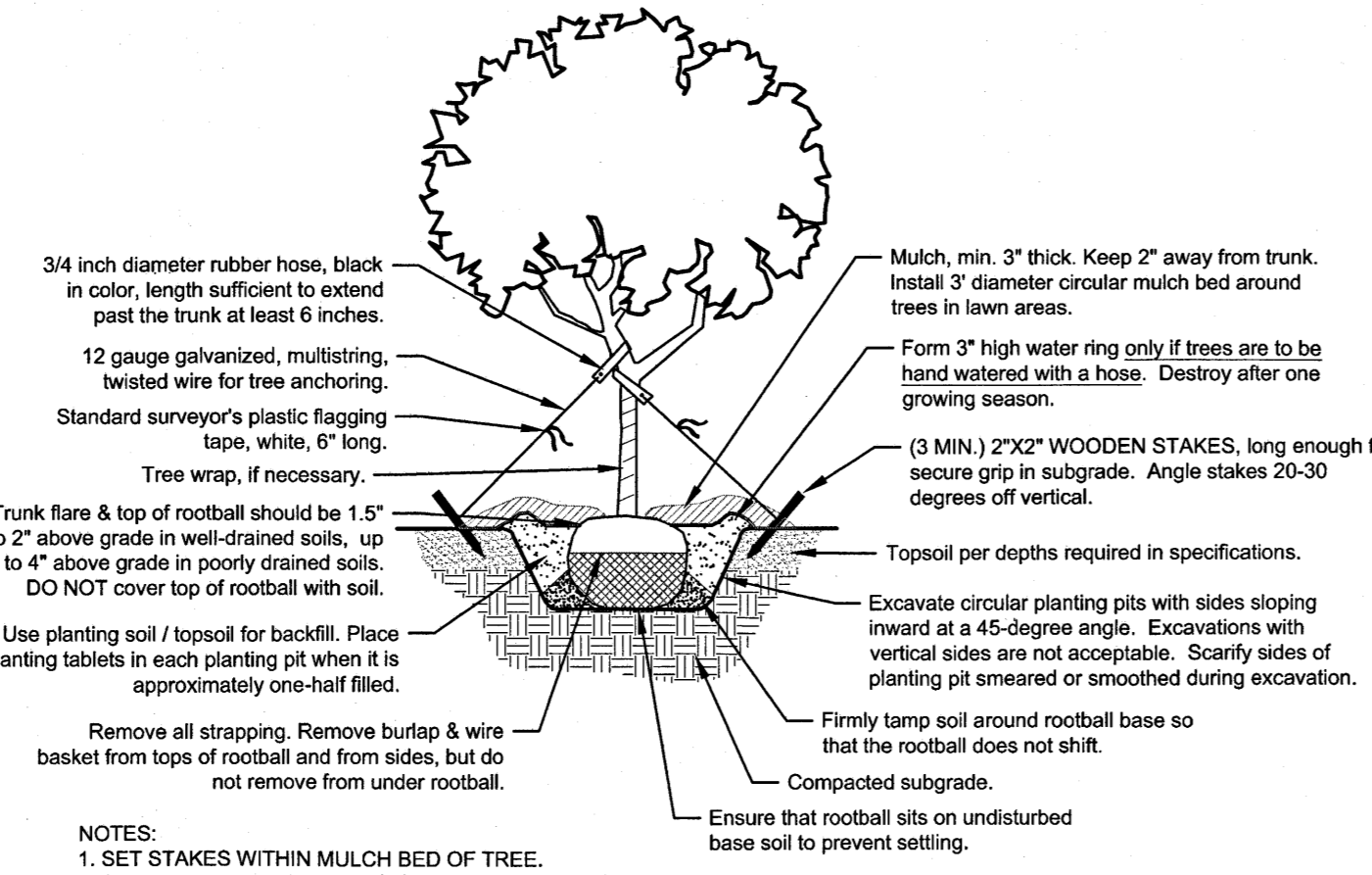
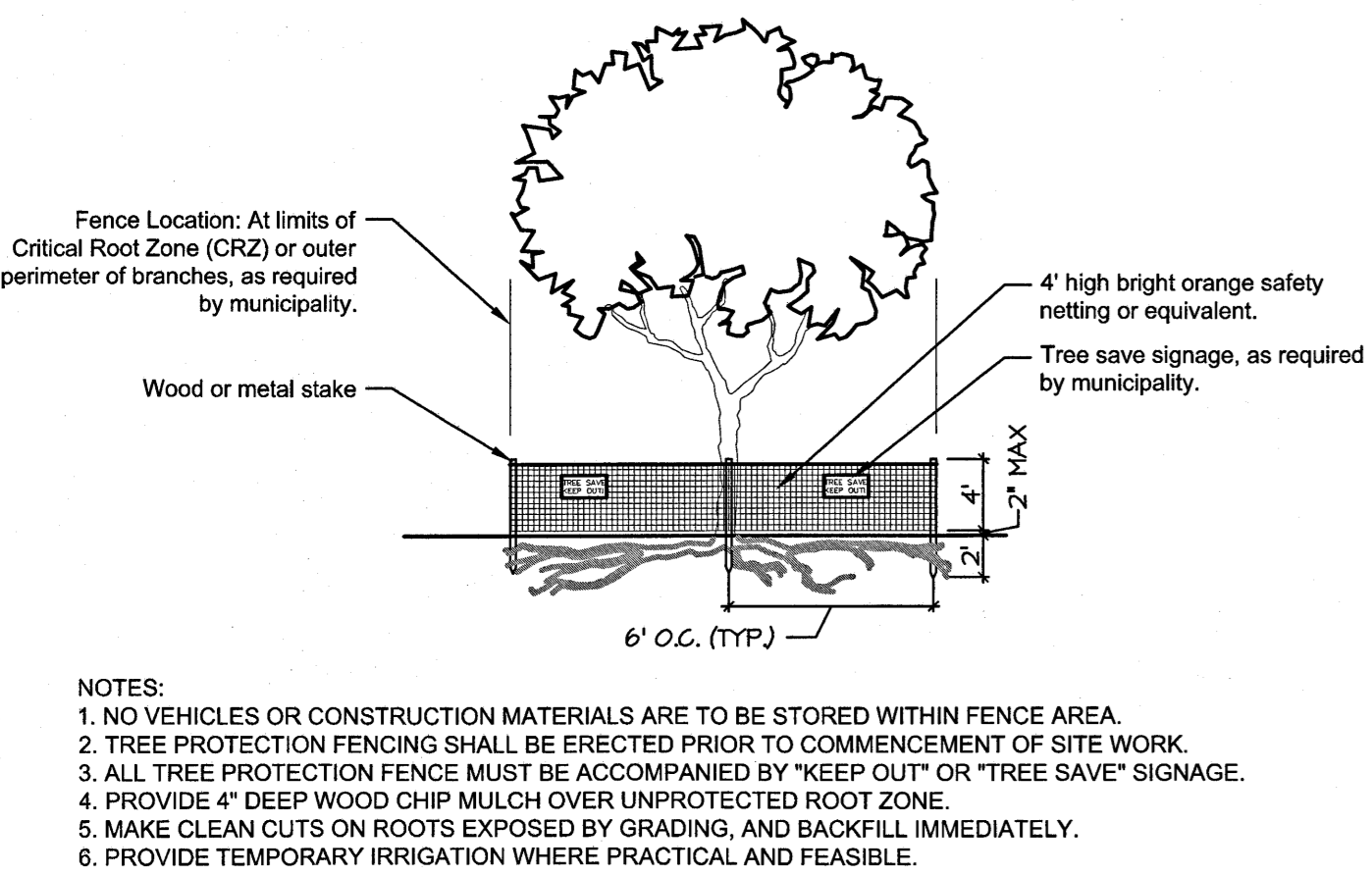
TREE REMOVAL PLAN

DATE
11-10-14

PROJECT NUMBER
12-317

SHEET NUMBER

TR - 1

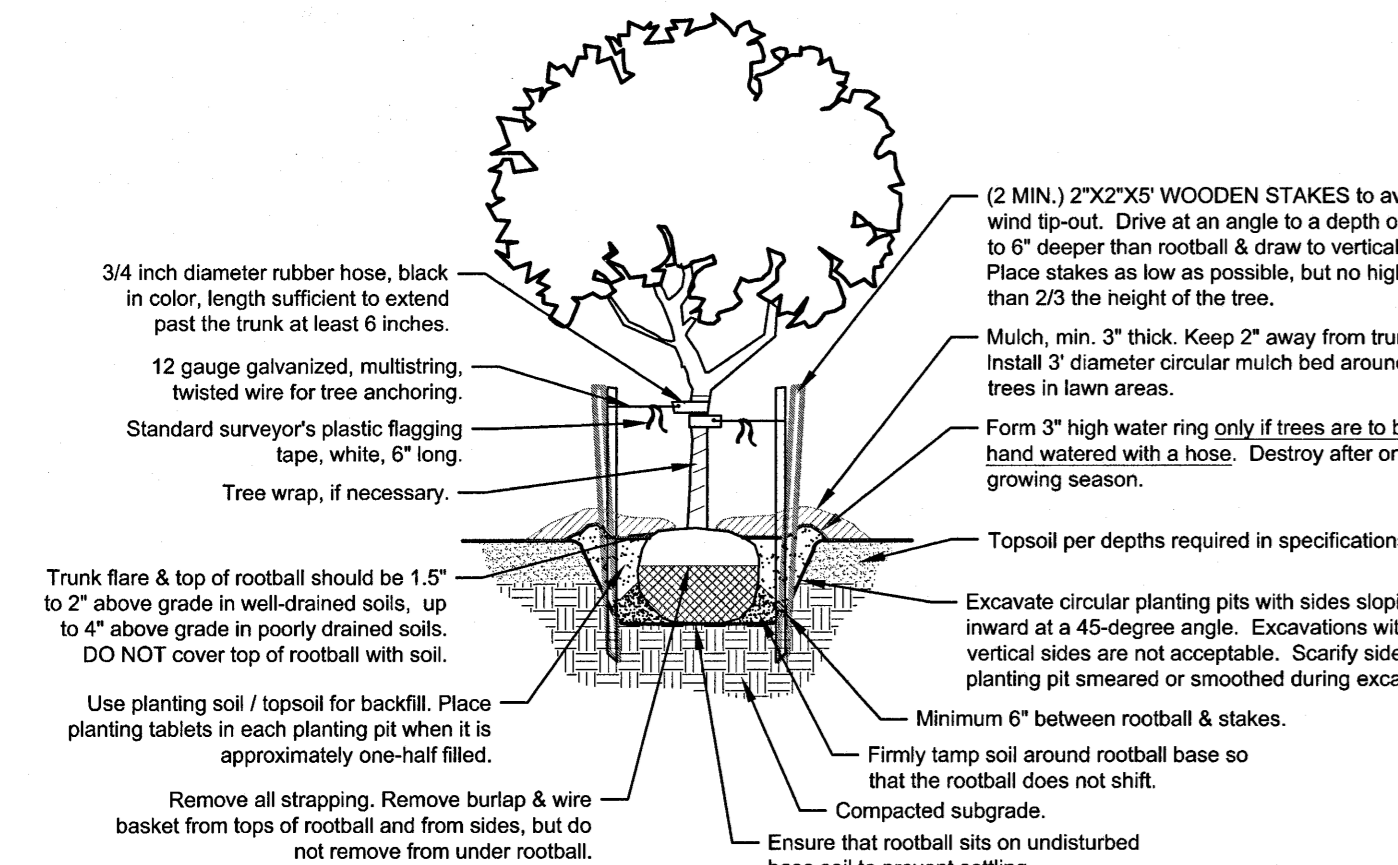


NOTE: THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE MOST CURRENT SET OF LANDSCAPE PLANS AND SPECIFICATIONS PRIOR TO BIDDING, AND OBTAINING A COPY OF THE FINAL APPROVED PLANS AND SPECIFICATIONS PRIOR TO INSTALLATION. ANY DISCREPANCIES OR QUESTIONS REGARDING THESE PLANS SHOULD BE ADDRESSED PRIOR TO BIDDING AND INSTALLATION. CONTACT ROBERTSON LOIA ROOF AT (770) 674-2600.

PRIOR TO BIDDING AND/OR INSTALLATION, IF THE LANDSCAPE CONTRACTOR HAS ANY QUESTIONS ABOUT THE PLANT SCHEDULE, PLANT SIZES, USDA PLANT HARDINESS ZONES, ETC., OR IF THE CONTRACTOR HAS TROUBLE LOCATING TREES OR SHRUBS FROM GROWERS/LANDSCAPE SUPPLIERS, THE CONTRACTOR SHOULD CONTACT THE LANDSCAPE ARCHITECT TO DISCUSS. ALISON VAUGHAN, R.L.A. - ROBERTSON LOIA ROOF (770) 674-2600.

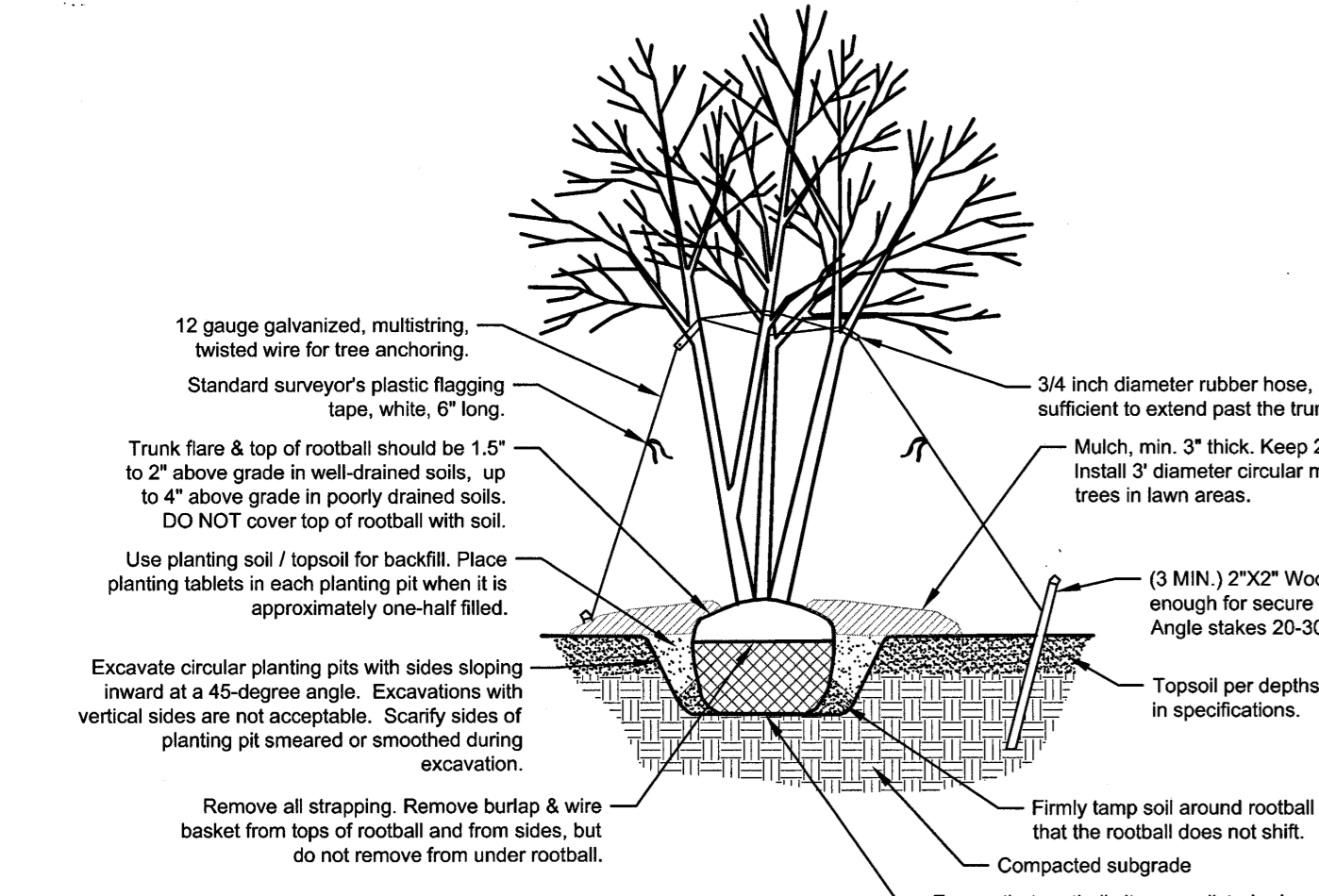
TREE PROTECTION DETAIL

SCALE: NONE



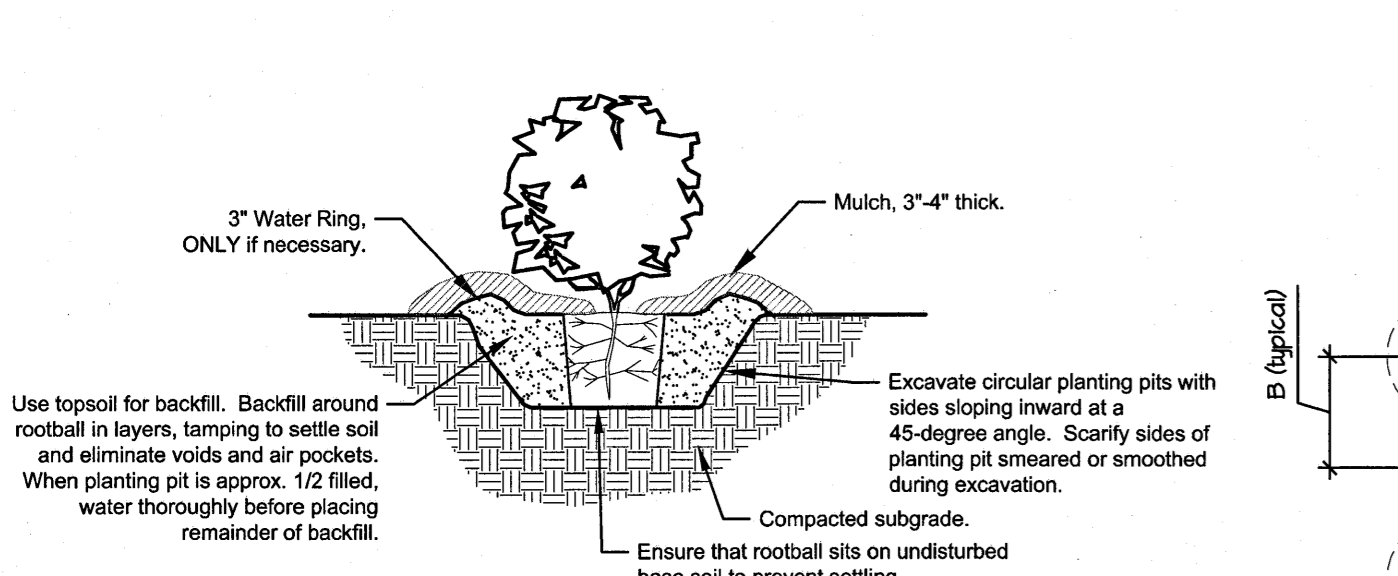
TREE PLANTING DETAIL TREES 2" CALIPER AND LESS

SCALE: NONE



TREE PLANTING DETAIL MULTI-STEMMED TREES

SCALE: NONE



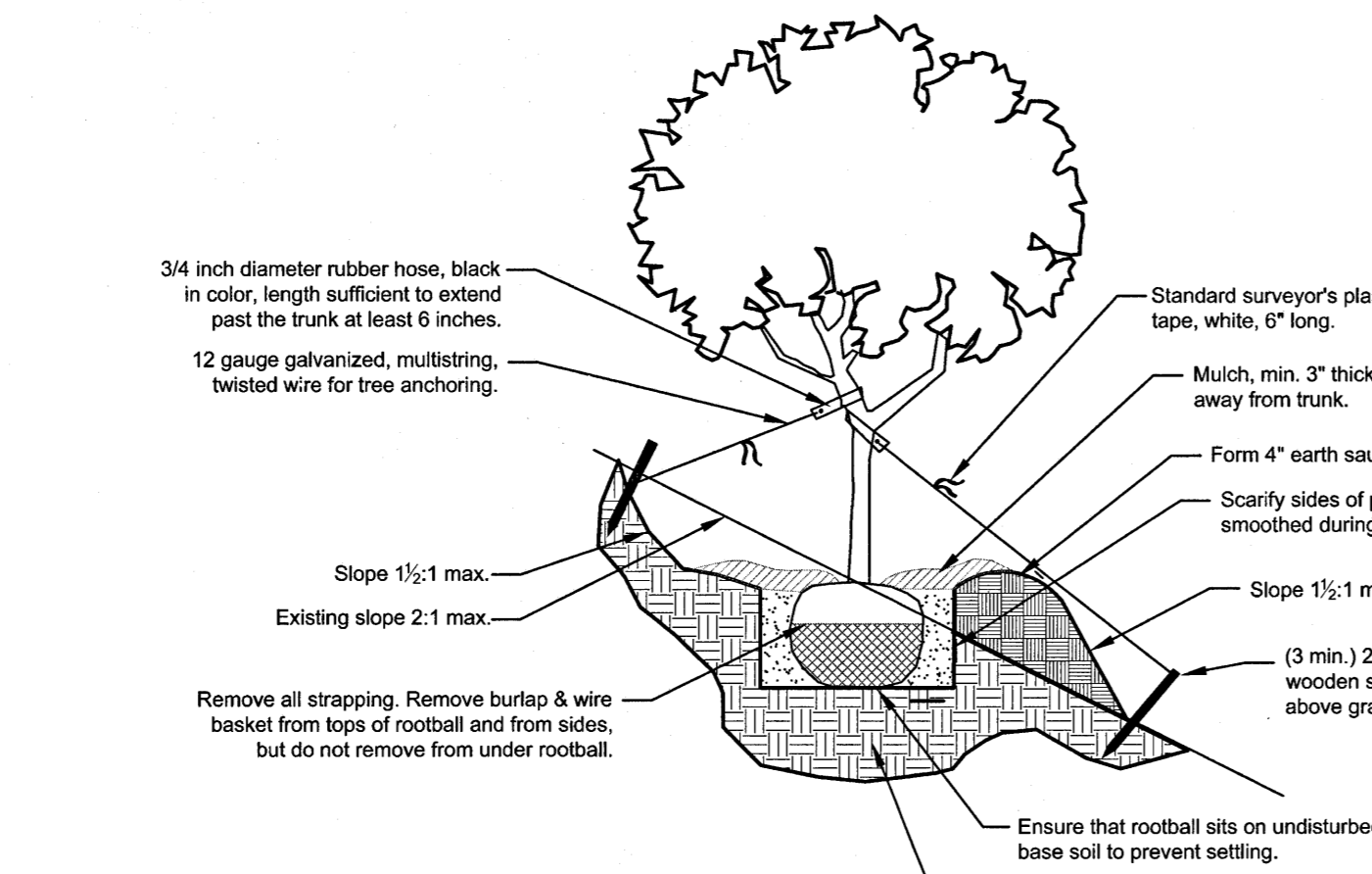
SHRUB PLANTING DETAIL

SCALE: NONE

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Know what's below. Call before you dig

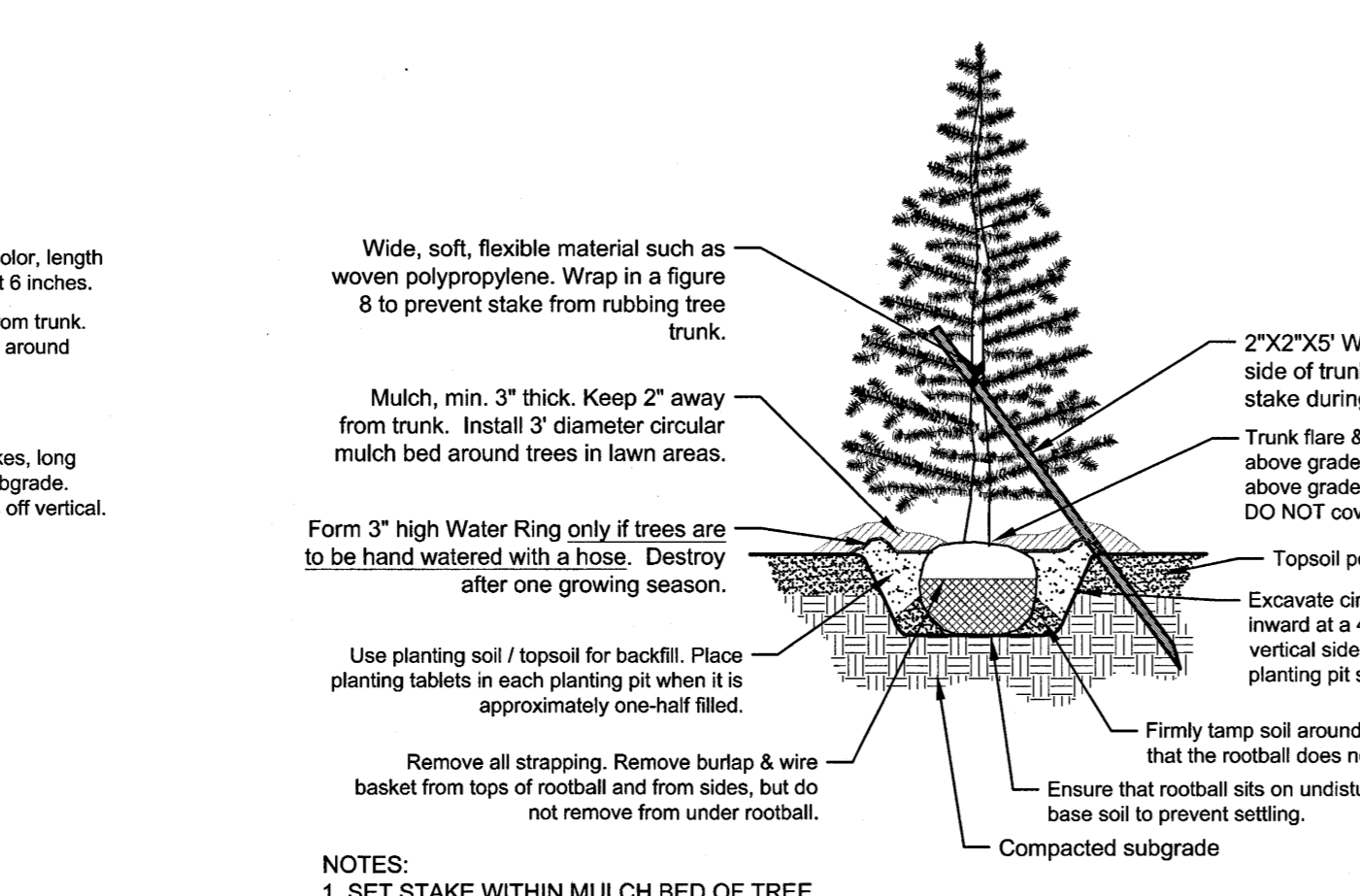
TREE PLANTING DETAIL TREES LARGER THAN 2" CALIPER

SCALE: NONE



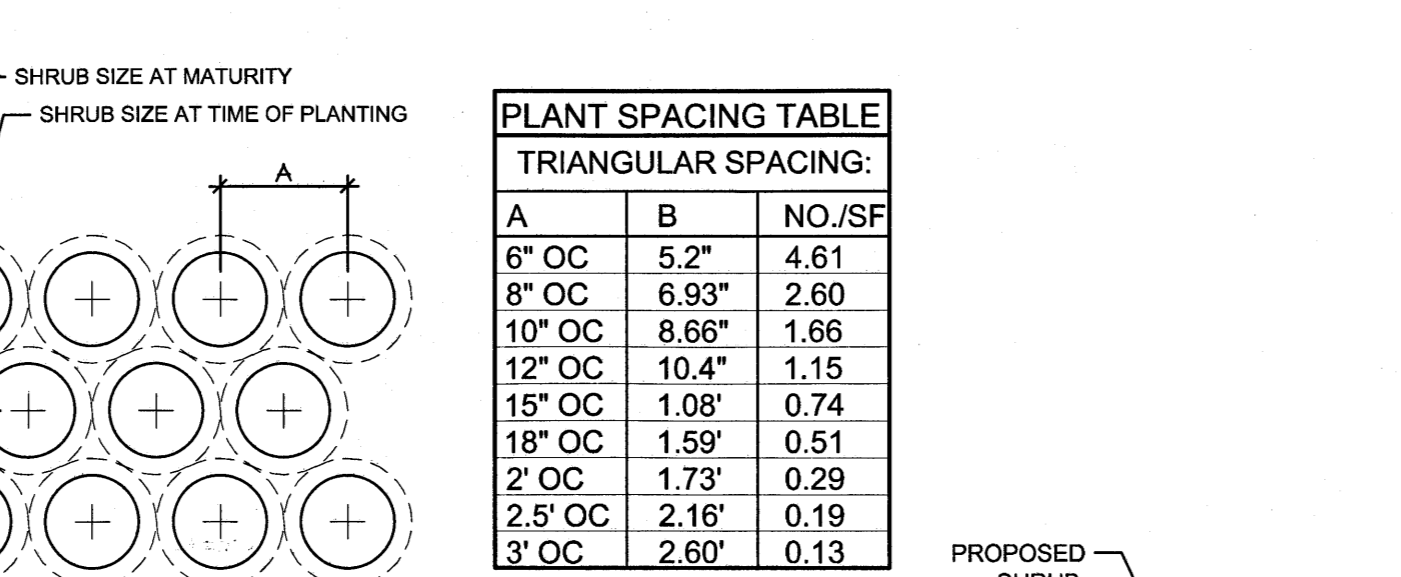
TREE PLANTING DETAIL TREE ON SLOPE

SCALE: NONE



TREE PLANTING DETAIL EVERGREEN TREE

SCALE: NONE



PLAN VIEW - TRIANGULAR SPACING

SCALE: NONE



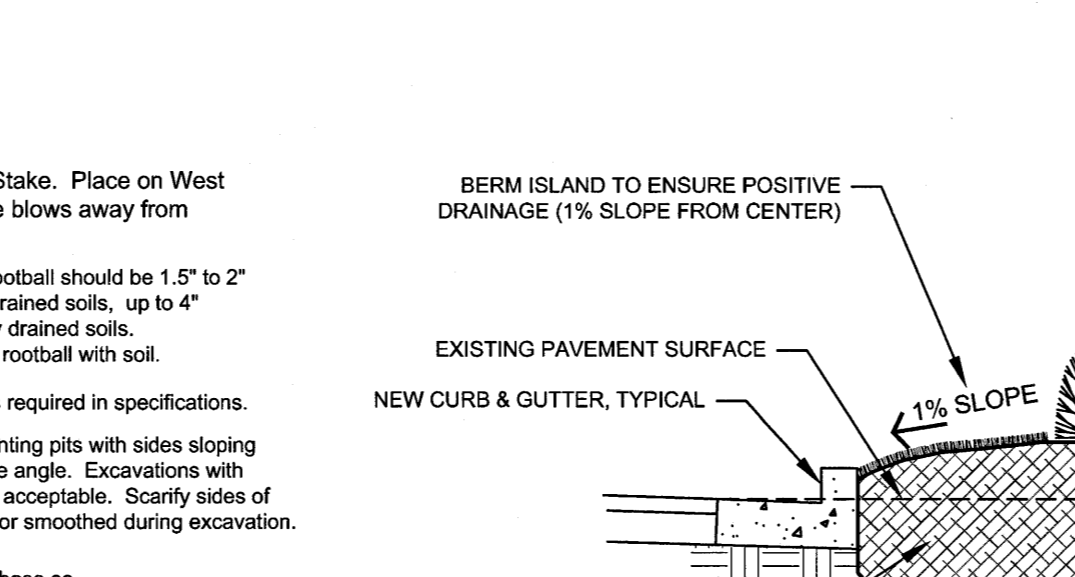
PLANTER ISLAND

SCALE: NONE



SHRUB PLANTING LOCATION WHEN ADJACENT TO HEAD-IN PARKING

SCALE: NONE

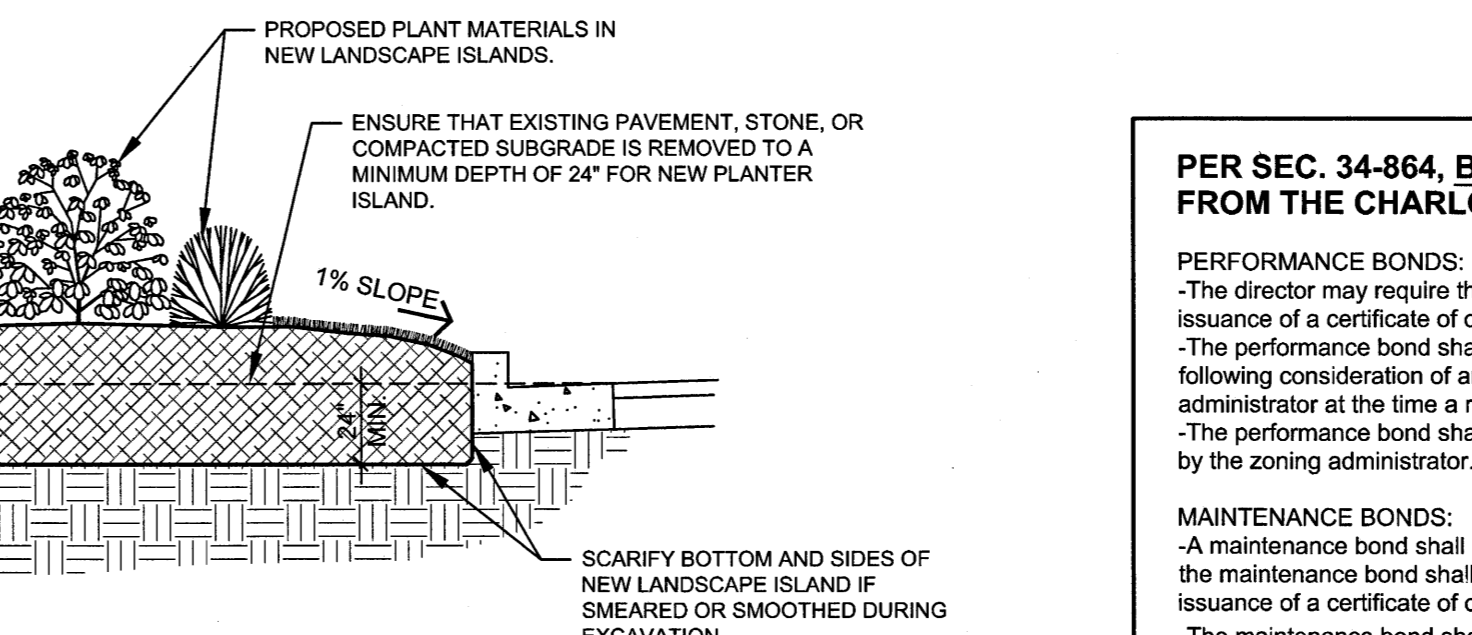


LANDSCAPE CONTRACTOR NOTES:

- LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE LATEST, CURRENT SET OF APPROVED LANDSCAPE PLANS & SPECIFICATIONS PRIOR TO BIDDING AND/OR INSTALLATION. CONTRACTOR IS TO CONTACT R.L. LANDSCAPE ARCHITECT WITH ANY QUESTIONS REGARDING THE PLANT SELECTIONS OR DESIGN, AND TO VERIFY MOST CURRENT PLANT DATES.
- THE KROGER PROJECT SPECIFICATIONS ARE A PART OF THESE PLANS AND SHALL BE CONSULTED BY THE LANDSCAPE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING ALL WORK AS SPECIFIED ON THE PLANS AND IN THE SPECIFICATIONS.
- LANDSCAPE CONTRACTOR SHALL VERIFY ALL PLANT QUANTITIES SHOWN ON PLANS AND IN PLANT SCHEDULE PRIOR TO BIDDING AND BEGINNING WORK. CONTRACTOR SHALL NOTIFY THE R.L. LANDSCAPE ARCHITECT OF ANY DISCREPANCIES PRIOR TO BEGINNING OR CONTINUING WORK. QUANTITIES SHOWN ON PLANS TAKE PRECEDENCE.
- PRIOR TO CONSTRUCTION, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC., WHICH OCCURS AS A RESULT OF THE LANDSCAPE CONSTRUCTION.
- THERE SHALL BE NO ADDITIONS, SUBSTITUTIONS, OR DELETIONS TO THESE PLANS WITHOUT PRIOR APPROVAL FROM THE LANDSCAPE ARCHITECT. LANDSCAPE CONTRACTOR SHALL SUBMIT ALL PROPOSED CHANGES IN WRITING TO THE R.L. LANDSCAPE ARCHITECT.
- ALL TREES & PLANTS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT, THE OWNER, OR THE OWNER'S REPRESENTATIVE BEFORE, DURING, AND AFTER INSTALLATION, AND MUST BE REPLACED BY THE LANDSCAPE CONTRACTOR WITH ACCEPTABLE PLANT MATERIAL. APPROVAL OF TREES & PLANTS AT THE NURSERY DOES NOT ALTER THE RIGHT OF REJECTION AT THE PROJECT SITE.
- ALL TREES MUST BE STAKED AS SHOWN IN THE DETAILS, UNLESS THE LOCAL MUNICIPALITY REQUIRES OTHERWISE. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL STAKING AND GUYING AFTER ONE GROWING SEASON.
- WARRANTY: THE LANDSCAPE CONTRACTOR SHALL PROVIDE A WARRANTY FOR ALL PLANT MATERIALS (TREES, SHRUBS, PERENNIALS, ANNUALS, TURF, MULCH, ETC.) FOR A PERIOD OF 12 MONTHS FROM THE DATE OF INSTALLATION. ACCEPTANCE, HOWEVER LONGER, THE LANDSCAPE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE THE END OF THE WARRANTY PERIOD. THIS INCLUDES REPLACING ANY PLANT MATERIAL WHICH DIES, TURNS BROWN, OR DECOLORATES. ALL REPLACEMENT MATERIAL SHALL BE OF THE SAME SPECIES, QUANTITY, SIZE, AND MEETING ALL PLANT LIST SPECIFICATIONS.
- MAINTENANCE: PROVIDE FULL MAINTENANCE BY SKILLED EMPLOYEES OF THE LANDSCAPE CONTRACTOR. BEGIN MAINTENANCE IMMEDIATELY AFTER TREES, PLANTS AND TURF ARE INSTALLED AND CONTINUE UNTIL PLANTINGS ARE ACCEPTED AS HEALTHY AND WELL-ESTABLISHED. BUT FOR LESS THAN THE WARRANTY PERIOD LISTED ABOVE. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MAINTENANCE SCHEDULE WITH KROGER AND/OR THE SITE PROPERTY MANAGER.
- MAINTENANCE COSTS: ALL MAINTENANCE COSTS SHALL BE INCLUDED IN THE OVERALL BASE BID PRICING WITH A BREAKOUT AMOUNT PROVIDED. INCLUDE BREAKOUT AMOUNT IN CONTRACTOR'S SCHEDULE OF VALUES.
- MAINTENANCE SCOPE: MAINTAIN AND ESTABLISH TURF, PLANTS, AND TREES BY WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING, REPLANTING, AND PERFORMING OTHER OPERATIONS AS REQUIRED TO ESTABLISH HEALTHY, VIABLE TURF, PLANTS, AND TREES.
- THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE INSTALLATION AND USE OF ALL NECESSARY IRRIGATION SYSTEMS (NEW SYSTEM, TIE-IN TO EXISTING SYSTEM, ETC.) WITH KROGER AND THE SITE PROPERTY MANAGER.

PLANTING PLAN NOTES:


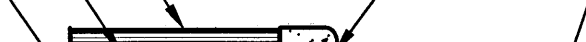
- ALL CONSTRUCTION SHALL CONFORM TO CITY, COUNTY, STATE, AND FEDERAL REQUIREMENTS.
- THESE PLANS ARE SCHEMATIC AND DUE TO THE NATURE OF CONSTRUCTION, SLIGHT FIELD MODIFICATIONS MAY BE NECESSARY. ANY DEVIATIONS FROM THE ORIGINAL PLANS SHOULD BE NOTED ON THE AS-BUILT DRAWINGS. FIELD ADJUSTMENTS MAY ALSO BE REQUIRED IF ANY EXISTING LANDSCAPING IS TO REMAIN, AND SHOULD BE WORKED OUT AT THE PRE-INSTALLATION CONFERENCE IF AT ALL POSSIBLE. CONTACT THE LANDSCAPE ARCHITECT WITH QUESTIONS.
- AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2004 OR LATEST VERSION) ARE ONLY GUIDELINE SPECIFICATIONS AND SHALL BE CONSIDERED MINIMUM QUALITY REQUIREMENTS FOR ALL PLANTS AND TREES.
- ALL PLANTS AND TREES MUST COMPLY WITH GENUS, SPECIES, VARIETY, AND CULTIVAR INDICATED ON DRAWINGS, AND WITH ANSI Z60.1, (INCLUDING A DOMINANT CENTRAL LEADER FOR ALL SHADE TREES). SIZES INDICATED IN THE PLANT AND TREE SCHEDULES ARE CONSIDERED THE MINIMUM ACCEPTABLE SIZE. PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK, DENSELY FOLIATED WHEN IN LEAF AND FREE OF DISEASE, PESTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT.
- ROOT BALL DIAMETERS & DEPTHS SHALL COMPLY WITH THE MINIMUM SIZES AS LISTED IN ANSI Z60.1. ROOT BALL DEPTHS SHALL BE MEASURED FROM THE TOP OF THE BALL, WHICH IN ALL CASES SHALL BEGIN AT THE ROOT FLARE. ROOT FLARE SHALL BE VISIBLE BEFORE PLANTING. THE TOP OF ALL ROOT BALLS SHALL BE 1.5 TO 2 INCHES ABOVE GRADE IN WELL-DRAINED SOILS, AND UP TO 4 INCHES ABOVE GRADE IN POORLY DRAINED SOILS. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.
- PRIOR TO MULCHING, CLEAN AREA OF WEED GROWTH AND DEBRIS AND TREAT PLANTING AREAS WITH PRE-EMERGENT WEED KILLER, APPLIED ACCORDING TO THE MANUFACTURER'S DIRECTIONS.
- ALL PLANTING BEDS AND MULCHED AREAS ARE TO RECEIVE MINI PINE BARK NUGGETS IN ALL PARKING LOT LANDSCAPE AREAS CONTAINING GROUND COVERS OR SEASONAL COLOR (EX. LIRIOPE, ANNUAL FLOWERS, ETC.) AND HARDWOOD MULCH (DOUBLE-SHREDDED) TO MATCH EXISTING MULCH ON-SITE, UNLESS OTHERWISE SPECIFIED BY OWNER OR OWNER'S REPRESENTATIVE. CONTRACTOR MUST RECEIVE APPROVAL FROM LANDSCAPE ARCHITECT OR OWNER IF USING STAINED OR DYED VARIETIES OF MULCH. APPLY 1/4 INCH MINIMUM THICKNESS OF MULCH OVER ENTIRE SURFACE OF PLANTING AREA WITH FINISH LEVEL ADJACENT TO FINISH GRADES.
- ALL TREES NOT LOCATED WITHIN SHRUB BEDS SHALL RECEIVE MULCH TO THE DEPTH SPECIFIED IN A 3" DIAMETER MULCH BED AROUND THE CENTER OF THE TRUNK. KEEP MULCH A MINIMUM OF 2 INCHES AWAY FROM THE TRUNK TO AVOID COLLAR ROT.
- ALL DISTURBED LANDSCAPE AREAS NOT SHOWN TO BE SOILED, SEEDING OR MULCHED, SHALL RECEIVE PERMANENT GRASSING PER THE CIVIL PLANS, UNLESS OTHERWISE SPECIFIED BY OWNER OR OWNER'S REPRESENTATIVE. ADDITIONAL SEEDING OR SOILING BEYOND PROPERTY LINES (I.E. RIGHT-OF-WAY AND/OR ADJACENT PROPERTIES) MAY BE REQUIRED. CONSULT OWNER OR OWNER'S REPRESENTATIVE FOR SITE-SPECIFIC LIMITS.

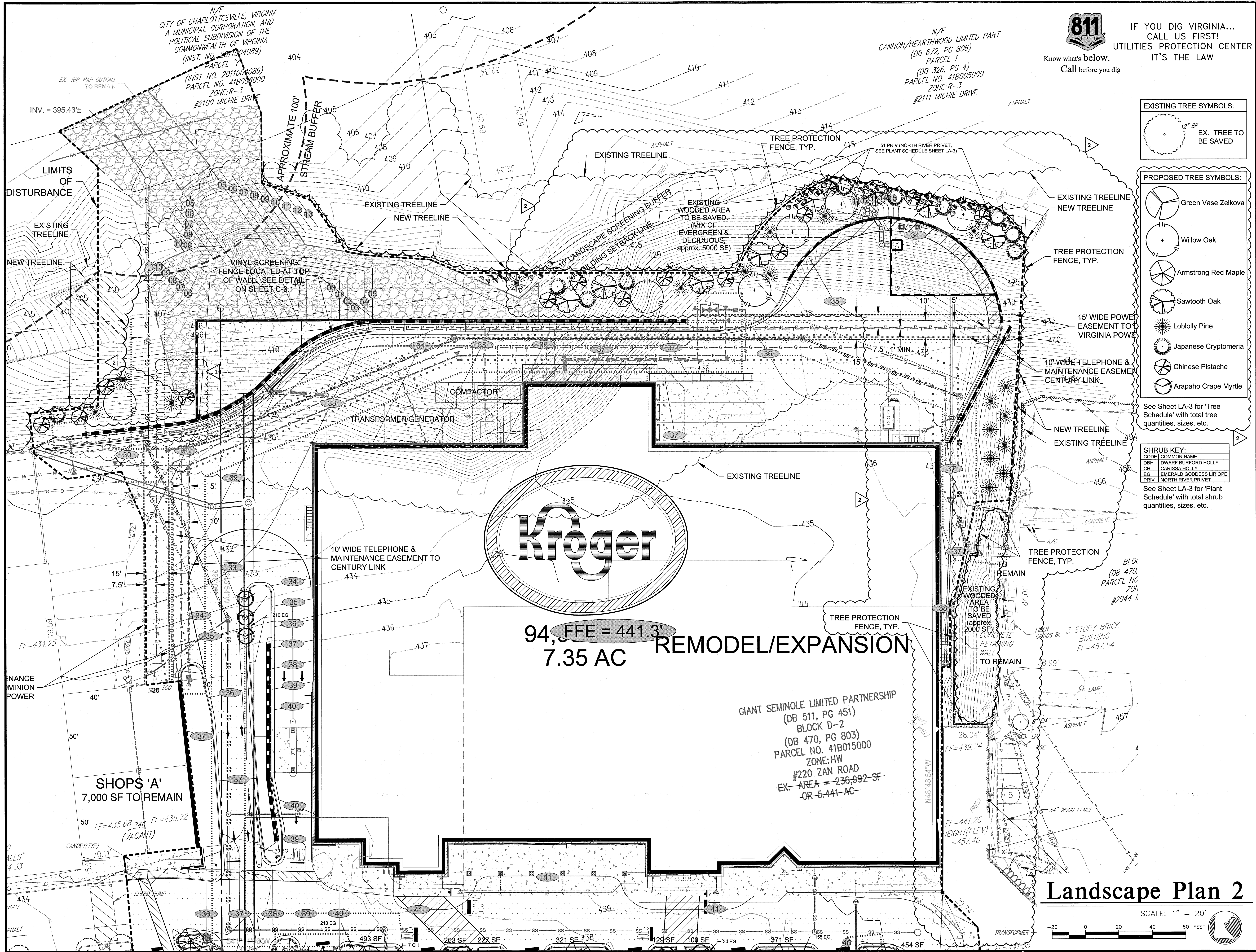


PER SEC. 34-864, BONDING REQUIREMENTS, FROM THE CHARLOTTESVILLE, VA CODE OF ORDINANCES:

PERFORMANCE BONDS:
-The director may require that landscaping shown on an approved landscaping plan be either installed or sufficiently bonded to guarantee installation, prior to the issuance of a certificate of occupancy. All landscaping must be installed by the first planting season following issuance of a certificate of occupancy.
-The performance bond shall be for an amount equal to the value of the required plants and the costs of installation, as determined by the zoning administrator following consideration of an estimate prepared by a landscape contractor, which estimate must be obtained by the developer and supplied to the zoning administrator at the time a request for issuance of a certificate of occupancy is made.
-The performance bond shall be released when all required plantings have been installed in accordance with the final approved landscape plan, as determined by the zoning administrator.
MAINTENANCE BONDS:
-A maintenance bond shall be posted by the developer in favor of the city. If the landscaping is installed prior to the issuance of a certificate of occupancy, then the maintenance bond shall be posted prior to the issuance of said certificate. If the landscaping is installed prior to the issuance of a certificate of occupancy, then the maintenance bond shall be released when the materials are planted and before the performance bond is released.
-The maintenance bond shall be in the amount of 1/2 of the value of the performance bond, and shall be held for a period of 12 months following the planting date. When existing plantings are preserved in lieu of required new plantings, the bond shall be calculated according to the replacement value of plantings that meet the minimum requirements of the zoning ordinance.
-At the end of the 12 month time period, the bond shall be released if all plantings are in healthy condition, as determined by the zoning administrator. Thereafter, landscaping shall be maintained in a healthy condition by the current owner of the property on which such materials are planted, or property owners' association (where applicable) and replaced when necessary. Replacement materials shall conform to the original landscape plan.

TREE SCHEDULE	BOTANICAL NAME	COMMON NAME	QUAN	HT.	SIZE	TYPE	Canopy Area	Total SF	REMARKS
1	ZELENYA BERRATA GREEN YASE	GREEN YASE ZELENYA	18	10-12'	2" CAL. min.	Large deciduous	300 sf	18,000 sf	BAB. FWF
2	QUERCUS PHELLOS	WILLOW OAK	18	10-12'	2" CAL. min.	Large deciduous	370 sf	20,000 sf	BAB. FWF
3	ACER RUBRUM ARMSTRONG	ARMSTRONG RED MAPLE	7	10-12'	2" CAL. min.	Large deciduous	44 sf	308 sf	BAB. FWF
4	QUERCUS ALUTISIMA	SANTOYO OAK	8	10-12'	2" CAL. min.	Med. deciduous	285 sf	4,880 sf	BAB. FWF
5	PNIS TAPIDA	LOBLOLLY PINE	18	4-6' min	-	Evergreen	207 sf	3,726 sf	CONTAINER
6	CRYPTOMERIA JAPONICA	JAPANESE CRYPTOMERIA	10	4-6' min	-	Evergreen	123 sf	1,230 sf	BAB. FWF
7	PISTACHIA CHINENSIS	CHINESE PISTACHE	14	6-7' min	-	Small deciduous	184 sf	2,576 sf	BAB. FWF
8	LAGERSTROMIA INDICA & FAURIEI	ANANAS GRACE MYRTLE	15	6-7' min	-	Small ornamental	77 sf	1,155 sf	BAB. FWF, MS
TOTAL: 22,934 sf									

<p>NOTES:</p> <p>GRASS SHALL BE INSTALLED FLUSH WITH TOP OF ADJACENT CURB OR SIDEWALK.</p> <p></p> <p>MULCH & LAWN AT CURB</p> <p>SCALE: NONE</p>		<p>PLANT SCHEDULE</p> <p>CODE EDITS</p> <p>PRV1 ILEX CORNUTA BURFORDI NANA</p> <p>CH1 ILEX CORNUTA CARISSEA</p> <p>PRV2 LIGULARIA</p> <p>PRV3 LIGULARIA</p> <p>PLANT SCHEDULE</p> <p>CONTRACTOR QUANTITIES</p> <p>ALL AREAS BEING PERMANENT</p> <p>PLANTINGS</p> <p>CONTRACTOR</p>
--	---	---



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EXISTING TREE SYMBOLS:

12" BP
EX. TREE TO BE SAVED

PROPOSED TREE SYMBOLS:

- Green Vase Zelkova
- Willow Oak
- Armstrong Red Maple
- Sawtooth Oak
- Loblolly Pine
- Japanese Cryptomeria
- Chinese Pistache
- Arapaho Crape Myrtle

See Sheet LA-3 for 'Tree Schedule' with total tree quantities, sizes, etc.

SHRUB KEY:

CODE	COMMON NAME
DBH	DWARF BURFORD HOLLY
CH	CARRISSA HOLLY
EG	EMERALD GODDESS LIRIOPE
PRIV	NORTH RIVER PRIVET

See Sheet LA-3 for 'Plant Schedule' with total shrub quantities, sizes, etc.

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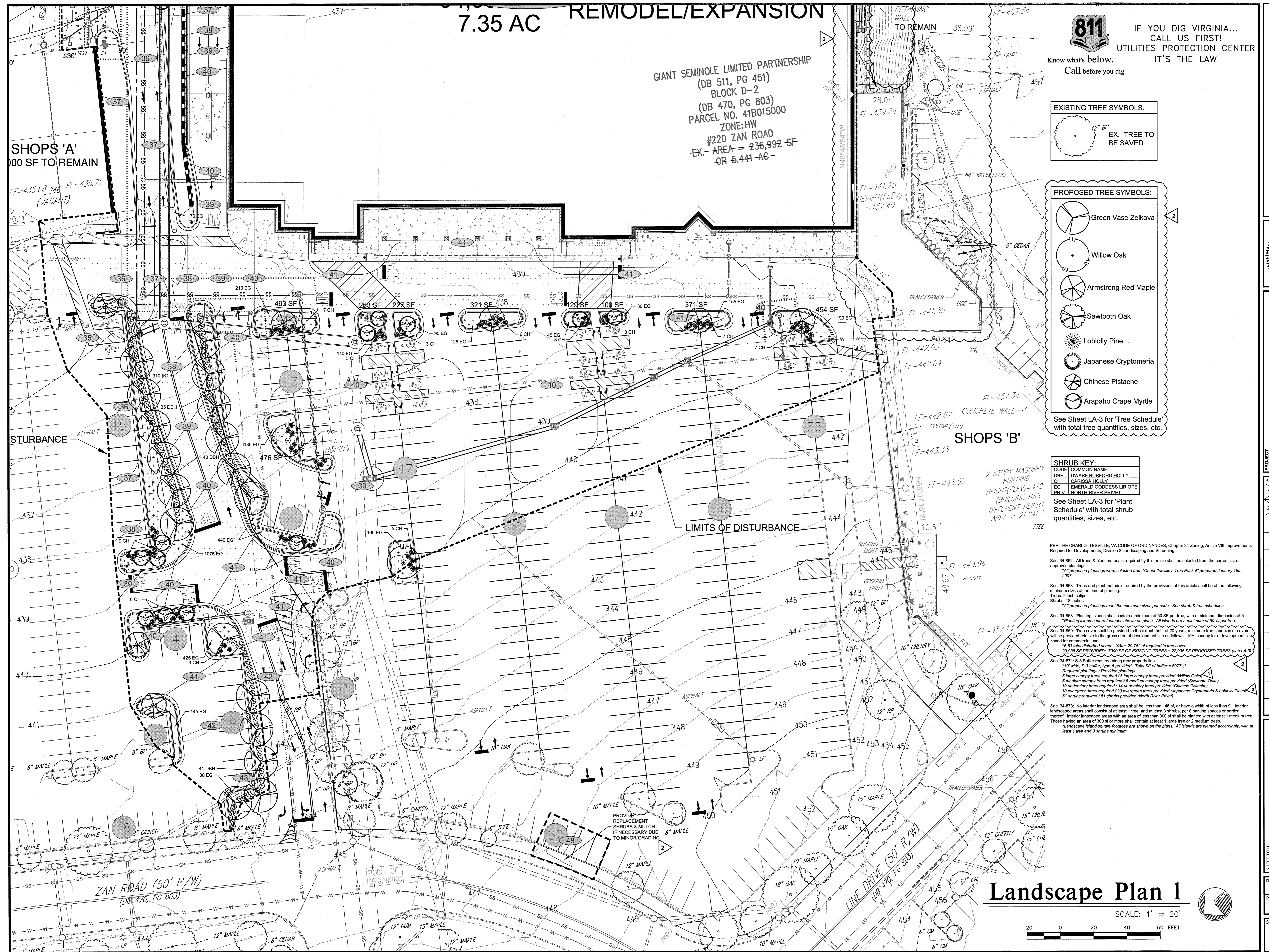
REVISIONS

NO.	DESCRIPTION	DATE
1	MINOR LANDSCAPE ADJUSTMENTS	11-20-14
2	REVISE BUILDING LOCATION	01-14-15

LANDSCAPE PLAN 2

DATE: 11-10-14
PROJECT NUMBER: 12-317
SHEET NUMBER: LA-2

Thursday, January 16, 2014 12:38:38 PM (GMT-5)
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1/5/15
ALISON VAUGHAN
LANDSCAPE ARCHITECT

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REVISIONS

NO.	DATE	DESCRIPTION
1	11-10-14	MINOR LANDSCAPE ADJUSTMENTS
2	12-31-17	REVISE BUILDING LOCATION

DATE: 11-10-14
PROJECT NUMBER: 12-317
SHEET NUMBER: LA - 1

July 5, 2002

Final Technical Report Field Monitoring of Retrofitted Stormwater Basins in the Meadowcreek Watershed
June 30, 2002

1. The Michie basin has always had a documented spring contributing to the inflow in the basin. Was any attempt made to quantify this flow volume or perform sampling on the spring? Could baseflow adjustment be made to minimize the impact of the spring on the calculations?
2. During the engineering evaluation of the dam at the Michie basin there was evidence of short-circuiting to the far north end of the dam. Additionally, hydraulic evaluation indicated that any storm classified as a 10-year storm or greater would overtop the dam and the riser structure. Were any of these flow conditions present in either the pre- or post-retrofit storms or sampling?
3. The construction of the Michie Drive basin necessitated a complete regrading of the area, with significant land disturbance. No mention was made of the construction completion dates versus the sampling periods. In the case of the Michie Basin construction, replanting was not complete until late February. Until the spring of 2002, there was a severe drought in the area, which undoubtedly impacted the regrowth and maturity of wetlands grasses, plants and trees.

The impact of scour on TSS values can reasonably be expected in a newly resceded area. Does the post-retrofit sampling represent a true "post-retrofit" condition? The status of the two basins during the time of post-retrofit sampling should be discussed, as it may significantly impact the results.

4. Further discussion of the size limitations of the Michie Drive basin may serve to explain why the PA/DA ration cannot be improved by enlarging the basin. It is surrounded on all sides by development, with the inlet and outfall locations fixed along the short axis of the oblong basin. The goal of the retrofit was to improve what currently exists. Additionally, there are large numbers of young children living near the basin, thereby requiring that the basin be maintained as a dry-basin facility.
5. Page 3, Section 2 touches on Charlottesville rainfall data. This statement does not seem to match with rainfall data I have seen for the Charlottesville area. Please expand this explanation.
6. Please explain why the pre- and post-retrofit inflow monitoring points for the Michie Drive basin were changed. Please discuss the potential impact to the data collection.
7. Page 16, Figure 4.2 This photo was taken post-retrofit. As can be seen in the photo, there are still areas where the plant life has not completely reestablished itself from the construction period.
8. Pg. 26, Section 7 The description of what was completed at the basin does not match the construction drawings. Please revise.
9. Pg. 33, Section 7.2.1 The analysis attributes the high TSS values in the Michie basin to the large sand particle sizes rather than the high numbers of particles. What was the particle size distribution? Do the sand particles appear to be from the construction site or transported into the basin via the inlets? Was there varying particle size distributions for each rainfall event?
10. Pg. 54, Item 9 The study recommends the implementation of additional measures to prevent resuspension of the sediment layer in a dry forebay. What type of measures are recommended?

DRAFT

Final Technical Report
Field Monitoring of Retrofitted Stormwater Basins
in the Meadow Creek Watershed

Submitted to:

Thomas Jefferson Planning District Commission
P.O. Box 1505
Charlottesville, VA 22902-1505

Attention : Rochelle Garwood
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Submitted by:

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June 30, 2002

ACKNOWLEDGEMENTS

This project was funded by the Virginia Department of Conservation and Recreation (DCR) through the Thomas Jefferson Planning District Commission (TJPDC) under a Section 319 grant of the Clean Water Act. The County of Albemarle, the City of Charlottesville, and the University of Virginia and the TJPDC were collaborators in this research effort.

The authors would like to thank Nancy O'Brien, Rochelle Garwood of TJPDC, David Hirschman of Albemarle County and Jennifer Whitaker of Charlottesville City for their assistance throughout the study. Robert Copper, who managed the project on behalf of DCR, is especially acknowledged for his many comments and suggestions during the course of the project. The authors thank the entire UVA Stormwater Research Group for their help in field sampling and laboratory analysis. The authors would also like to acknowledge Dr. Elizabeth Fassman, a former graduate student, for her assistance in site selection and preparation, training of laboratory personnel and field monitoring.

ACRONYMS, ABBREVIATIONS, AND SYMBOLS

BMP	Best Management Practice
COD	Chemical Oxygen Demand
DCR	Department of Conservation and Recreation
DEQ	Department of Environmental Quality
EMC	Event Mean Concentration
EPA	Environmental Protection Agency
MDL	Method Detection Limit
MRE	Mass Removal Efficiency
NURP	National Urban Runoff Program
OP	Ortho-Phosphate
SOL	Summation of Loads
SWM	Stormwater Management
TJPDC	Thomas Jefferson Planning District Commission
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids
UVA	University of Virginia
VWQS	Virginia Water Quality Standards

EXECUTIVE SUMMARY

The Upper Rivanna/Meadow Creek/Moores Creek area has long been listed as one of the high nonpoint source pollution areas in Virginia. With continuing urbanization, road building and other developments, the water quality in streams and rivers in the region have been under significant stress. Several previous studies have indicated that stormwater runoff pollution is a major contributor to the poor water quality. Best Management Practices (BMPs) are commonly used for controlling stormwater runoff pollution. BMPs, when properly designed and maintained, can serve not only for flood control but also for a certain degree of pollution removal. However, most of the existing stormwater management facilities in the Meadow Creek Watershed were designed primarily for flood control due to specific local runoff control requirements. Retrofitting of existing facilities to enhance water quality benefits has been considered an effective strategy in dealing with stormwater pollution. Information on the performance of retrofitted stormwater management facilities is rather limited. The present study was initiated in 2000 for the purpose of demonstrating that retrofitting is a viable method of controlling nonpoint sources of pollution in the Meadow Creek region. The Thomas Jefferson Planning District Commission (TJPDC) secured a Section 319 grant from the Virginia Department of Conservation and Recreation (DCR) to start the present project about retrofitting exist stormwater runoff control facilities in Meadow Creek Watershed. The University of Virginia 's Department of Civil Engineering was subcontracted by TJPDC to undertake stormwater-monitoring tasks of this project.

Two detention basins (Hillsdale Drive Basin and Michie Drive Basin) were selected to retrofit and to monitor the water quality benefits gained by implementing the retrofit in the City of Charlottesville and the County of Albemarle of the Meadow Creek Watershed. Based on the characteristics of these two detention basins and the pre-retrofitting sampling results, several retrofit technologies were conducted for both detention basins, which includes the resizing of the outlet structure, installing of the sediment forebay, and planting the vegetation. This report summarizes stormwater-sampling results conducted on these two existing urban detention basins. Baseline data

(dry weather and storm event before retrofit) and data for assessment of detention basin performance after retrofit were provided. Runoff samples were analyzed for total suspended solids (TSS), total phosphorus (TP), ortho-phosphate (OP), total nitrogen (TN), chemical oxygen demand (COD), and metals of zinc, copper and lead. The comparison of the event mean concentrations (EMCs) of these constituents for each monitoring station was presented. The removal efficiency of pollutants for each detention basin was also computed as the percent difference of the mass loading entering and leaving the detention basin. An U.S. methodology was applied to estimate the long-term TSS removal efficiency for each basin.

Results of this study revealed that detention time increased for both detention basins after the retrofit. During the study period, the average detention time increased from 13.1 hours to 36.9 hours for the Hillsdale Drive Basin, and the average detention time for the Michie Drive Basin increased from 3.1 hours to 28.7 hours. This contributes to the improvement in treating stormwater runoff for both basins. As stated before, the water quality of stormwater runoff from this study area was characterized by the event mean concentration (EMC). The average pre-retrofitting effluent EMCs are 56.4mg/l for TSS, 1.25 mg/l for TP, 0.85 mg/l for OP, 24.0 mg/l for COD, 3 mg/l for TN, and 0.18 mg/l for Zn at Hillsdale Drive Basin. After retrofitting, the average effluent EMCs of this site are 44.0 mg/l for TSS, 1.15 mg/l for TP, 0.35 mg/l for OP, 35.5 mg/l for COD, 1.25 mg/l for TN, and 0.11 mg/l for Zn, respectively. For the Michie Drive Basin, the average pre-retrofitting effluent EMCs are 1324.5 mg/l for TSS, 2.9 mg/l for TP, 1.3 mg/l for OP, 128.4 mg/l for COD, 4.5 mg/l for TN, and 0.42 mg/l for Zn. After retrofitting, the average effluent EMCs are 277.2 mg/l for TSS, 1.67 mg/l for TP, 0.8 mg/l for OP, 82.6 mg/l for COD, 2.67 mg/l for TN, and 0.19 mg/l for Zn, respectively. The calculation results of mass loading removal efficiency at the samples collected period showed that Hillsdale Drive Basin improved 50.6 % for TSS, 7.95 % for TP, 17.3 % for OP, 9.05 % for COD, 16.7 % for TN, and 10.4 % for Zn. For the Michie Drive Basin, the mass loading removal efficiency was not performed since the monitoring volume of outflow exceeded the volume of inflow for the pre-retrofitting sampling. Further research is needed to evaluate the source and extent of inflow water, perhaps from undocumented springs.

Results from four storm events monitored at the study sites indicated that the two detention basins were effective in reducing peak flows during storm events after retrofitting. For the Hillsdale Drive Basin, an average peak reduction of 74% was observed for rainfall events ranging from 0.32 in. to 0.62 in. The most intense storm monitored, with 0.56 in. within one hour, resulted in a peak reduction of 82.7%. Peak flow reduction was increased around 5% after retrofit. For the Michie Drive Basin, the peak flow rate of the outlet exceeded the maximum inflow rate and the reduction of peak flow was 72.5 % after retrofit.

The U.S. Environmental Protection Agency (EPA) methodology was applied to estimate the long-term pollution removal of these two detention basins. On the basis of some certain assumptions, the TSS removal reach 97% under both dynamic and quiescent conditions at the Hillsdale Drive Basin, and the dynamic TSS removal is 55% at the Michie Drive Basin. Results showed that the pond area ratio or PA/DA (pond area: drainage area) played an important role in TSS removal. The PA/DA is 1.25% for the Hillsdale Drive Basin and is 0.52% for the Michie Drive Basin. To achieve 70% or better TSS removal, the PA/DA ratios would need to increase to 2 % or greater at the Michie Drive Basin.

In summary, the following conclusions and recommendations can be made.

- 1). Although the two detention basins were primarily built for flood control, after retrofit, detention time for both basins increased significantly and so did the effectiveness of pollutant removal for some parameters.
- 2). The Hillsdale Drive Basin showed a certain water quality treatment performance before retrofitting. After retrofitting, the increase in water quality benefit was significant. Average mass loading removal efficiency after retrofitting was increased 50.6 % for TSS, 7.95 % for TP, 17.3 % for OP, 9.05 % for COD, 16.7 % for TN, and 10.4 % for Zn when comparing them to those from pre-retrofitting sampling .
- 3). The Michie Drive Basin showed that the pollution removal efficiencies gained by the

retrofit implementation was not as obvious as that for the Hillsdale Drive Basin. Scouring may be one of the reasons that negative removal efficiencies were calculated for this site. Further monitoring is recommended to better evaluate the water quality treatment performance of this basin.

- 4). Data for most parameters showed that the quality of post-retrofit basin outflows from both basins was better than that of pre-retrofit outflows.
- 5). Flow results showed that both detention basins provided a better water quantity control after retrofitting. The reduction of peak flow increased from 69 % for pre-retrofit to 74 % for post-retrofit condition for the Hillsdale Drive Basin, and the reduction of peak flow increased from negative values for pre-retrofit to 72.5 % for post-retrofit conditions for the Michie Drive Basin.
- 6). The performance of detention basins was affected by many factors, such as the characteristics of drainage areas, the topography, size of detention basins, and very prominently, the rainfall intensity. The results of the 06/04/02 sampling effort show the impact of a high-intensity event. High rainfall intensity apparently caused the effluent EMCs to exceed the influent EMCs for the Hillsdale Drive Basin due to perhaps the scouring and/or resuspension of the bottom materials previously deposited in the basin..
- 7). During the monitoring period, sampling data showed a wide-range of variability in pollutant removal efficiencies. To determine the long-term pollutant removal efficiency, a more long-term monitoring effort of, for example, five years, is recommended.
- 8). The small permanent pool was important to the TSS removal for the Hillsdale Drive Basin. However, due to the standing water, a significant amount of trash was seen in the pool and some floating on the water surface. Periodic cleaning, especially after large storms, is recommended.

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1. INTRODUCTION AND BACKGROUND

With the development of urbanization, more impervious areas appear and cause dramatic changes about the pollutant loads and hydrology of the watershed. As a result of this urbanization, flooding is more frequent and of higher magnitude, critical wildlife habitats are destroyed, droughts are more severe, and erosion and pollutant transport increase. However, many existing stormwater management facilities can not meet the need of this situation, since many of them were originally designed for flood control and pay little attention to water quality improvement. One of the greatest challenges to water quality control in urban areas is the need to retrofit the existing stormwater management facilities.

Study sites of this project are located on the Meadow Creek Watershed. The Meadow Creek Watershed is part of the Upper Rivanna River/Moores Creek hydrologic unit (H28) in the James River Basin in Central Virginia. Several studies have identified the Meadow Creek Watershed as having impaired water quality. The area is also on the Virginia Department of Environmental Quality's 303(d) TMDL priority list as containing polluted water due to urban nonpoint source runoff. (Fassman, 2000). According to the study performed by Dewberry & Davis in 1996, Meadow Creek has poor water quality, especially during the storm events. The sampling data from both upstream and downstream stations showed that mean stormflow concentration of TP, OP and TSS exceeded the National Urban Runoff Program (NURP) range for residential, commercial, and mixed land. The metals of Copper, Lead, Zinc, and Cadmium exceeded Virginia Water Quality Standards (VWQS) during stormflow (Table 1.1).

As one of Rivanna River's tributaries, Meadow Creek drains a watershed of approximately nine square miles, 30% of which is covered by impervious surfaces. This creates a high pollution potential for urban nutrients and urban erosion. Both the *South Fork Watershed Study* and *State of the Basin* report concluded that Meadow Creek's water quality problems were a result of urban stormwater runoff, and its water

quality problem will eventually affect Rivanna River. It's been estimated that there are about 70 aboveground stormwater facilities in Charlottesville and Albemarle, but they mainly provide flood control function. Many studies called for retrofits of these existing stormwater management (SWM) facilities in the Meadow Creek watershed, including the evaluation of existing SWM, the development of design parameters, and the establishment of a priority list of possible retrofits (Passman, 2000). Under this situation, In 1998, the Thomas Jefferson Planning District Commission (TJPD) secured a Section 319 grant from the Virginia Department of Conservation and Recreation (DCR) to start a project about retrofitting current stormwater control facilities in the Meadow Creek watershed to seek a method about improving pollution removal efficiency. The County of Albemarle, the City of Charlottesville, and the University of Virginia joined TJPD in this retrofitting research effort.

Table 1.1. The Comparisons of Meadow Creek Stormflow Water Quality Measurements to NURP and Virginia Water Quality Standards. (VWQS)

Parameter	Mean Downstream Stormflow Concentration (mg/l)	Mean upstream Stormflow Concentration (mg/l)	NURP range (mg/l)	VWQS Chronic Acute (mg/l)	
Dissolved Reactive Phosphorus	0.259	0.255	0.080-0.143	DEQ Enrichment Standard=0.2	
Total Phosphorus	0.744	0.605	0.291-0.383		
Total Suspended Solids	254	161	67-101		
Arsenic	0.1302	0.1291	0.0010-0.0500*		
Copper	0.0343	0.0258	0.027-0.033	0.007	0.009
Lead	0.0658	0.0455	0.104-0.144	0.001	0.035
Zinc	0.0417	0.1132	0.135-0.226	0.060	0.066
Cadmium	0.0030	0.0040	NR	0.0007	0.0018

Source: South Fork Watershed Study, Dewberry & Davis, April 1997.

*Range for all study sites; other ranges are for various land use.

2. PURPOSE AND SCOPE

Based on the rainfall records of Charlottesville, most rainfall occurs in the summer daily period. Consequently, The retrofit method is planned for stormwater control basins to capture runoff from these smaller storms in Charlottesville, such as a routine summer cloudburst, and to allow and enhance natural pollutant removal mechanisms to halt the flow of contaminants into Meadow Creek. In Charlottesville and Albemarle, most of 70 aboveground stormwater facilities are dry detention basins primarily designed without water quality objectives. Since the budget restrictions did not allow the retrofit of all these facilities; therefore a prioritization methodology was needed to pinpoint the retrofit projects that would yield the greatest number of benefits on the watershed scale. First of all, it is necessary to investigate all major stormwater management facilities, drainage areas in Charlottesville and Albemarle and create a database. Then, each site in the database would be evaluated its effectiveness of stormwater runoff control and prioritized its rank for retrofitting. The prioritized sites would then be retrofitted, each in turn as funding was available, to improve water quality in the Meadow Creek watershed (Skipper, 2001). According to their location, topography, land use, imperviousness and, on the basis of practical and design considerations (e.g. ownership/maintenance responsibility, accessibility, condition, volume needed to detain 10-year storm, and cost of retrofit) (Meadow, 1998), two storm water basins were selected to retrofit and to monitor the water quality benefits obtained by implementing the retrofit in the Meadow Creek watershed. One is in the City of Charlottesville (Michie Drive Basin) and the other is in the County of Albemarle (Hillsdale Drive Basin), both on government-maintained property-for retrofitting.

The Department of Civil Engineering in UVA was subcontracted by TJPDC to perform water quality data collection and analysis at each site before and after retrofitting. The pre-retrofitting data collection was performed in the summer and fall of 2000 for a total of two storm events. The post-retrofitting data collection was performed in the spring and summer of 2002 for a total of four storm events. This

report summaries the results of stormwater sampling and evaluates the performance of the two detention basins after retrofitting.

As a sub-contractor to TJPDC, the University of Virginia has the following objectives:

- I. To monitor the water quality impacts of the BMP retrofit implementation. The effort includes pre-and post-retrofitting sampling of the selected basins in the Meadow Creek watershed.
- II. To develop a methodology which will permit the transfer of results on BMP performance and water quality impact to other parts of the Meadow Creek watershed and to other watersheds.
- III. To estimate the expected long-term pollution removal efficiency resulting from the retrofit for both detention basins.

*Monitoring the effect of construction
retrofits on water quality*

3. LITERATURE REVIEW

Stormwater management facility retrofits involve modifying existing runoff control systems to enhance water quantity and quality control functions and retrofit designers need to know the expected effect of changes in different design parameters on the pollutant removal efficiency of the stormwater management facilities. Further, urban retrofits will involve a wider range of design variations than conventional best management practices (BMPs) installed during new development (Urban, 1994). Thus, it has become more important than ever to assess the effect of various design parameters on BMP performance. For example, a United States Geological Survey study of environmental research needs reports there is an immediate need to develop a coordinated program to address how to carry out water quality retrofits. Their research goals involve identifying elements of existing facilities that may be modified to provide water quality protection, and finding and evaluating existing retrofits (TRB, 2000).

Retrofitting existing stormwater management facilities is a new field of civil engineering, which will presents many challenges and benefits. For detention basins, there are many retrofitting opportunities, which have been used and proved.

3.1. Conversion to Allow Extended Detention

Frequently the most feasible retrofit options involve adjustments to existing facilities. Many older systems have some form of a detention pond that would offer several options for improvement. A common retrofit is the conversion of a dry detention basin to a dry extended detention pond or wet pond, which is expected to extend storage time and to achieve the added water quality benefits. Although wet ponds have shown the best pollutant removal performance, in some cases, a dry extended detention pond is preferred. Due to the shorter detention in a dry extended detention basin, there is less risk of releasing warm, anoxic water downstream. In addition, the lack of a permanent pool can allow the land to be used for recreation during dry periods, and in general create a safer environment for area residents. When this is the case, retrofits can address the problem of resuspension of pollutants through the introduction of vegetative cover, regular sediment removal, or the addition of a pre-sedimentation basin. A pre-sedimentation basin (or stilling/settling basin) is a vegetated basin formed by building an underwater barrier dam across each inlet. The resulting basin allows the settling time that would otherwise be absent in a dry detention pond. Like a sediment forebay in a wet pond, stilling basin dissipates the energy of incoming flow and allows larger sediments to settle in an area where they can be easily removed (Price *et al.*, 1995). However, if a sediment forebay is installed in a dry pond, some measures should be taken to prevent a hard "first-flush" from pushing the sediments deposited during the last storm event to the receiving water bodies.

3.2. Outlet Modification

The primary method of converting a dry extended detention basin or a wet pond for flood control to a water quality control basin is to modify the outlet structure. The main mechanism of this method is to reduce water release rate and extend detention time and help sediment settle. Outlet modifications can range from simple, low-cost techniques, such as reducing the orifice size by placing a low berm or metal plate in front of the existing outlet, to more extensive measures involving the complete replacement of the outlet and the installation of weirs or perforated risers. For pollutant

removal, the orifice diameter should be sized such that the overflow rate (i.e. release rate/ surface area) is less than the pollutant settling velocity (Schaefer, 1989). Table 3.1 gives typical settling velocities for a range of particle sizes.

Table 3.1. Settling Velocities of Mineral Particles in Still Water (Ferguson, 1998)

Particle Size	Settling Velocity (ft/day)	Time to Settle 1 ft
Gravel	283,000	0.3 seconds
Coarse sand	28,300	3.0 seconds
Fine sand	2,860	38.0 seconds
Silt	43.6	33.0 minutes
Clay	0.00436	230 days
Colloids	0.000436	63 years

As a general rule, to provide water quality benefits, the treatment volume of a basin should provide at least 0.5 inches of storage per acre of drainage area (Schaefer, 1989). Figure 3.1 shows the required orifice diameter as a function of drainage area, assuming 0.5 inches of storage in a 5-foot-deep basin. As shown, drainage areas of 60 to 100 acres require a detention facility with a reasonable 6-8 inch outlet to achieve a 24-hr extended detention time. However, for smaller drainage areas, the orifice diameter becomes excessively small and impractical due to an increased susceptibility to clogging (Roesner *et al.*, 1991). In general, the orifice diameter should not be less than 3 inches to prevent clogging. (In an EPA report, clogged low-flow outlets were cited as the primary source of maintenance problems in detention basins (USEPA, 1993).)

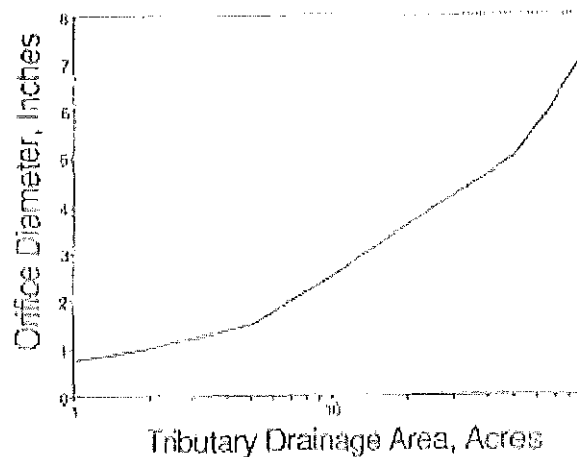


Figure 3.1. Orifice Sizing to Control Det. Basin Discharge (Roesner *et al.*, 1991)

One way to achieve the benefits of improved detention time and reduced release rates, even for smaller watersheds, is the use of perforated pipes, membranes, or gravel at the outlet instead of a single opening. For example, a perforated riser outlet is a vertical section of pipe with many holes and typically wrapped with filter fabric and backfilled with riprap (Lower, 1997). This option can remain unclogged while yielding the equivalent discharge of a single orifice with a less than two-inch diameter (Newman, 1999). A similar answer is the installation of a 100 tch weir at the outlet. Because the width of the notch increases with height, a v-notch weir allows discharge at higher flow rates if the narrower part of the weir becomes clogged at the lower elevations (Lower, 1997). A final solution is an outlet pool (also termed a micropool or bottommarsh) at least three feet deep and with flat side slopes. Gentle slopes provide shoreline stability and allow the establishment of wetland vegetation. In the mean time, the low flow outlet is submerged and less likely to be clogged by floating debris or accumulated sediment, particularly if the pipe is placed on a reversed slope (Price *et al.*, 1995). In an extended detention pond, a micropool also provides some minimal water retention, thus enhancing biological uptake and avoiding resuspension of pollutants with the next storm event.

While a reduced outlet diameter improves the detention time for the water quality design storm, additional modifications must be made to the outlet structure and basin to compensate for the reduced outflow rate during larger storms. One option is outlet structures with two or more orifices that allow water to be released at greater rates as the water level reaches higher stages. For example, consider the following scenario: a 60 inch outlet pipe is installed to accommodate a 100-yr storm; an eight-foot diameter catch basin with two orifices and an open top is installed in front of the pipe; a 13 inch opening above the normal water level imitates the original release rates for small to moderate events; events with a greater than 2-year return period overtop the outlet structure and enter the 60 inch pipe; an emergency overflow embankment with a permanent erosion blanket allows for flows greater than the 100-year design flood; and finally, a 4 inch low flow opening below the normal water level can control flow from a less than 0.45 inch rain, slowing the release rate and allowing detention for the first flush. This structure demonstrates a system that can provide detention of a storm of almost any size (Price *et al.*, 1995). In addition to creating a multiple-release outlet, it may also be necessary to increase the overall basin storage volume to ensure the basin is capable of controlling 25-, 50-, and 100-year events (Roesner *et al.*, 1991).

3.3. Regrading and Planting

Decreasing the outlet size of a dry basin may exacerbate a ponding problem. Ponding, a type of basin failure, occurs when standing water remains in a dry facility. As dry detention basins are sometimes used for recreational purposes between storm events, and because standing water may draw mosquitoes, ponding is an important community concern. Ponding can be eliminated by regrading the basin so that the invert of the outlet is lower than all points in the basin, by resetting the outlet itself, or by planting wetland species in low areas. Regrading and the addition of wetland plants are important retrofit techniques for other reasons as well. Regrading to lessen side slopes reduces the chance of erosion, which would create heavy sediment loads on the detention basin. Gradual slopes also allow easier maintenance (i.e. trash pickup and mowing) and reduce the risk of a person's slipping down the slope. Finally, side slopes with a less than 3:1 grade allow plants to establish substantial roots and seed banks,

creating an abundant vegetative cover. Vegetated zones are defined by water inundation periods. For the most stable and functional side slopes, species that can tolerate frequent submersion should be planted at the bottom of the slopes, and plants needing drier environments should be planted at higher elevations (Lower, 1997).

3.4. Increasing Length-to-Width Ratios

Planting of wetland vegetation introduces another trade-off to consider when designing a detention basin retrofit. There may be a conflict between the need to maximize detention time and the desire to maintain a diverse plant community. Plants that are completely covered for more than three days are less likely to survive than those submerged for shorter periods (Price *et al.*, 1995). In some cases lengthening the flow path in a basin will allow long detention times while still maximizing the benefits of wetland vegetation. This can be achieved through berms, meandering channels, or the creation of multiple wetland cells or pools (Lower, 1997).

The length-to-width ratio is a measure of the flow path in a basin and can be defined as:

$$L/W_e \quad \text{(Eq.3.1)}$$

where, L = flow path from inflow point to outflow point

W_e = effective width = A/L

A = pond surface area at normal pool elevation (Schaefer, 1989)

For a wet pond, maximizing the $L:W$ ensures that incoming runoff displaces the water from previous events. The recommended minimum length-to-width ratios are 3:1 for wet ponds, and 4:1 for dry ponds (Lower, 1997). One method of increasing the $L:W$ and preventing short-circuiting is to change the inlet/outlet orientation and geometry of a basin. An ideal basin is either long and narrow with the inlet and outlet at opposite ends of its major axis or the basin tapers outward from the inlet to the outlet, thus slowing influent velocity as the cross-section expands (Schaefer, 1989).

3.5. Short-Circuiting Prevention

Increasing the length-to-width ratio of a basin is an important measure to prevent short-circuiting. Short-circuiting is the term used to describe situations in which the actual residence time for a runoff parcel is significantly less than the theoretical detention. Any method of velocity dissipation serves to prevent short-circuiting. Retrofits providing this benefit include stilling basins, baffles, and energy dissipaters. Baffles can be easily constructed using materials excavated during grading. Energy dissipaters are shaped such that their hydraulic properties reduce the energy of incoming flow. In a dry extended detention pond, a major step to minimize short-circuiting is the removal of paved low-flow channels (Schaefer, 1989). Low-flow channels allow baseflow and runoff from small storms to flow directly through dry basins with little or no detention. These channels can be replaced with vegetated swales to slow the runoff and to encourage infiltration (Dreher, 1999). Finally, for a wet pond, increasing the pond depth can prevent short-circuiting.

3.6. Depth Adjustments

The depth of a basin may influence pollutant removal in several ways. Increasing pond depth can help to prevent wind, density, and velocity currents, which cause short-circuiting and hinder settling. In addition, the large cross-sectional area in a deeper basin serves to lower flow velocity. Finally, basin depth must be sufficient to allow storage of settled sediment without greatly reducing the total storage capacity of the basin (Schaefer, 1989). In general, if an additional volume of 0.5 inches per acre of watershed is added for sediment storage, sediment need only be removed once every 20 years (Ferguson, 1998). However, as previously mentioned, there is a trade-off between increasing basin depth and maintaining a diverse wetland plant community (Price *et al.*, 1995). Furthermore, there are problems with thermal stratification and anoxic conditions if a basin is too deep (Lower, 1997). Shallower pools (with a large surface area for a given volume) expose a larger proportion of the water to air and light, thus supporting the microbial activity that increases the uptake and decomposition of pollutants (Ferguson, 1998). Just as release rate should be based on settling velocities, basin depths should be chosen to maintain flow velocities less than ten times the design

settling velocities of critical pollutants for routine peak flows (Schaefer, 1989). In general, the recommended average depth is between three and six feet (Lower, 1997).

3.7. Other BMPs in Series

Finally, detention facilities can be enhanced by placing them in series with other best management practices. Dry detention basins may be combined with infiltration trenches (which typically can only treat the first flush volume) to provide additional peak flow control and pollutant removal (USEPA, 1999). Level spreaders may be used to spread collected flows into sheet flow, thus dissipating the flow velocity and distributing the water evenly across vegetated areas (Townsend *et al.*, 1999). Sand filters and water quality inlets may be used to treat the first flush of runoff before it enters a detention area. For sand filters, pollutants are strained out as the runoff passes through a sand-filled chamber. These filters are best at removing sediment and trace metals, but they have also had success in removing nutrients, BOD and fecal coliform. Sand filters require frequent maintenance to remain effective. Water quality inlets are underground chambers designed to separate out sediment, grit, and oil from parking lot runoff before the water is discharged into a detention basin. These, too, must be cleaned out at least twice a year. Placing other BMPs in series with detention basins increases the longevity of the basins by preventing the basins from filling with settled sediment and by storing the sediment in an area where it will not become resuspended (Lower, 1997).

3.8. Design Considerations

3.8.1. Factors Affecting Site Selection and Design

There are many factors to consider when choosing a site for a retrofit and determining which retrofits will provide the most benefits.

Physical Factors

- Size and shape of available land
- Types of soil and vegetation
- Wetlands, floodplains, and riparian areas
- Natural drainage ways (not streams)

- Special habitats or geological formations
- Topography, potential for erosion
- Height of water table, depth to bedrock
- Centralized sewer or drinking water systems
- Susceptibility to freezing
- Drainage area, land uses (Shaver, 1999) (USEPA, 1999)

Hydrologic Factors

- Recharge areas, availability of supplemental water
- Tidal effects
- Receiving water concerns (e.g. temperature, nutrient levels)
- Runoff volume and flow rates
- Average rainfall frequency, duration, and intensity
- Downstream flooding
- Location of watershed
- Location within watershed (i.e. upper, middle, lower)
- 1st, 2nd, or 3rd order streams receiving discharge (Shaver, 1999)

Social Factors

- Potential for future development
- Safety concerns
- Community acceptance
- Maintenance accessibility
- Cost of land and other resources
- Local regulations or requirements
- Aesthetic considerations
- Experience of developer or contractor with a given BMP
- Types of pollutants (USEPA, 1999)

Generally, the best candidates for retrofits can often be identified by a few distinguishing site characteristics. First, the site must have a readily identifiable and measurable problem, for example, excessive streambank erosion, high pollutant loads, or frequent flooding. In addition, upstream drainage areas should typically consist of

commercial/industrial and high-density residential areas. Ideally, the retrofit benefits one of the watershed's larger tributaries, thus reducing the number of retrofits needed within the entire watershed to reach management goals. Finally, retrofits should be focused where existing facilities are ineffective (Price *et al.*, 1995).

In selecting a site, it is important to consider the effect of a retrofit on a watershed scale and the potential for several retrofits within one watershed to disrupt one another's effectiveness. For example, at its outlet, a detention basin will reduce the peak flow rate, but the downstream effect depends on how the discharge combines with flows from other tributaries. Delayed peak flows that then overlap downstream may cause new, higher combined peak flows in downstream areas that may not have previously experienced flooding problems. It has been estimated that this happens with 5-10 percent of basins (Ferguson, 1998).

3.8.2. Summary of Detention Facility Design Parameters

All of the above factors combine to influence the selection of retrofit design parameters. These decisions, in turn, determine the pollutant removal performance of the BMP. Detention facility design parameters that will affect removal efficiencies include:

- Surface area
- Length-to-width ratio
- Depth
- Maximum volume
- Permanent pool volume
- Local drainage area
- Maximum discharge rate
- Detention time (dry extended detention basin)
- Residence time (wet pond)
- Shoreline slopes
- Percent vegetated area
- Frequency of maintenance
- Forebays, outlet pools, stilling basins, filters

In particular, previous studies have related pollutant removal efficiency to specific pond area (i.e. the ratio of the pond surface area to the local drainage area), the ratio of the permanent pool volume to the volume of runoff from an average storm, and detention time.

4. FIELD SAMPLING METHODS

The research objectives were implemented by sampling the inflow and outflow for each detention ponds during storm events, each monitoring site was equipped with Sigma 900 MAX automatic samplers and a rain gage. During storm events, samplers collected continuous flow, rainfall data, and runoff samples at specific time intervals. Generally, flow weighted composite samples were analyzed and event mean concentrations (EMCs) were used to determine pollutant removal efficiencies.

4.1. Site Characteristics

Two sites (the Hillsdale Drive Basin of the City of Charlottesville and the Michie Drive Basin of the County of Albemarle) were selected in this research. Table 4.1 summarizes the characteristics of the two sites.

Table 4.1. The Characteristics of the Two Monitoring Sites

Name	Location	BMP type	Runoff type	Drainage Area(acre)
HD Basin	Hillsdale Drive Charlottesville	Detention Pond	Commercial, Forest, Residential area	73.8
MD Basin	Michie Drive Charlottesville	Detention Pond	Commercial, Forest Residential area	79.8

4.1.1. Hillsdale Drive Basin

The Hillsdale Drive dry detention basin, in Albemarle County, drains a 73.8-acre watershed; 42% of the watershed is impervious. The site receives stormwater

runoff from a shopping center, residential and forested areas. An estimated 35% of the watershed is commercial, 35% is multi-family residential, and 30% is forested as determined from a 1996 aerial photograph. Runoff enters the basin through a 60-inch diameter concrete pipe and flows through a tree-lined channel to a 27-inch diameter outlet pipe (24-inch diameter outlet pipe after retrofitting). After retrofitting, a rock check dam was constructed across the channel near the outlet. A small permanent pool of water exists and is surrounded by a variety of wetland plant species. The general view of this site is presented in Figure 4.1 and a topographic map of the site, generated from a November 2000 site survey can be seen from Appendix A.

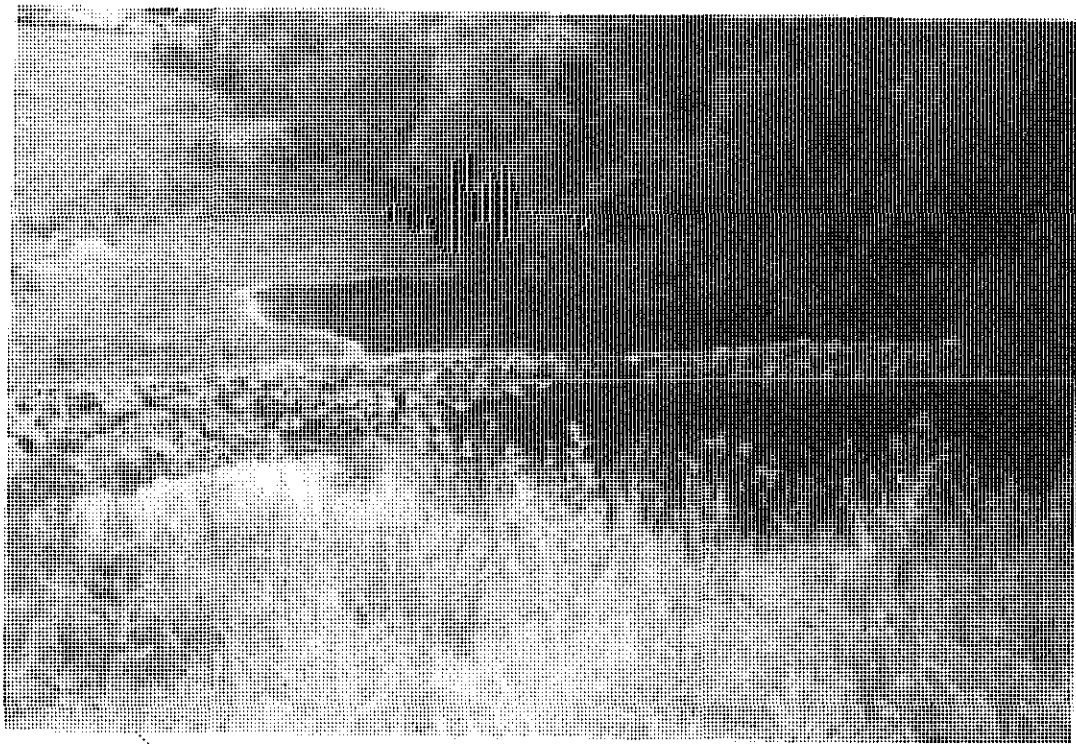


Figure 4.1. The General View of Hillsdale Drive Basin, Charlottesville

4.1.2 Michie Drive Basin

The Michie Drive basin is a dry detention basin, which is located within the Charlottesville City limits, slightly under a mile from the Hillsdale Drive site. It drains a 79.8-acre watershed; approximately 50% of the watershed is impervious. A 1994

aerial photograph indicates that approximately 73% is commercial and 27% is forested in the watershed. The primary inlet is a 60-inch diameter concrete pipe that empties into a small pool. Water leaving the pool flows through a tree-lined channel to a concrete outlet structure with a small orifice. A second inlet discharges into a side channel that joins the main channel approximately one-third of the way between the pool and the outlet. There is no baseflow in the side channel. For the pre-retrofitting sampling, the second inlet is a 22-inch diameter concrete pipe. For the post retrofitting sampling, the second inlet has been changed, which are close to the main detention pond and a rectangular weir was used for the flow calculation. The basin is designed to remain dry except during a runoff event and the specified detention period afterward. The general view of this site is presented in Figure 4.2. A topographic map of the site, created from a November 2000 site survey, can be seen from Appendix B.

why
was this
changed?



Figure 4.2. The General View of Michie Drive Basin, Charlottesville
(After construction)

*

4.2.Preparation of Sampling Sites

First of all, monitoring stations were installed at appropriate inlets and outlets for each site. The site identification numbers are presented in Table 4.2. Each station was equipped with an American Sigma 900MAX automatic sampler. Plywood boxes were used to house the automatic samplers in the field. Then the automatic samplers were calibrated in the UVA Stormwater lab and programmed for sampling and flow measurements at each site in accordance with the *American Sigma Operation and Maintenance Manual for the Sigma 900MAX Portable Sampler* (American Sigma, 1998). The additional calibrations were made in the field when necessary. The sampler intake strainer and depth sensor were secured with a hose clamp and positioned in the mainstream of the inlet and outlets parallel with the flow. Field preparation also included the construction of weirs to measure flows where necessary (i.e. the Michie Drive Basin inlet 2). A tipping bucket rain gage was set up at each site for rainfall record.

Table 4.2. Site ID

<u>Site Description</u>	<u>ID</u>
Hillsdale Dr. Inlet	2901
Hillsdale Dr. Outlet	2902
Michie Dr. Inlet	74301
Michie Dr. Outlet	74302
Michie Dr. Inlet 2	74303

4.3. Sampling Procedure

Storm event sampling was used to assess the pollutant removal of the detention ponds for each site. As mentioned before, American Sigma 900 MAX portable automatic samplers were used to collect samples automatically at specified time interval once the water level rose to a certain height and triggered the samplers. The samplers then measure and record the simultaneous water level, flow rate through depth sensor-a pressure sensitive transducer, and rainfall data were logged by the sampler using the tipping bucket rain gage. Samples were automatically collected at the specified time interval by a high-speed peristaltic pump equipped with a Teflon-lined polyethylene or tygon intake line with a 0.95-cm inner diameter attached to a strainer.

An American Sigma Data Transfer Unit was used to transfer the logged data from each site within maximum 24 hrs. Logged data then transferred to UVA Stormwater lab computer and analyzed and calculated with INSIGHT software.

Stormwater samples were primarily analyzed as flow-weighted composites, which would represent the water quality and provide an average concentration of pollutants for the entire storm event. Once the samples were composited they were preserved with acid when necessary, in accordance with the laboratory quality assurance/quality control protocol. Samples were sent to the EnviroCompliance Laboratory for metal analysis (pre-retrofitting oil and grease were also sent out for analysis) and the other parameters were analyzed in the UVA Stormwater lab.

4.4. Sampling Strategy

Sampling for this project involved two parts: pre-retrofitting and post-retrofitting. It was conducted under two sets of conditions: dry weather and wet weather.

Pre-retrofitting monitoring began in the spring of 2000 and continued through the fall. Due to the construction of the retrofit and the limitation of weather condition, post-retrofitting sampling was conducted from April to June of 2002. Samples were collected using both grab sampling techniques and the automatic sampler. During the period of monitoring, the data and samples collected from several storms could not be used to analyze pollutant concentrations due to sampler problems. The pre-retrofit sampling was completed with two full baseflow data sets and two full storm event data sets at each basin. Post-retrofitting sampling was completed with three full storm event data sets at the Michie Drive Basin, four full stormwater event data sets at the Hillsdale Drive Basin, and one full baseflow data set for both sites.

Flow was measured at inlets and outlets. Manning Equation with a user defined pipe diameter, slope and roughness coefficient was applied to convert water depth to flow for regular open channels. When weirs were constructed, the weir equation was applied to determine flow for irregular channels.

The Manning formula for open channel flow is:

$$V = (1.49/n) R^{2/3} S^{1/2} \quad (\text{Eq. 4.1})$$

where,

V = channel velocity (ft/s),

$R = A/P$, the hydraulic radius (ft),

A = cross-sectional area of channel (ft²),

P = wetted perimeter of the channel (ft),

S = energy slope, this equals the slope of the channel bed under uniform flow assumptions,

n = roughness coefficient

1.49 = conversion factor from SI units (Bedient *et al.*, 1992).

The average roughness coefficient $n = 0.013$ is the recommended value for a partly full concrete closed conduit. The following pipe slopes were determined from site surveys: Hillsdale Dr. Inlet (2.38%), Hillsdale Dr. Outlet (0.86%), Michie Dr. Main Inlet (2.92%), Michie Dr. Secondary Inlet (1% estimate for pre-retrofitting), Michie Dr. Outlet (0.13%).

For the Michie Drive Basin Inlet2, the post-retrofitting sampling use the weir's equation to calculate the flow. The equation is:

$$Q = [(3.27 + 0.04(H/H_c))(L - 0.2H)H^{1.5}], \quad (\text{Eq.4.2})$$

where

Q = discharge, cfs

H = head above weir crest excluding velocity head, ft

H_c = height of weir crest above channel bottom, ft

L = horizontal weir length, ft

4.4.1. Dry-Weather Sampling

Baseflow sampling establishes background pollutant concentrations. This data provides a basis of comparison for storm event samples to better assess the extent of the pollution that is contributed by non-point source urban runoff as opposed to pollutants that are continuously present in the stream (e.g. from routine, point-source discharges). Baseflow samples were collected at a minimum of once every other month after a dry period (i.e. no precipitation) of at least 72 hours. Budget restrictions prohibited more extensive sampling. Dry-weather samples were collected using a grab sampling

technique. At each site, the sampling containers were submerged and filled as close to the location of the automatic sampler strainer as possible. Two dry weather sampling for pre-retrofitting and one for post-retrofitting sampling were conducted in this study.

4.4.2. Wet-Weather Sampling

Storm event sampling consisted of a combination of grab sampling and automatic sampling. Only storm events preceded by at least 72 hours of dry weather were sampled according to the recommendation from Environmental Protection Agency (EPA), to make sure that there are enough contaminants accumulated on the ground. The American Sigma 900MAX sampler was programmed to begin sample collection when the water depth in the channel rose to a given trigger level.

Sampling intervals during the first flush period are shorter than during later periods because the flow magnitudes (and thus pollutant concentrations) change more rapidly in the rising limb of the hydrograph than during the falling limb, or post-peak, portion of the hydrograph.

5. LABORATORY ANALYSIS

5.1. Analytical Parameters

Based on the available laboratory equipment, cost of analysis, and the recommendations from the NURP (Table 5.1), the following water quality parameters were selected for analysis at each basin: total suspended solids (TSS), total phosphorus (TP), ortho-phosphate(OP), chemical oxygen demand (COD), copper (Cu), zinc (Zn), lead (Pb), total nitrogen (TN). Oil and grease (O&G) was monitored for pre-retrofitting and then stopped due to the low concentrations.

Table 5.1. Recommended Urban Runoff Analytical Parameters

Conventional Parameters	Nutrients	Metals	Biological Parameters
pH	Total Phosphorus*	Copper*	Fecal coliform
Total suspended solids*	Soluble phosphorus	Lead*	
Biological oxygen demand	Total kjeldahl nitrogen*	Zinc*	
Chemical oxygen demand*	Nitrate/nitrite nitrogen		
Settleable solids			
Temperature			

*Pollutants analyzed for this study

Source: EPA(1991)

5.2. Sample Preparation

Samples were collected as soon as possible (within a maximum of 24 hours) after a storm occurred. As mentioned in section 4.3, composite samples were made according to flow-proportional method. Meanwhile, budget restrictions for the overall project (pre- and post-retrofit monitoring) require that samples also be analyzed as flow-weighted composites. The composite samples were then refrigerated and acidified (if required) as indicated in Table 5.2.

Table 5.2. Sample Preservation Requirements

Parameter	Container	Preservation	Analytical Volume Required (mL)	Maximum Holding Time
TSS	Polyethylene	Cool, 4°C	>250	7 days
OP	Polyethylene	Cool, 4°C	5	2 days
TN	Polyethylene	Cool, 4°C H ₂ SO ₄ pH<2	2	28 day
TP	Polyethylene	Cool, 4°C H ₂ SO ₄ pH < 2	5	28 days
COD	Polyethylene	Cool, 4°C H ₂ SO ₄ pH < 2	2	28 days
Cu, Zn, Pb	Polyethylene	Cool, 4°C HNO ₃ pH<2	10	6 months
Oil and Grease	Glass	Cool, 4°C H ₂ SO ₄ pH < 2	>500	1 month

Prior to each sample collection, the polyethylene containers for TSS, OP, TP, TN, COD, and metals were thoroughly washed with a phosphate free detergent, rinsed with

tap water, acid-rinsed with 1:1 HCL, and finally rinsed with deionized water. Glass containers were used for oil and grease analysis to minimize sorption losses.

5.3. Analysis Techniques

Metals and O&G analysis were performed by Central Virginia Laboratories & Consultants (CVLC) for the pre-retrofitting sampling. Midway through the post-retrofitting sampling, this analysis was switched to EnviroCompliance Laboratories (EC) for a lower cost. All other constituents for this project were conducted in the University of Virginia Stormwater Laboratory. Table 5.3 lists methods and procedures used for this study and their equivalents. The table also includes the method detection limit (MDL) for each parameter. Analyses for TP, OP, TN, and COD followed procedures described in the *Hach DR/2000 Spectrophotometer Handbook* (Hach Company, USA, 1991). All experimental techniques comply with the *Standard Methods for the Examination of Water and Wastewater* (Eaton et al., 1995).

Table 5.3. Analytical Parameters and Procedures

Parameter	Method	Procedure (and Equivalents)	MDL (mg/L)	Analyst
TSS	Gravimetric	Standard Methods 2540D	2.5	UVA
TP	Spectrophotometric	Hach Method 8190 (EPA 365.2, SM 45000-PE)	0.1	UVA
OP	Spectrophotometric	Hach Method 8048 (EPA 365.2, SM 4500-PE)	0.1	UVA
COD	Spectrophotometric	Hach Method 8000	5.0	UVA
TN	Spectrophotometric	Hach Method 10071	1	UVA
Cu	Total Copper	EPA 220.1	0.020 (0.05)	CVLC (EC)
Pb	Total Lead	EPA 239.1	0.1 (0.20)	CVLC (EC)
Zn	Total Zinc	EPA 289.1	0.005 (0.02)	CVLC (EC)
O&G	Oil and Grease	EPA 1664	5.0	CVLC

6. DATA ANALYSIS AND PRESENTATION

There are three methods that are most commonly used to calculate BMP efficiency. That is, the ^①mass removal efficiency (MRE) method, the ^②event mean concentration (EMC) method, and the ^③summation of loads (SOL) method (Development, 1999). Results will vary depending on the methods used. In general, concentration based techniques yield lower efficiencies than mass-based techniques (CWP Art#64 2000).

6.1. Mass Removal Efficiency (MRE) Method

The first method calculates removal efficiency for each individual storm based on a mass balance of the loads entering and leaving the BMP. The mean value over the entire monitoring period is taken as the overall efficiency. The mass removal efficiency for a single event is calculated as:

$$MRE(\%) = \frac{(Volume\ in \times Concentration\ in) - (Volume\ out \times Concentration\ out)}{(Volume\ in \times Concentration\ in)} \times 100$$

(Eq. 6.1)

Several assumptions are made when this method is used. First, it assumes that storm size does not have a big affect on the average BMP performance; all storms are weighted equally. Secondly, any storage and later release of pollutants from a single storm is assumed to be negligible. Being a storm-by-storm analysis, the MRE method does not consider that, for BMPs with a permanent pool, outflow may not be related to inflow. In other words, the outflow may not contain runoff from the current storm. Instead, the outflow may mostly consist of the "old" water that is displaced by the inflow. A possible disadvantage of this method is that both inflow and outflow data must be available for every storm (Development, 1999). In this study, however, both inflow and outflow were collected.

6.2. Event Mean Concentration (EMC) Method

The second method to determine pollutant removal is the calculation of the event

mean concentration (EMC) removal efficiency. Event mean concentrations are determined from analyses of flow weighted composite samples or from flow weighting of discrete measurements. When a composite is created, the EMC for the individual event is just the concentration in the composite sample.

When several discrete samples have been analyzed, the EMC for the individual event is defined as:

$$EMC = \frac{\sum_{i=1}^{\# \text{ measurements}} (\text{Volume during period } i) \times (\text{Avg Concentration for period } i)}{\sum_{i=1}^{\# \text{ measurements}} (\text{Volume during period } i)}$$

(Eq. 6.2)

EMC removal for the entire monitoring period is calculated as:

$$EMC \text{ Efficiency}(\%) = \left(1 - \frac{\text{average outlet EMC}}{\text{average inlet EMC}} \right) \times 100$$

(Eq. 6.3)

The quantity in parentheses is termed the efficiency ratio. Because the EMC efficiency is in terms of average concentrations, and not mean efficiencies on a storm-by-storm basis, corresponding inflow and outflow measurements are not needed. All the data can be used, even if some data points are missing, because the method assumes that some missing outflow or inflow concentrations will not significantly affect the calculated average EMC. Of course this method assumes that if all storms were monitored, the average inlet and outlet EMC's would be similar to those that were monitored. Like the MRE method, for the EMC method, all storms are weighted equally regardless of magnitude. In other words, removal efficiencies achieved for smaller, cleaner storms have the same influence as those relating to larger values (Development, 1999). This characteristic should be especially considered if pollutant levels for some storms are near irreducible concentrations or the action of stormwater washing is intensive. In these

cases, the resulting removal efficiency may be poor, although additional treatment would not add any benefits.

6.3. Summation of Loads(SOL) Method

The final efficiency calculation is the summation of loads (SOL) method. The SOL efficiency is based on the total mass entering and leaving the BMP over all monitored events. SOL removal efficiency is calculated as:

SOL Efficiency(%)=

$$\left(\frac{\sum_{i=1}^{\# \text{ storms}} \text{Volume in } (i) \times \text{Concentration in } (i) - \sum_{i=1}^{\# \text{ storms}} \text{Volume out } (i) \times \text{Concentration out } (i)}{\sum_{i=1}^{\# \text{ storms}} \text{Volume in } (i) \times \text{Concentration in } (i)} \right) \times 100$$

(Eq. 6.4)

The loads for each storm (which are summed together) may be calculated from EMC's and total volumes or from the sum of multiple discrete measurements over a given storm hydrograph. This method requires monitoring data from a long enough period to accurately represent the entire load entering and leaving the BMP without being affected by temporary storage or export of pollutants. The SOL method assumes that unmonitored storms have similar export ratios (i.e. ratio of inlet load to outlet load) as monitored events, and that, for dry periods, the export ratio again is similar or that pollutant export is negligible. Using this method, the loads from a small number of large storms would dominate the efficiency calculations (Development, 1999).

In this study, due to the limited monitoring data, only mass removal method and event mean concentration were used to evaluate the pollution removal efficiency for both sites during the storm events period. Results of removal efficiency can be seen in section 7.

7. RESULTS AND DISCUSSION

During 2001, the retrofit engineering work at both sampling sites were implemented. The Hillsdale Drive basin was modified as described below:

- To install a new riser with a smaller orifice, the bottom outlet pipe diameter has been changed to 24 inches.
- To construct a rock check dam and create a small permanent pool in the outlet.
- To create two wetland zones near the channel and enhance the contaminant removal by plant uptake.

For the Michie Drive basin, a design was proposed to maintain baseflow from the 60-inch pipe and springs in the basin, while providing enhanced detention cells to separately treat the runoff pollutant load for the smaller storm event. To provide water quality benefits, the Michie Drive basin was modified as follows:

- To create "cells" to treat separate water quality issues in the basin individually.

One is basically a hard-stabilized forebay to treat stormwater from the Heartwood apartments. The second cell also has a hard-stabilized expanding forebay and is along the left bank of the channel through the basin.

- To stabilize and realign the existing perennial channel through the basin. The channel has been moved away from the toe of the slope of the dam and stabilized with vegetation to reduce the bank erosion.
- To retrofit the outlet structure, resize the riser with a smaller orifice, and expand the emergency spillway of the dam.

With the modifications described above, it is expected that the basins would have the following enhanced mechanisms that help increase the treatment efficiency for runoff quantity and quality control:

The cell
descriptions
are not
static
they are
dynamic
(moving)

- Hydrology- a smaller orifice size reduces stormwater release rate, lengthens the detention time and tends to decrease the volume of water discharged.
- Creating a permanent pool or meandering path flow to enhance sediment settling and also remove contaminants associated with settleable particles.
- Planting - Vegetation can cover the flow channel and will help to remove contaminants by root uptake. The plant species are important and they should be selected so that the plants can survive both wet and dry conditions.

Obviously, the retrofit work is expected to improve contaminant removal efficiency by particle settling, biological uptake by plants, decay by microorganisms, and filtration.

A total of three dry weather sampling and eight-storm event sampling was conducted through the entire study period. Table 7.1 presented the rainfall statistics for monitoring storm events. Event flow weighted composites were analyzed for TSS, TP, OP, TN, COD, and metals of zinc, copper and lead. Oil and Grease only was analyzed for pre-retrofitting sampling due to the low concentrations.

Table 7.1. Rainfall Statistics for Monitoring Storm Events

Storm	Date	Total Depth (in.)	Total Duration (hr.)	Average Intensity (in./hr)
1	7/24/2000	0.32	7.75	0.04
2	8/10/2000	0.29	0.33	0.87
3	9/19/2000	0.85	4.75	0.18
4	11/14/2000	0.12	2.33	0.06
5	4/19/2002	0.32	1.87	0.17
6	5/4/2002	0.42	7.15	0.06
7	5/18/2002	0.62	2.92	0.21
8	6/4/2002	0.56	0.72	0.78

Table 7.2 gives average runoff concentrations based on a 1983 NURP compilation of over 2,300 monitored storms at 22 sites across the United States (Schueler, 1987), which provides a basis for comparison with results obtained in the present study.

Table 7.2. Average Pollutant Concentrations in Urban Runoff (mg/L) (Schueler, 1987)

TP	SP	TN	Nitrat c	TKN	COD	Zn	Pb	Cu
1.41	0.49	3.31	0.96	2.35	90.8	0.176	0.180	0.047

Table 7.3 presents the dry and wet weather samples that were collected. A full data set includes samples from all inlets and the outlet of a particular site. Bar graphs of inflow, outflow and baseflow concentrations are presented to allow a quick comparison of data from each runoff event. The inflow and outflow values for each storm are expressed as event mean concentrations, which were determined from flow-weighted composites. The baseflow values are concentrations from the most recent background sampling period prior to each storm (i.e. the results from the 7/18 /00 baseflow measurements are presented alongside the 7/24/00 and 8/9/00 stormflow concentrations, and the 9/14/00 baseflow values are compared to the concentrations from the 9/19/00 and 11/14/00 storm samples, the 04/09/02 baseflow values are compared to the concentrations from the 04/19/02, 05/04/02, 05/18/02, and 06/04/02 storm water samples.). The baseflow concentrations, which were below or near detection limits for each parameter, were presented in the bar graphs as the values of the detection limits.

Table 7.3. Available Water Quality Data

	Date	Storm/Baseflow	Notes:
	6/5/00	Baseflow	Hillsdale Dr.; TSS only
	6/26/00	Baseflow	Hillsdale Dr.; does not include metals or oil and grease (O&G) analysis
	7/15/00	Storm	Michie Dr. (excluding 74303); does not include metals or O&G
	7/18/00	Baseflow	Both sites; full data set
Pre-Retrofitting	7/19/00	Storm	Hillsdale Dr.; O&G only
	7/24/00	Storm	Hillsdale Dr.; does not include O&G
	8/9/00	Storm	Michie Dr.; full data set
	8/27/00	Storm	Hillsdale Dr.; TSS only
	9/8/00	Baseflow	Both sites; TSS only
	9/14/00	Baseflow	Both sites; doesn't include TSS or O&G
	9/19/00	Storm	Michie Dr.; does not include O&G
	11/14/00	Storm	Hillsdale Dr.; does not include O&G
	4/9/02	Baseflow	Both sites; full data set
	4/19/02	Storm	Both sites; full data set
Post-Retrofitting	5/4/02	Storm	Hillsdale Dr.; full data set
	5/9/02	Storm	Michie Dr.; (excluding 74303), does not include metals
	5/18/02	Storm	Both sites; full data set
	6/4/02	Storm	Both sites; full data set
	6/13/02	Storm	Michie Dr.; Does not include COD and metals

7.1. Detention time

For most detention basins, the dominant factors influencing pollutant removal are considered to be particle settling velocity and the pond size and geometry, which impact the detention time. Numerous literature documents have suggested that the detention time is an important criteria of the performance of detention basins. Usually, the detention time T can be calculated as follows:

$$T = \text{Total Runoff Volume} / \text{Average Outflow rate} \quad (\text{Eq. 7.1})$$

The actual detention time varies with the storm events due to unsteady situations. In this study, except for the Michie Drive basin under pre-retrofit conditions, the detention time was calculated by dividing the total inflow volume with the average outflow rate. The duration of outlet sampling for pre-retrofit conditions for the Michie Drive basin was used to be the estimated detention time since the volume of outflow exceeded the inflow volume. Table 7.4 presents the results of detention times for both

Base flow
storm
outflow
for five
sampling
times

basins. It can be seen from the table that detention time increased for both basins after retrofitting. This will be beneficial for particulate settling and therefore for pollutant removal.

Table 7.4. Calculated detention time for the monitoring storm events at both basins

Basin	Storm Date	Detention Time	Average Detention
Hillsdale Drive Basin		(hr)	Time (hr)
Pre-Retrofitting	7/24/2000	16.1	13.2
	11/14/2000	10.2	
Post-Retrofitting	4/19/2002	26.4	36.9
	5/4/2002	27.8	
	5/18/2002	56.1	
	6/4/2002	37.2	
Michie Drive Basin			
Pre-Retrofitting	8/9/2000	3.1	3.1
	9/19/2000	3.1	
Post-Retrofitting	4/19/2002	57.1	28.7
	5/18/2002	13.0	
	6/4/2002	15.9	

Impact of
post / pre
retrofitting
on detention
time

7.2. Water Quality Data

7.2.1. Total Suspended Solids (TSS)

TSS can cause an increase in turbidity and change in color of water, and also restrict light penetration and thereby damage aquatic habitats. Many studies indicated that total suspended solids is one of the most important contaminants in urban runoff. Figure 7.1 and Figure 7.2 present the pre and post- retrofitting TSS EMCs for the Hillsdale Drive Basin, respectively. Figure 7.3 and Figure 7.4 present the pre and post-retrofitting TSS EMCs at the Michie Drive Basin, respectively.

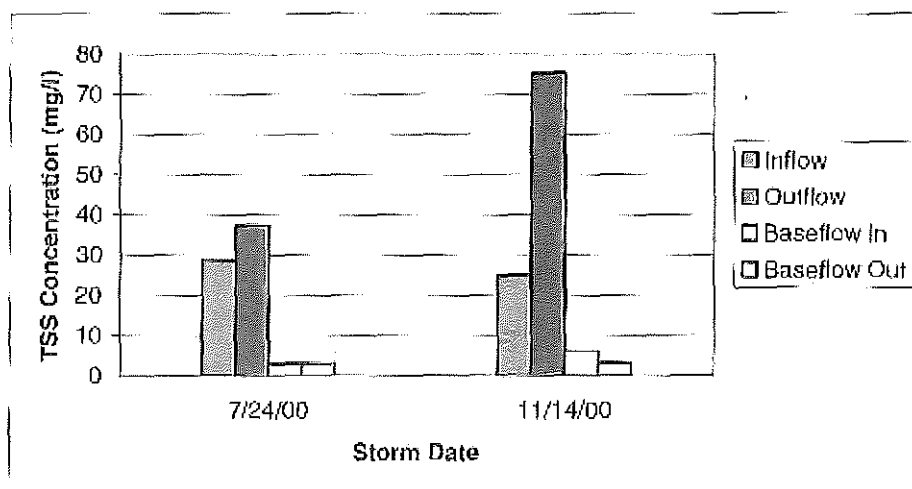


Figure 7.1. Pre-Retrofitting Storm Event TSS EMCs and Baseflow Concentrations at Hillsdale Drive Basin

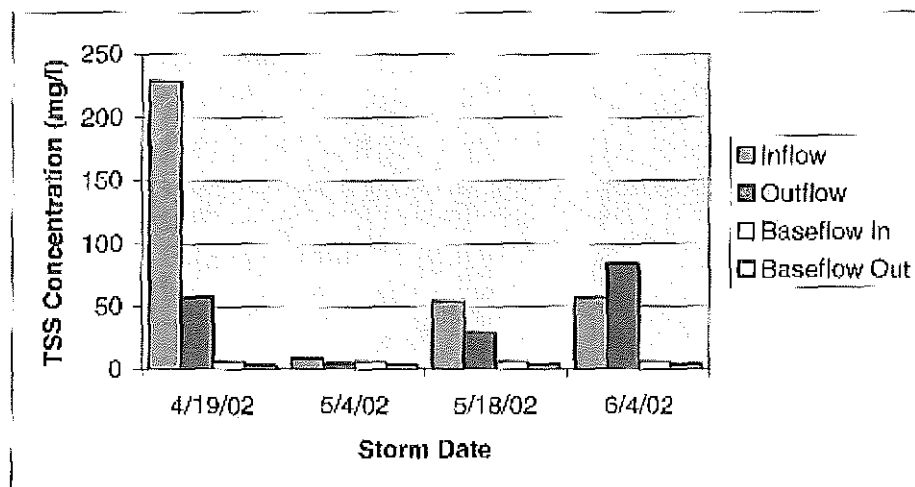


Figure 7.2. Post-Retrofitting Storm Event TSS EMCs and Baseflow Concentrations at Hillsdale Drive Basin

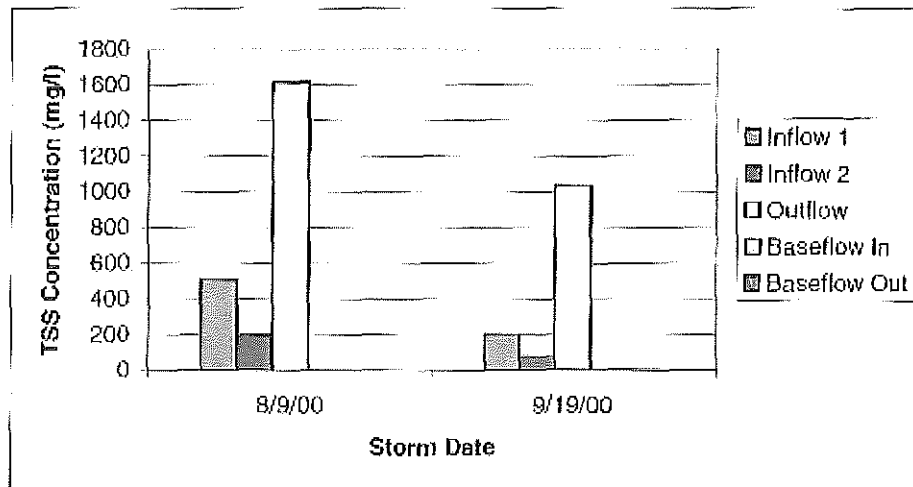
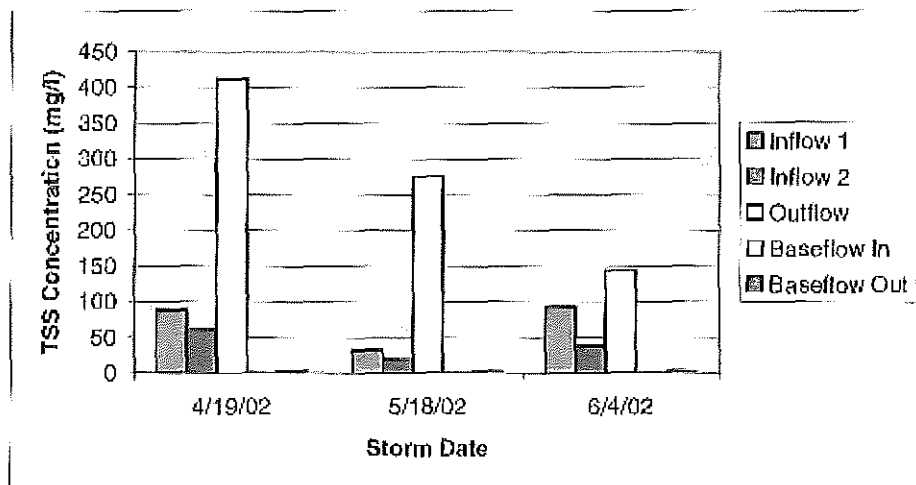


Figure 7.3. Pre-Retrofitting Storm Event TSS EMCs and Baseflow Concentrations at Michie Drive Basin



TSS outflow
much lower
magnitude, but
still picking up
sediment from
basin.
probably
due to
construction!

Figure 7.4. Post-Retrofitting Storm Event TSS EMCs and Baseflow Concentrations at Michie Drive Basin

In general, TSS concentration varies widely depending on the condition of the channel, the channel sediment storage, and the stream velocity (Schueler, 1987). High TSS concentrations are expected in areas with open channels, cut banks alternating with sandbars, and fallen trees. High slopes, high watershed imperviousness, and recent or

ongoing construction will also contribute to high TSS concentrations. In contrast, low TSS concentrations are expected when flow paths consist of vegetated swales or storm sewers and in areas with stabilized land uses, low slopes, and low imperviousness (Schueler, 1987). In general, for a 100 acre watershed, Schueler predicts TSS concentrations between 100 and 300 mg/L. Therefore, the measured sediment concentrations at the Hillsdale Drive location seem unusually low (except the storm of 04/19/02). Disturbing the pipe or channel bottom at this site even slightly, however, causes the water to become very murky. Furthermore, storms at this site frequently cause changes to the streambed and shifting sandbars. This suggests that much of the solids transport at this location may be in the form of bedloads, which are not reflected in automatic samples. In contrast, the TSS concentrations at the Michie Drive location are little high. This may be more a factor of the particle size than the channel characteristics. Large particles were not removed during TSS analysis, therefore, the high TSS concentrations at the Michie Drive Basin are primarily due to the large sand particles suspended in the stormflow rather than an extremely high number of sediments.

From the above figures it can be seen that the Hillsdale Drive Basin has a better TSS removal performance after retrofitting and yet the TSS removal improvement for the Michie Drive Basin was rather insignificant. As stated before, a small permanent pool was created at the outlet, which might have contributed to an increase in sediment settling for the Hillsdale Drive Basin. Although a sediment forebay was installed at the Michie Drive Basin to facilitate sediment deposition, it did not function as well as a permanent pool and therefore showed some negative removal efficiencies, which are presumably due to washoff of sediment previously deposited in the forebay area.

7.2.2. Total Phosphorus (TP) and Ortho-Phosphate (OP)

Phosphorus is one of the key elements necessary for growth of plants and animals. However, high level of phosphorus can stimulate aquatic plant growth wildly and cause eutrophication. Several studies showed that phosphorus level in the Meadow Creek Watershed exceeded NURP ranges for urban storm water runoff (see Table 1.1). As shown in Figures 7.5, Figure 7.6, Figure 7.7, and Figure 7.8, total phosphorus levels at both Charlottesville sites are almost near the average runoff concentration of 1.41 mg

PO₄/L given in Table 7.2 except for the storm event of 9/19/00 for pre-retrofitting. After retrofit, TP level reduced at both sites. However, From Figures 7.9 to 7.12, it can be seen that ortho-phosphate concentrations are higher than the expected average soluble phosphorus (SP) concentration of 0.49 mg PO₄/L. (OP is a measure of the phosphorus that is most immediately available for biological processes. SP includes OP and a fraction of the organic phosphorus; however, most of the SP is usually ortho-phosphate.) Generally, the Hillsdale Drive basin has a better OP removal performance. TP and OP removal efficiencies were not significant at the Michie Drive basin after retrofitting. Phosphorus levels may be high in commercial areas due to high levels of imperviousness, intensive landscaping, and fertilizer usage.

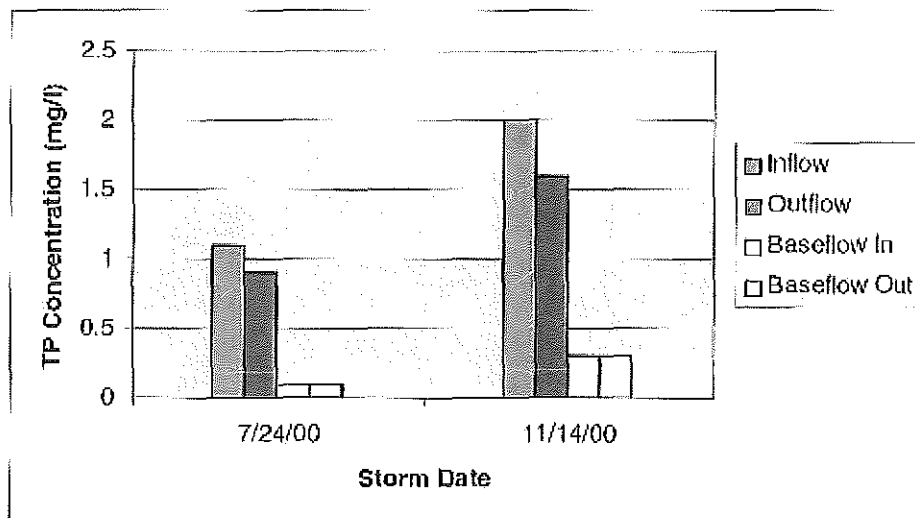


Figure 7.5. Pre-Retrofitting Storm Event TP EMCs and Baseflow Concentrations at Hillsdale Drive Basin

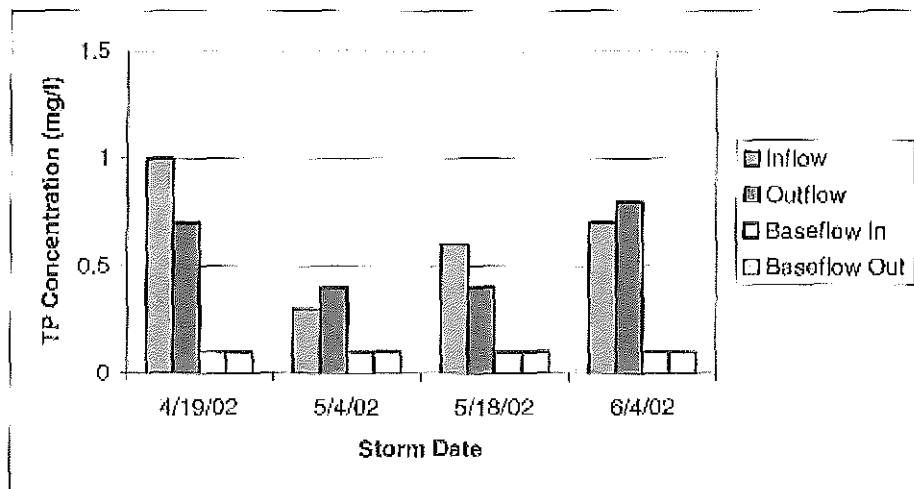


Figure 7.6. Post-Retrofitting Storm Event TP EMCs and Baseflow Concentrations at Hillsdale Drive Basin

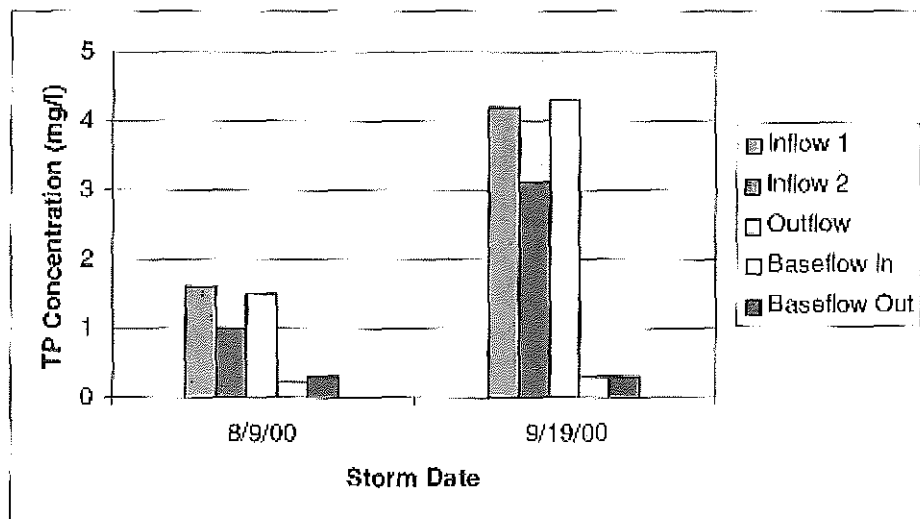


Figure 7.7. Pre-Retrofitting Storm Event TP EMCs and Baseflow Concentrations at Michie Drive Basin

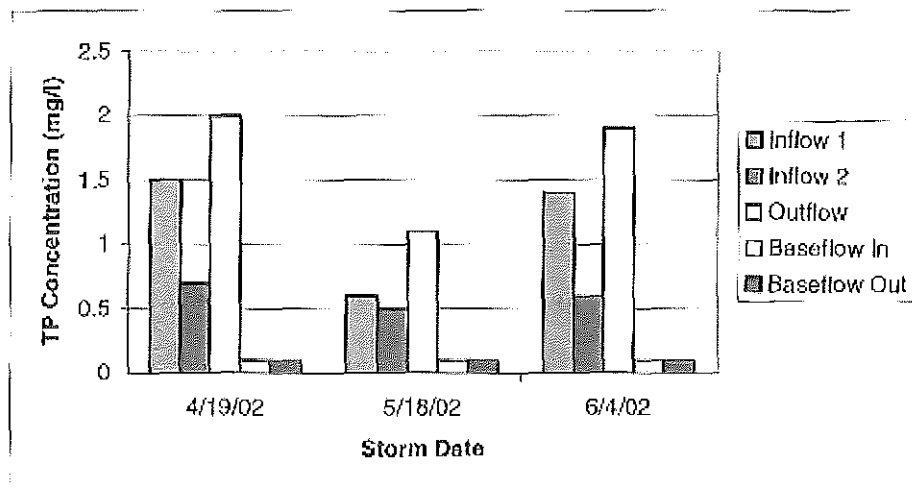


Figure 7.8. Post-Retrofitting Storm Event TP EMCs and Baseflow Concentrations at Michie Drive Basin

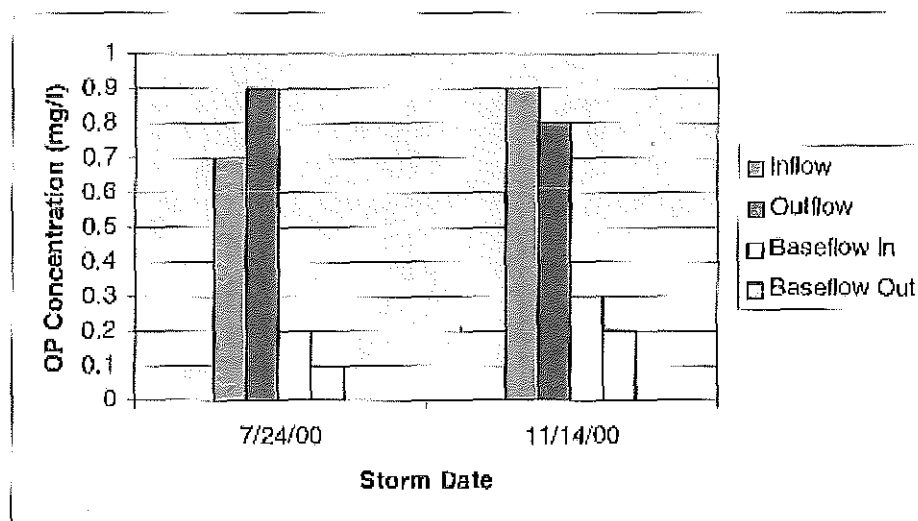


Figure 7.9. Pre-retrofitting Storm Event OP EMCs and Baseflow Concentrations at Hillsdale Drive Basin

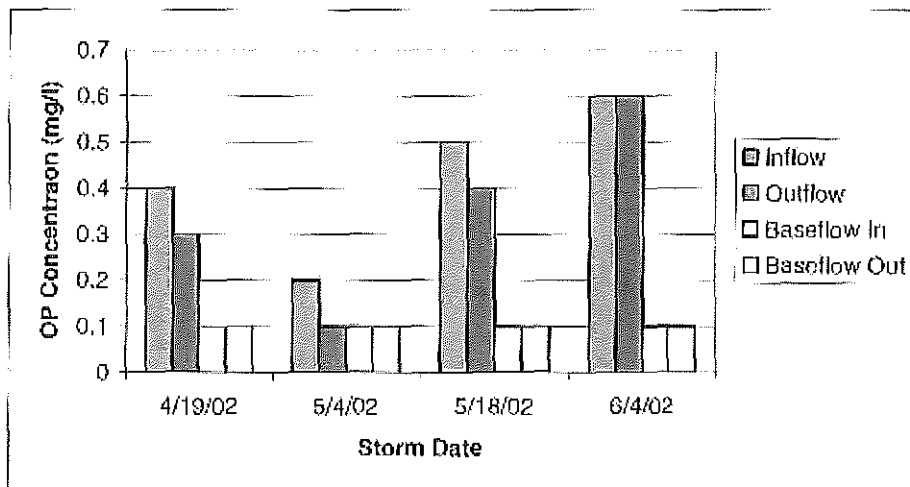


Figure 7.10. Post-retrofitting Storm Event OP EMCs and Baseflow Concentrations at Hillsdale Drive Basin

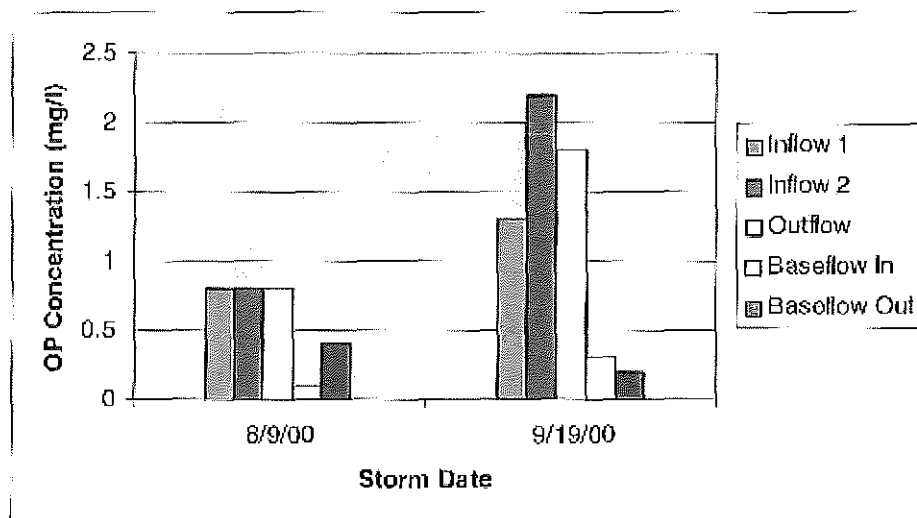


Figure 7.11. Pre-Retrofitting Storm Event OP EMCs and Baseflow Concentrations at Michie Drive Basin

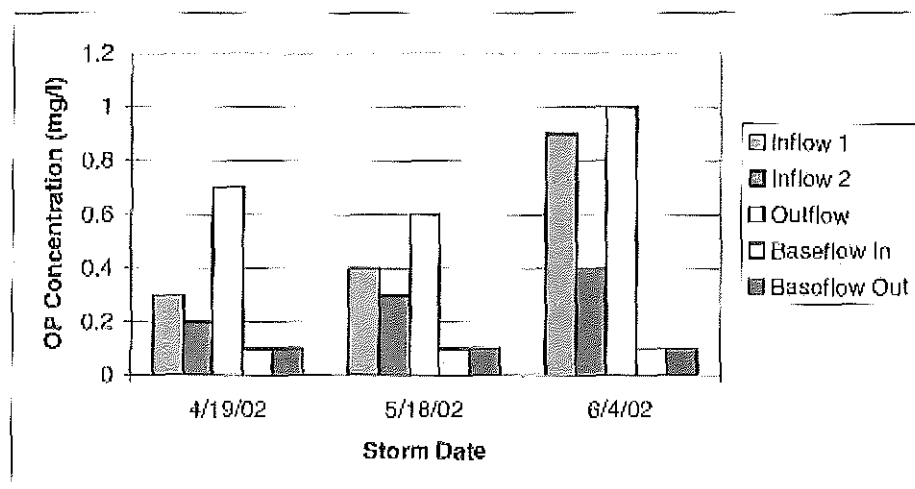


Figure 7.12. Post-Retrofitting Storm Event OP EMCs and Baseflow Concentrations at Michie Drive Basin

7.2.3. Total Nitrogen (TN)

The following four figures showed the storm event total nitrogen EMCs at both Charlottesville basins. Most stormflow total nitrogen concentrations are around 2 to 3 mg/l. This value is close to the average urban runoff TN concentration of 3.31 mg/l (Table 7.2). However, it should be noted that the TN concentration at the secondary inlet of the Michie Drive location was exceptionally high for the storm of 9/19/00. Compared with the post-retrofitting sampling results, it was thought that there might have been an unusual, one-time source of nitrogen (e.g. excess fertilizer) coming from upstream of the sampling location on 9/19/00. The results for the Hillsdale Drive Basin, on the other hand, showed a great deal of variability. It is therefore suggested that more monitoring be conducted to assess the TN removal performance for the retrofitted ponds.

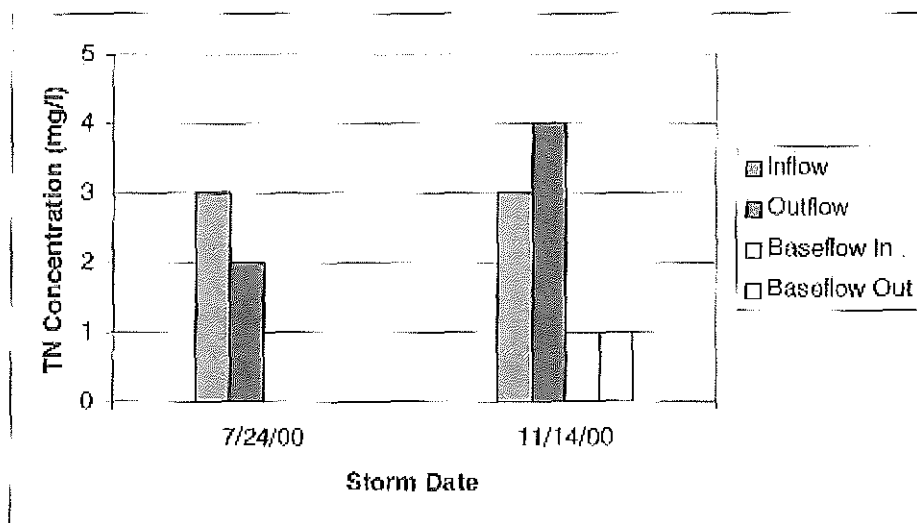


Figure 7.13. Pre-Retrofitting Storm Event TN EMCs and Baseflow Concentrations at Hillsdale Drive Basin

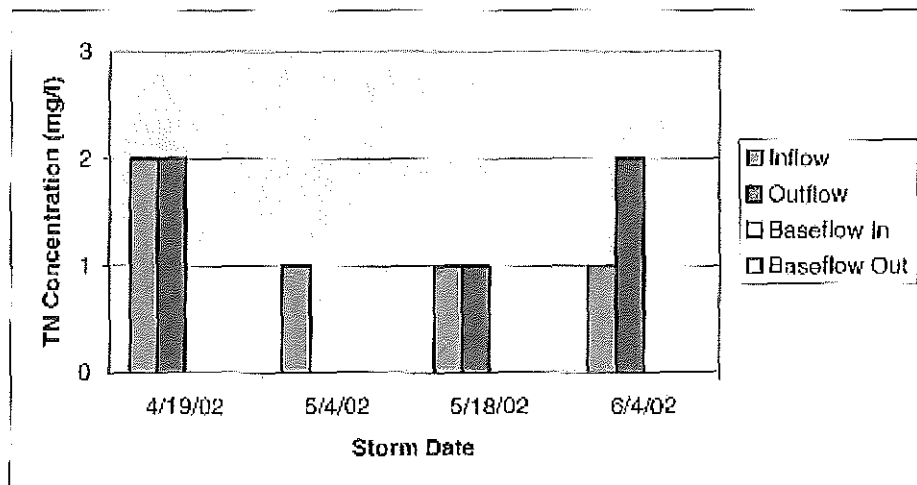


Figure 7.14. Post-Retrofitting Storm Event TN EMCs and Baseflow Concentrations at Hillsdale Drive Basin

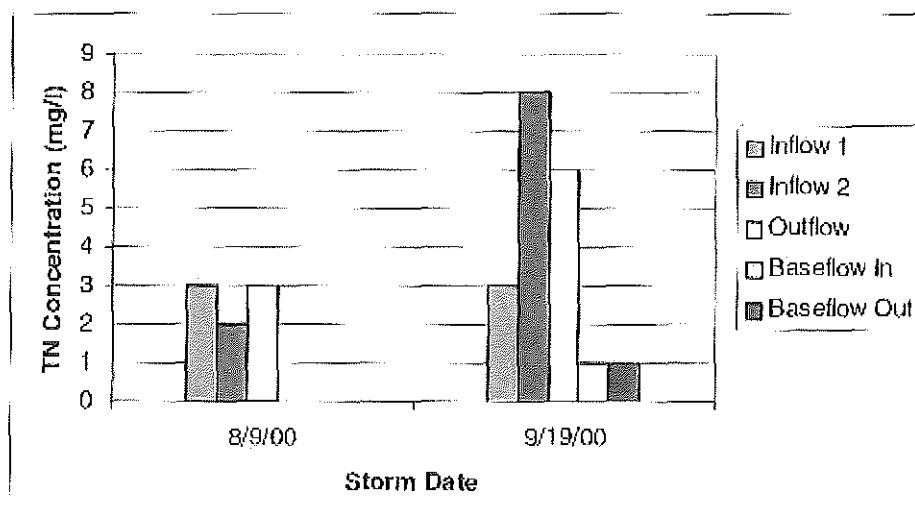


Figure 7.15. Pre-Retrofitting Storm Event TN EMCs and Baseflow Concentrations at Michie Drive Basin

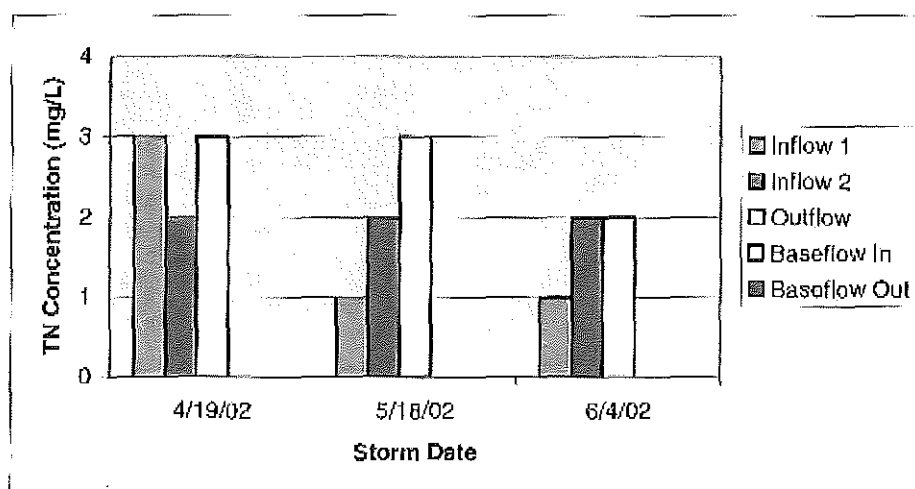


Figure 7.16. Post-Retrofitting Storm Event TN EMCs and Baseflow Concentrations at Michie Drive Basin

7.2.4. Chemical Oxygen Demand (COD)

The chemical oxygen demand test measures the oxidizable matter present in urban runoff. It represents the total amount of oxygen required to oxidize organic to carbon dioxide and water. High levels of COD can lead to anoxic conditions. Figures

7.17 to Figure 7.20 present the EMCs (as determined from flow-weighted composites) of COD at the Hillsdale Drive and Michie Drive basins, respectively. Erosion is a primary factor contributing to both organic matter and sediment in urban runoff (USEPA, 1993). Therefore, it is not surprising that TSS concentrations of the inflows have some relationship with the COD concentrations. When low TSS concentrations were observed at the inlet, the COD concentrations were also low. The relationship between TSS and COD can also be seen when comparing the TSS and COD concentrations at the two study sites. The Michie Drive Basin has high COD levels due to high TSS concentrations. Some stormflow COD concentrations at the Michie Drive Basin are higher than the average urban storm runoff concentration of 90.8 mg/l found in the NURP Study (Table 7.2). On the other hand, the COD concentrations at the Hillsdale Drive Basin were found to be lower.

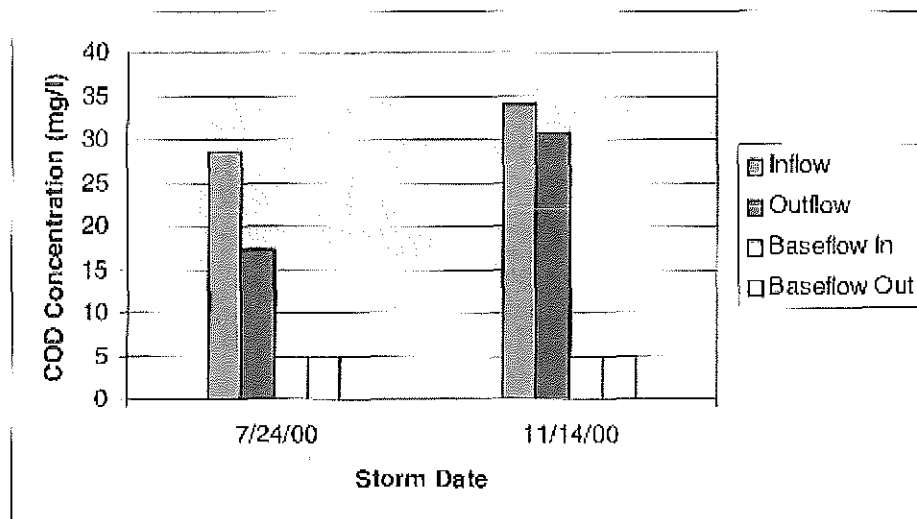


Figure 7.17. Pre-Retrofitting Storm Event COD EMCs and Baseflow Concentrations at Hillsdale Drive Basin

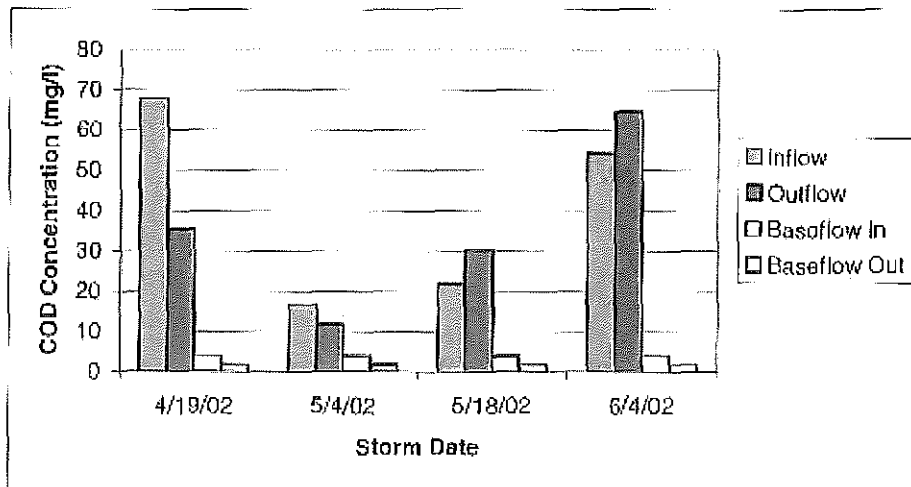


Figure 7.18. Post-Retrofitting Storm Event COD EMCs and Baseflow Concentrations at Hillsdale Drive Basin

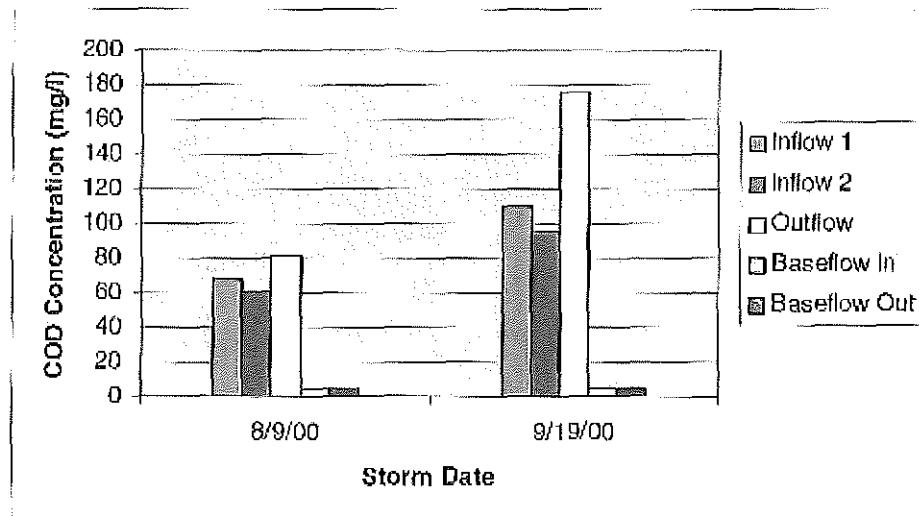


Figure 7.19. Pre-Retrofitting Storm Event COD EMCs and Baseflow Concentrations at Michie Drive Basin

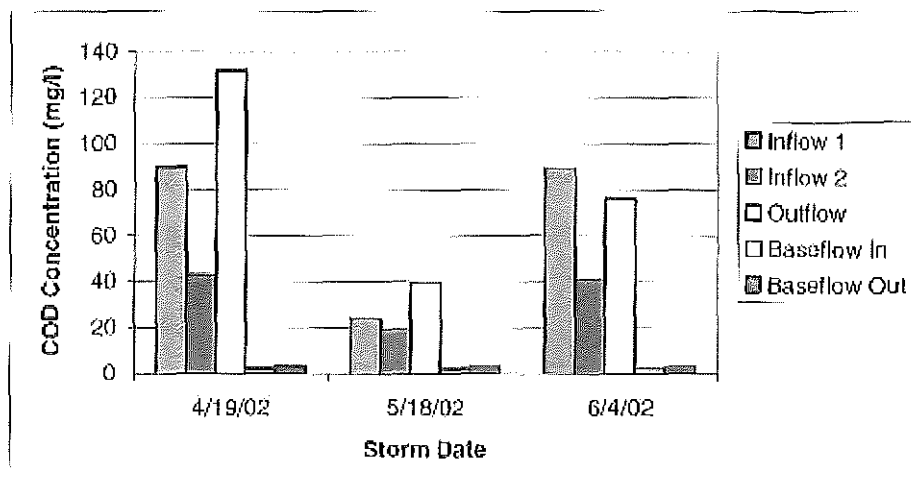


Figure 7.20. Post-Retrofitting Storm Event COD EMCs and Baseflow Concentrations at Michie Drive Basin

7.2.5. Metals

The first set of metals samples sent to Central Virginia Laboratories & Consultants (CVLC) (7/18/00 baseflow and 7/24/00 storm flow) were analyzed using methods with 0.001 mg/L detection limits for Cu and Pb, and an 0.005 mg/L detection limit for Zn. A 0.001 mg/L detection limit is recommended for metals analyses (Strecker, 1999). This reflects the fact that metals become a pollutant at relatively low concentrations. For example, the acute toxicity level of 0.009mg/l for Cu, as specified by Virginia Water Quality Standards, is on the same order of magnitude as the recommended detection limit (Table 1.1). However, unexpectedly, the detection limits for the next set of analyses at CVLC (8/9/00 storm flow) increased to 0.020 mg/L for Cu, and 0.1 mg/L for Pb. These limits are above the VA Water Quality Standards, so, although no metals were detected in the analyses, they may have nevertheless been present at acute levels. In fact, though not reflected by the CVLC analyses, Cu, Pb, and Zn are almost always present at elevated concentrations in urban stormwater runoff. Unfortunately, when metals testing were switched to EnviroCompliance Laboratories, the

precision was lowered still further (detection limits of 0.05 mg/L, 0.20 mg/L, and 0.02 mg/L for Cu, Pb, and Zn respectively).

Despite the limited precision of the metals analyses, some important information still can be drawn from the results. The July pre-retrofitting storm samples at Hillsdale Drive Basin were analyzed with precise detection limits. Although the Cu and Pb inflow concentrations equaled or exceeded chronic levels, they were still an order of magnitude less than the national averages presented in Table 7.2 (0.047 mg/L and 0.180 mg/L respectively). For the next set of storm samples (the August storm at the Michie Drive Basin) the detection limits were not precise enough to allow comparison to the VA Water Quality Standards. However, the detection limits (and therefore the inflow concentrations) were still lower than both the national averages for urban runoff in Table 7.2. For the final pre-retrofitting set of analyses (9/19/00 storm at Michie Drive Basin and 11/14/00 storm at Hillsdale Drive Basin), the detection limits were at or slightly above the expected values from the literature. For the post-retrofit sampling, the concentrations of Cu and Pb are always below the detection limit. Therefore, the only conclusion that can be made is that the flow concentrations of Cu and Pb did not substantially exceed national averages, however, they may still have been present at elevated concentrations.

The results from the zinc analyses consistently exceeded detection limits, thus yielding more useful results. These concentrations are presented in Figures 7.21 and 7.22, Figure 7.23, and Figure 7.24. Every inflow Zn concentration measured in this study exceeded the Virginia Water Quality acute standard. As can be seen, Both sites have good metal removal performance gained by retrofitting implementation (except 6/04/02 of storm in Hillsdale Drive basin).

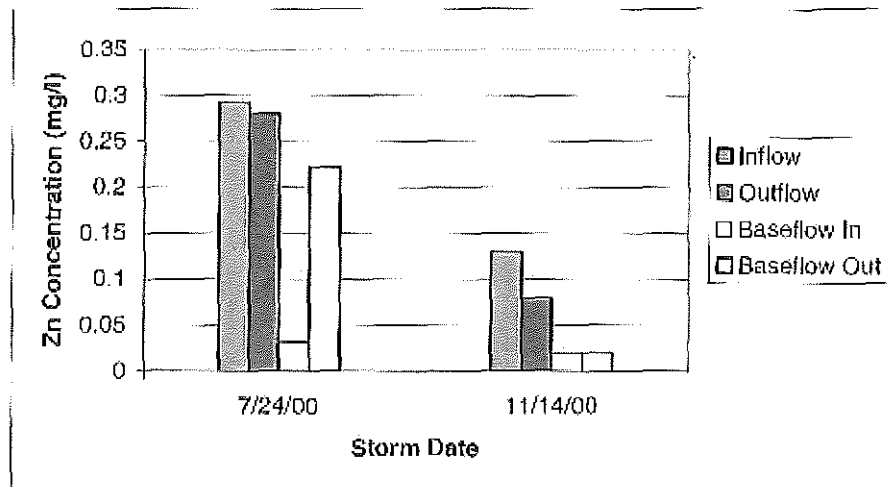


Figure 7.21. Pre-Retrofitting Storm Event Zn EMCs and Baseflow Concentrations at Hillsdale Drive Basin

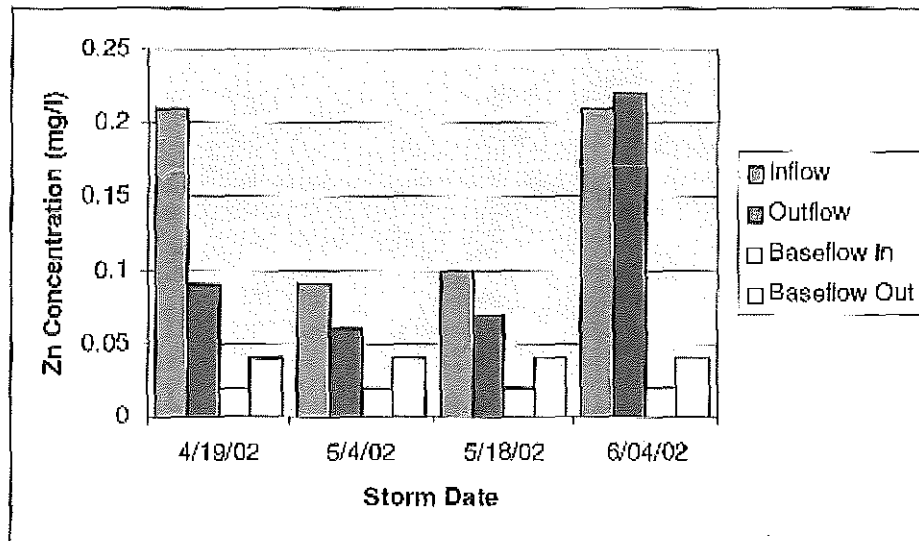


Figure 7.22. Post-Retrofitting Storm Event Zn EMCs and Baseflow Concentrations at Hillsdale Drive Basin

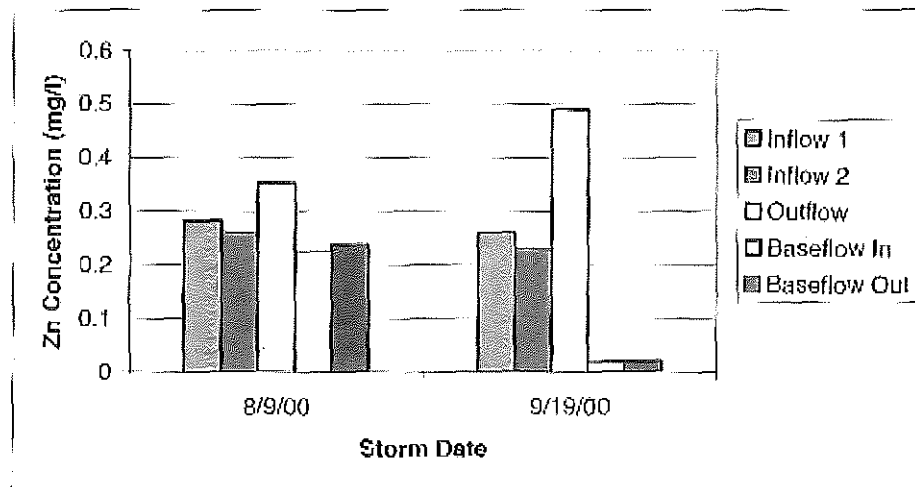


Figure 7.23. Pre-Retrofitting Storm Event Zn EMCs and Baseflow Concentrations at Michie Drive Basin

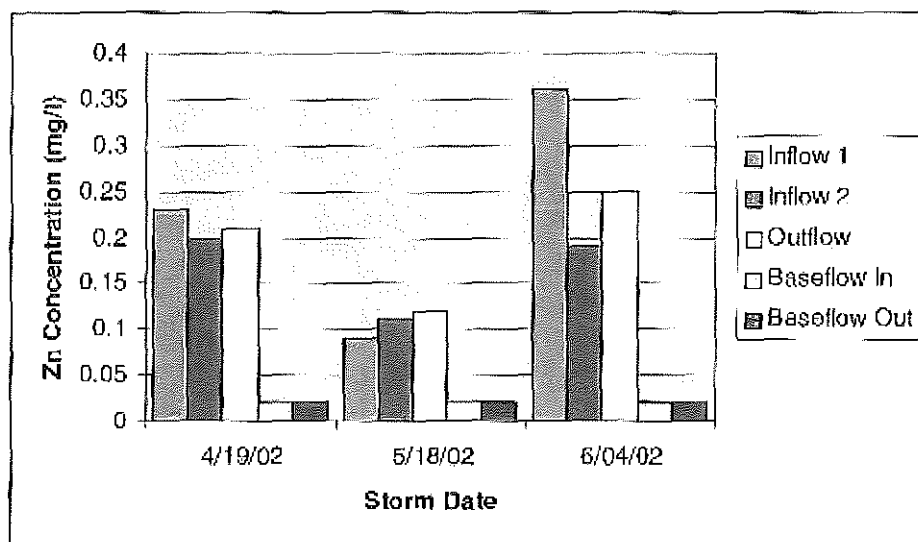


Figure 7.24. Post-Retrofitting Storm Event Zn EMCs and Baseflow Concentrations at Michie Drive Basin

7.2.6. Oil and Grease

With one exception, no hydrocarbons were detected in either the first set of storm samples from each BMP location or in the first set of baseflow samples. Hydrocarbons

were detected in a storm sample from the Michie Drive main inlet, however the value was only slightly above the detection limit of 5.0 mg/L. Therefore, oil and grease sampling was discontinued after these first storms to save the \$30 per sample cost of analysis. For the post-retrofitting samples, The oil and grease are not tested for the same reason.

7.3. Mass Removal Efficiency

As stated in Section 6, the mass loading removal efficiency method is an accurate method to assess the performance of BMPs. The amount of pollutant transported, M , can be calculated by the product of flow, Q , and concentration, C . The removal or trapping efficiency of pollutants was computed as the percent difference of the pollutant mass entering and leaving the BMP, as given in Equation 6.1. The pre-retrofitting mass removal efficiency was not calculated in this study due to the fact that the outflow volume was considerably greater than the sum of all inflow volumes. Froelich (2001) discussed the possible reasons for this disparity. For pre-retrofitting, since the slope of the second inlet pipe was not available, the estimated value caused some errors in flow measurements. Ground water contribution may be another reason for this phenomenon. Evidence of a spring near the inlet pool and high dry weather out baseflow provide some information to support it. After retrofitting, the outlet structure was resized and the orifice diameter was reduced, also, a weir was used to calculate the second inlet flow. Table 7.5 presents the calculated mass trapping efficiency during the sample collection period. As can be seen, the mass removal efficiency was improved from average 7.95% of TP to 50.6% of TSS at Hillsdale Drive Basin. For the Michie Drive Basin, the range of mass removal efficiency was from 44.8% to 91.8% except the TSS value of 5/18/02 storm event. Actually, these results only revealed the removal efficiency during the sample collection period. The actual pollutant removal efficiency might be higher or lower than these values due to the variability in rainfall characteristics, etc. It is always desirable, therefore, to implement a long-term sampling program in order to best evaluate the performance of BMPs such as these two detention basins.

Michie
Basin

Table 7.5. Calculated Mass Removal Efficiency for Both Detention Basins

Basin	Storm Date	Mass Removal Efficiency (%)					
		TSS	TP	OP	TN	COD	Zn
Hillsdale Drive Basin							
Pre-Retrofitting	7/24/2000	75.1	84.4	75.4	87.3	88.4	81.7
	11/14/2000	8.4	75.7	73	59.5	72.7	81.3
Post-Retrofitting	4/19/2002	96.9	91.5	90.8	87.7	93.6	94.8
	5/4/2002	91.1	77.1	91.4	100	87.9	88.6
	5/18/2002	95.4	94.3	93.2	91.5	88.2	94.1
	6/4/2002	86.0	89.1	90.5	81.1	86.7	90.1
Michie Drive Basin							
Pre-Retrofitting	8/9/2000	NA	NA	NA	NA	NA	NA
	9/19/2000	NA	NA	NA	NA	NA	NA
Post-Retrofitting	4/19/2002	44.8	77.4	71.5	87.8	75.6	91.3
	5/18/2002	24.5	81.1	82.9	87	82.3	90.6
	6/4/2002	74.9	78.5	82.9	91.8	87.2	90.7

7.4. Summary: Performance of Retrofitted Detention Basins

Since the recorded flows were calculated by using the measured water level and the Manning Equation with user-defined pipe slope and average roughness coefficients, flow computations might include some errors. The study of Strecker (1999) founded that "the error in flow measurements is easily on the order of plus or minus 25% over a range of storms . . . flow measurements for individual storms varied even more". Removal efficiencies for both sites were calculated for this study by using the percentage change in EMCs and mass loading between the inflow and the outflow stations. The EMC method allows efficiencies to be determined based on the percentage of the total flow at each point along the hydrograph instead of on the flow magnitude. The removal efficiencies for both pre-retrofitting and post-retrofitting sampling are presented in Table 7.6 and Table 7.7.

It appears
as though
there are
some head
losses here
pertaining to
the flow rate

Table 7.6. Summary of Pollutant Removal Efficiencies for Pre-Retrofitting

Parameter	Pollutant Removal Efficiency (%)			
	Hillsdale Dr.		Michie Dr.	
	7/24/2000	11/14/2000	8/9/2000	9/19/2000
TSS	-30	-202	-354	-639
TP	18	20	-15	-18
OP	-29	11	0	-3
TN	33	-33	-20	-9
COD	39	10	-25	-72
Cu	86	NA	NA	NA
Pb	33	NA	NA	NA
Zn	4	38	-30	-100

Table 7.7. Summary of Pollutant Removal Efficiencies for Post-Retrofitting

Parameter	Pollutant Removal Efficiency (%)						
	Hillsdale Dr.				Michie Dr.		
	4/19/2002	5/4/2002	5/18/2002	6/4/2002	4/19/2002	5/18/2002	6/4/2002
TSS	75	48.3	45.8	-47.8	-451.6	-986.5	-118.3
TP	30.0	-33.3	33.3	-14.3	-81.8	-100.0	-90.0
OP	25.0	50.0	20.0	0.0	0.0	-71.4	-53.9
TN	0.0	100.0	0.0	-100.0	-20.0	-100.0	-33.3
COD	47.7	29.3	-38.5	-18.8	-98.8	-83.0	-17.1
Cu	NA	NA	NA	NA	NA	NA	NA
Pb	NA	NA	NA	NA	NA	NA	NA
Zn	57.1	33.3	30	-4.8	2.3	-20.0	9.1

In general, when using the EMCs as a basis for performance evaluations, the water quality benefits obtained by retrofit implementations were not significant at both detention basins. However, the mass loading removal efficiency showed water quality improvement during the study period. The removal efficiencies for Cu and Pb for most storms are not available because results were below detection limits. However, even if the Cu and Pb analyses were not available, since they can show acute toxicity in a very low level, the effects of Cu, Pb on the Meadow Creek should not be overlooked. The negative removal efficiencies could be due to scouring and washoff of deposited

Sample
Pb
Cu
to
10000

materials; the anaerobic environments and irreducible concentrations, etc. Froelich (2001)

Oil and grease monitoring for this study was not completed due to low observed concentrations and the high expenses for laboratory analysis.

7.5. Assessment of Long Term Performance

The method for computing the long term performance of detention basins was developed by U.S.EPA (1986). The method is based on sedimentation principles and is used for estimating detention basin efficiency under both dynamic and quiescent conditions.

1). Dynamic Conditions

Under dynamic (storm) conditions, the TSS removal is computed by the following equation:

$$R_d = 1.0 - [1.0 + 1/n \times V_s / (Q/A_r)]^{-n} \quad (\text{Eq. 7.2})$$

Where,

R_d = fraction of suspended removed

V_s = settling velocity of particles

Q/A_r = overflow velocity,

n = turbulence parameters (1 for poor settling performance, >5 for ideal performance)

The long term average removal efficiency of a detention basin under dynamic condition can be calculated by Equation 7.3.

$$R_L = Z \times \{ r / [r - \ln(R_m/z)] \}^{r+1} \quad (\text{Eq. 7.3})$$

Where,

R_L = long term dynamic removal fraction

R_m = mean storm dynamic removal fraction

$r = 1/CV_Q^2$

CV_Q = coefficient of variation of runoff flow rate, (1.32 for Virginia)

$Z = 1.0$

2). Quiescent Conditions

The quiescent solids removal should be considered if certain stormwater is retained in the detention basin. To obtain this removal efficiency, a range of effective volume ratios (effective basin volume to mean runoff volume) should be obtained first. Then the removal under quiescent condition (R_q) can be obtained.

3). Combined Removal

The combined total removal R under both conditions can be calculated by Equation 7.4.

$$R = 1 - [(1 - R_L) \times (1 - R_q)] \quad (\text{Eq. 7.4})$$

In order to assess the long term performance of these two detention basins, representative regional rainfall statistic values collected by U. S. EPA (1986) were applied in this study. The different runoff coefficients were used based on the different land type (Waniclista and Yousef, 1992). The average pond depth and the pond area were estimated from the topographic maps for both sites. Table 7.8 presents the characteristics of the basin and their drainage areas. Since the Michie Drive Basin is dry detention pond and the water level will drop back to the baseflow levels soon after a storm event, only the removal efficiency under dynamic conditions was computed. The total removal under both dynamic and quiescent conditions were calculated at the Hillsdale Drive Basin. Table 7.9 presents the calculated results for the long-term removal of these two detention basins. Results showed that the performance of the Hillsdale Drive Basin was better than that of the Michie Drive Basin. One of the possible reasons is that the ratio of pond area to the drainage area plays an important role in TSS long-term removal. The higher the ratio is, the greater the removal is. The second reason is there is a permanent pool at the Hillsdale Drive Basin, which contributes to the quiescent removal. In other words, the wet pond will show better performance than dry pond.

*Pond water
filled to
drainage
area*

Table 7.8. The Characteristics of Two Detention Basin and Their Drainage Areas

Basin	Drainage Area(acre)	Land Type	Runoff Coefficient C	Weighted C	Average Depth (ft)	Pond Area (ft ²)
Hillsdale Drive	73.8	35% Commercial	0.9	0.55	5	40336
		35% Multi-family	0.5			
		30% Forested	0.2			
Michie Drive	79.8	73% Commercial	0.9	0.71	3	17960
		27% Forested	0.2			

Table 7.9. The Calculated Long Term Removal for both detention Basins

Basin	PA/SA (%)	Dynamic Removal (%)	Quiescent Removal (%)	Total Removal (%)
Hillsdale Drive	1.25	68	89	97
Michie Drive	0.52	55	NA	NA

8. CONCLUSIONS AND SUGGESTIONS

The urban runoff pollution is site specific and highly variable. Meanwhile, there are many factors to affect the pollution removal efficiencies of the stormwater management facilities, such as the location, topography, size, type of the facilities, the characteristics of the drainage area, the contaminant type as well as rainfall intensity and duration.

In summary, the following conclusions and recommendations can be made.

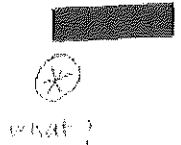
- 1). Although the two detention basins were primarily built for flood control, after retrofit, the detention time for both detention basins increased and the ponds are found to provide a higher pollutant removal efficiencies than those under pre-retrofit conditions.
- 2). The Hillsdale Drive basin showed a limited water quality treatment performance before retrofitting. After retrofitting, the water quality benefit was found to be significant. Average mass loading removal efficiency after retrofitting increased

50.6 % for TSS, 7.95 % for TP, 17.3 % for OP, 9.05 % for COD, 16.7 % for TN, and 10.4 % for Zn when comparing with pre-retrofitting sampling results .

- 3). The Michie Drive basin showed that the pollution removal efficiencies gained by the retrofitting implementation was not significant, Scouring may be one of the reasons that results showed negative removal efficiency for this site. Further monitoring is needed to better evaluate the water quality treatment performance of this basin.
- 4). Most parameters showed that the quality of outflow water from both sites after retrofitting is better than that under pre-retrofitting conditions.
- 5). Flow results showed that both detention basins provided better water quantity control function after retrofitting. The reduction of peak flow was increased from 69 % of pre-retrofitting to 74 % of post-retrofitting at the Hillsdale Drive Basin, and the reduction of peak flow was increased from negative value of pre-retrofitting to 72.5 % of post-retrofitting at the Michie Drive Basin.
- 6). The performance of detention basins was affected by many factors, such as the characteristics of drainage areas, the topography, size of detention basins, and the rainfall intensity. The sampling results of stormwater of 06/04/02 verified it. High rainfall intensity caused the effluent EMCs exceeded the influent EMCs for the Hillsdale Drive Basin due possibly to the scouring and washoff by strong and turbulent inflows.
- 7). During the monitoring period, sampling data were not entirely consistent for pollutant removal efficiencies. To determine the long-term pollutant removal efficiency, further monitoring is recommended.
- 8). The small permanent pool was important to the TSS removal at the Hillsdale Drive basin. However, due to the standing water, trash was observed to accumulate in the pool and float on the water surface. Regular cleaning should be implemented,

especially after significant rainfall events.

- 9). For the Michie Drive basin, some measures should be taken to prevent the scouring and resuspension of the sediment layer at the dry sediment forebay.



- 10). Using the EPA Methodology for estimating the long-term performances of detention facilities, it was found that the Hillsdale Drive detention pond can provide a high removal rate (around 90%) for suspended solids. For the Michie Drive basin the removal rates was estimated as around 50%.

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Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

5/23/2014

Great Eastern Management Company
PO Box 5526
Charlottesville, VA 22805

RE: Construction General Permit Coverage #VAR10D825, Seminole Square Development - Commercial shopping center - 101 Seminole Court Charlottesville

Dear David G Mitchell:

DEQ has received your registration statement for the proposed land-disturbing project under the General Permit for Discharges of Stormwater from Construction Activities (VAR10). The project's date of coverage is either the date of this letter or fifteen business days after the postmark date of the project's complete registration packet submittal to DEQ.

By submission of the registration statement, you acknowledge that the proposed project is eligible for coverage under the General Permit and you have agreed to the conditions in the General Permit including any applicable conditions regarding Total Maximum Daily Loads and impaired waters. Please be aware that §62.1-44.15:35 of the Code of Virginia and the General Permit contain additional requirements if nonpoint nutrient offsets are chosen to meet the post-development nonpoint nutrient runoff compliance requirements. Section §62.1-44.15:35 I requires that the permit issuing authority require that nonpoint nutrient offsets or other off-site options achieve the necessary nutrient reductions **PRIOR TO THE COMMENCEMENT OF THE PERMITTEE'S LAND DISTURBING ACTIVITY.**

A copy of the General Permit is available on the DEQ web page at <http://www.deq.virginia.gov/Portals/0/DEQ/Water/Publications/CGPvar10.pdf>. Print the VAR10 permit and read it carefully as you are responsible for meeting all the permit conditions. The General Permit will expire on June 30, 2014.

Your project specific permit registration number is **VAR10D825**. A copy of this permit coverage letter, registration statement, copy of the VAR10 permit, and the project's Stormwater Pollution Prevention Plan (SWPPP) must be at the construction site from the date of commencement of the construction activity to final stabilization. In addition, DEQ staff conduct periodic site inspections for compliance with the permit.

Additional information is available on the DEQ webpage at: <http://www.deq.virginia.gov/programs/water/stormwatermanagement/vsinpppermits/constructiongeneralpermit.aspx>. For questions, contact the Permit Processor at (804) 698-4039.

Sincerely,

A handwritten signature in cursive script, reading "Frederick K. Cunningham".

Frederick K. Cunningham, Director
Office of Water Permits



COMMONWEALTH of VIRGINIA

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David K. Paylor
Director

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May 23, 2014

Great Eastern Management Company
PO Box 5526
Charlottesville, VA 22805

RE: General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10)
DEQ General Permit No. VAR10D825
Seminal Square Development, Charlottesville
Reissuance Reminder Letter

Dear Permittee:

The General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10) was adopted by the State Water Control Board at its December 13, 2013 meeting and will be reissued with an effective date of July 1, 2014. This general VPDES permit provides coverage to stormwater discharges from all qualified construction activities for operators that submit a complete and accurate registration statement and are approved for coverage.

General VPDES permit holders must complete and submit the 2014 registration statement, 2014 permit fee form, and 2014 permit fee on or before June 1, 2014 if they wish to continue coverage under this general permit reissuance. Please note that the Department has extended the due date as allowed per Part III M of the general permit. A copy of the 2014 registration statement and permit fee form can be found on the Department's website at the following location:

<http://www.deq.virginia.gov/programs/water/stormwatermanagement/vsmpppermits/constructiongeneralpermit.aspx>

Instructions for completing the 2014 registration statement are included with the registration form. The application fee for this general permit varies, and should be submitted in accordance with the 2014 permit fee form instructions.

Chesapeake Bay Preservation Act land-disturbing activities (i.e., construction activities resulting in land disturbance equal to or greater than 2,500 square feet and less than one acre within areas designated as subject to the Chesapeake Bay Preservation Act) are no longer subject to coverage under the 2014 general permit. Operators of these construction activities are not required to apply for continued coverage under this general permit.

If your land-disturbing activity has been completed and final stabilization has been achieved, please submit a 2009 Notice of Termination form. This form can be found on the Department's website at the link provided above.

Please contact me at (804) 698-4037 or the Stormwater Permit Processor at (804) 698-4085 if you have any questions.

Respectfully,

Andrew J. Hammond II, PE, HIT
Office of Stormwater Management

- Hover mouse pointer over “Programs”, then move down and hover over “Water”
- Click on “Stormwater Management”, just to the right of “Water”



- On the right menu bar, click on the "Construction General Permit" link (Fig. 1)
- When directed to the page in Fig. 2, scroll down and select the permit link that applies to you



(b) Critical slopes.

- (1) *Purpose and intent.* The provisions of this subsection (hereinafter, "critical slopes provisions") are intended to protect topographical features that have a slope in excess of the grade established and other characteristics in the following ordinance for the following reasons and whose disturbance could cause one (1) or more of the following negative impacts:
 - a. Erosion affecting the structural integrity of those features.
 - b. Stormwater and erosion-related impacts on adjacent properties.
 - c. Stormwater and erosion-related impacts to environmentally sensitive areas such as streams and wetlands.
 - d. Increased stormwater velocity due to loss of vegetation.
 - e. Decreased groundwater recharge due to changes in site hydrology.
 - f. Loss of natural or topographic features that contribute substantially to the natural beauty and visual quality of the community such as loss of tree canopy, forested areas and wildlife habitat.

These provisions are intended to direct building locations to terrain more suitable to development and to discourage development on critical slopes for the reasons listed above, and to supplement other regulations and policies regarding encroachment of development into stream buffers and floodplains and protection of public water supplies.

- (2) *Definition of critical slope.* A critical slope is any slope whose grade is 25% or greater and:
 - a. A portion of the slope has a horizontal run of greater than twenty (20) feet and its total area is six thousand (6,000) square feet or greater; and
 - b. A portion of the slope is within two hundred (200) feet of any waterway as identified on the most current city topographical maps maintained by the department of neighborhood development services.

Parcels containing critical slopes are shown on the map entitled "Properties Impacted by Critical Slopes" maintained by the department of neighborhood development services. These critical slopes provisions shall apply to all critical slopes as defined herein, notwithstanding any subdivision, lot line adjustment, or other action affecting parcel boundaries made subsequent to the date of enactment of this section.

- (3) *Building site required.* Every newly created lot shall contain at least one (1) building site. For purposes of this section, the term building site refers to a contiguous area of land in slopes of less than 25%, as determined by reference to the most current city topographical maps maintained by the department of neighborhood development services or a source determined by the city engineer to be of superior accuracy, exclusive of such areas as may be located in the flood hazard overlay district or under water.
- (4) *Building site area and dimensions.* Each building site in a residential development shall have adequate area for all dwelling unit(s) outside of all required yard areas for the applicable zoning district and all parking areas. Within all other developments subject to the requirement of a site plan, each building site shall have adequate area for all buildings and structures, parking and loading areas, storage yards and other improvements, and all earth disturbing activity related to the improvements.
- (5) *Location of structures and improvements.* The following shall apply to the location of any building or structure for which a permit is required under the Uniform Statewide Building Code and to any improvement shown on a site plan pursuant to Article VII of this chapter:

- a. No building, structure or improvement shall be located on any lot or parcel within any area other than a building site.
- b. No building, structure or improvement, nor any earth disturbing activity to establish such building, structure or improvement shall be located on a critical slope, except as may be permitted by a modification or waiver.

(6) *Modification or waiver.*

- a. Any person who is the owner, owner's agent, or contract purchaser (with the owner's written consent) of property may request a modification or waiver of the requirements of these critical slopes provisions. Any such request shall be presented in writing and shall address how the proposed modification or waiver will satisfy the purpose and intent of these provisions.
- b. The director of neighborhood development services shall post on the city website notice of the date, time and place that a request for a modification or waiver of the requirements of these critical slopes provisions will be reviewed and cause written notice to be sent to the applicant or his agent and the owner or agent for the owner of each property located within five hundred (500) feet of the property subject to the waiver. Notice sent by first class mail to the last known address of such owner or agent as shown on the current real estate tax assessment books, postmarked not less than five (5) days before the meeting, shall be deemed adequate. A representative of the department of neighborhood development services shall make affidavit that such mailing has been made and file the affidavit with the papers related to the site plan application.
- c. All modification or waiver requests shall be submitted to the department of neighborhood development services, to be reviewed by the planning commission. In considering a requested modification or waiver the planning commission shall consider the recommendation of the director of neighborhood development services or their designee. The director, in formulating his recommendation, shall consult with the city engineer, the city's environmental manager, and other appropriate officials. The director shall provide the planning commission with an evaluation of the proposed modification or waiver that considers the potential for soil erosion, sedimentation and water pollution in accordance with current provisions of the Commonwealth of Virginia Erosion and Sediment Control Handbook and the Virginia State Water Control Board best management practices, and, where applicable, the provisions of Chapter 10 of the City Code. The director may also consider other negative impacts of disturbance as defined in these critical slope provisions.
- d. The planning commission shall make a recommendation to city council in accordance with the criteria set forth in this section, and city council may thereafter grant a modification or waiver upon making a finding that:
 - (i) The public benefits of allowing disturbance of a critical slope outweigh the public benefits of the undisturbed slope (public benefits include, but are not limited to, stormwater and erosion control that maintains the stability of the property and/or the quality of adjacent or environmentally sensitive areas; groundwater recharge; reduced stormwater velocity; minimization of impervious surfaces; and stabilization of otherwise unstable slopes); or
 - (ii) Due to unusual size, topography, shape, location, or other unusual physical conditions, or existing development of a property, one (1) or more of these critical slopes provisions would effectively prohibit or unreasonably restrict the use, reuse or redevelopment of such property or would result in significant degradation of the site or adjacent properties.

No modification or waiver granted shall be detrimental to the public health, safety or welfare, detrimental to the orderly development of the area or adjacent properties, or contrary to sound engineering practices.

- e. In granting a modification or waiver, city council may allow the disturbance of a portion of the slope, but may determine that there are some features or areas that cannot be disturbed. These include, but are not limited to:
 - (i) Large stands of trees;
 - (ii) Rock outcroppings;
 - (iii) Slopes greater than 60%.

City council shall consider the potential negative impacts of the disturbance and regrading of critical slopes, and of resulting new slopes and/or retaining walls. City council may impose conditions as it deems necessary to protect the public health, safety or welfare and to insure that development will be consistent with the purpose and intent of these critical slopes provisions. Conditions shall clearly specify the negative impacts that they will mitigate. Conditions may include, but are not limited to:

- (i) Compliance with the "Low Impact Development Standards" found in the City Standards and Design Manual.
- (ii) A limitation on retaining wall height, length, or use;
- (iii) Replacement of trees removed at up to three-to-one ratio;
- (iv) Habitat redevelopment;
- (v) An increase in storm water detention of up to 10% greater than that required by city development standards;
- (vi) Detailed site engineering plans to achieve increased slope stability, ground water recharge, and/or decrease in stormwater surface flow velocity;
- (vii) Limitation of the period of construction disturbance to a specific number of consecutive days;
- (viii) Requirement that reseeding occur in less days than otherwise required by City Code.

(7) *Exemptions.* A lot, structure or improvement may be exempt from the requirements of these critical slopes provisions, as follows:

- a. Any structure which was lawfully in existence prior to the effective date of these critical slopes provisions, and which is nonconforming solely on the basis of the requirements of these provisions, may be expanded, enlarged, extended, modified and/or reconstructed as though such structure were a conforming structure. For the purposes of this section, the term "lawfully in existence" shall also apply to any structure for which a site plan was approved or a building permit was issued prior to the effective date of these provisions, provided such plan or permit has not expired.
- b. Any lot or parcel of record which was lawfully a lot of record on the effective date of this chapter shall be exempt from the requirements of these critical slopes provisions for the establishment of the first single-family dwelling unit on such lot or parcel; however, subparagraph (5)(b) above, shall apply to such lot or parcel if it contains adequate land area in slopes of less than 25% for the location of such structure.
- c. Driveways, public utility lines and appurtenances, stormwater management facilities and any other public facilities necessary to allow the use of the parcel shall not be required to be located within a building site and shall not be subject to the building site area and dimension requirements set forth above within these critical slopes provisions, provided that the applicant demonstrates that no reasonable alternative location or alignment exists. The city engineer shall require that protective and restorative measures be installed and maintained as deemed necessary to insure that the development will be consistent with the purpose and intent of these critical slopes provisions.

(9-15-03(3); 11-21-05; 1-17-06(7); 1-17-12; 7-16-12)

CITY OF CHARLOTTESVILLE
DEPARTMENT OF NEIGHBORHOOD DEVELOPMENT SERVICES
STAFF REPORT



ENGINEERING REVIEW OF APPLICATION FOR A WAIVER: STEEP SLOPES

Project Review / Analysis (Kroger – Seminole Square)

The applicant has provided detailed information in the attached narrative for each item discussed below:

Finding #1:

The applicant's explanations are summarized below and the format parallels what was provided with the waiver application. *Comments from the Engineering Staff are indicated in italics.*

1. Erosion affecting the structural integrity of those features:

The applicant explains the existing slopes are manmade. The applicant also indicates that the City has suggested that the pond be removed as part of this development. *Engineering Staff agrees that the slopes are manmade and is supportive of the concept provided with this application package.*

2. Stormwater and erosion-related impacts on adjacent properties:

The applicant states the land down gradient of the slopes will be protected by measures which provide permanent sediment & runoff control. *Engineering Staff agrees that the applicant's method of permanent stabilization will address concerns; however staff will be working closely with the consultant and other departments to achieve a more natural design approach. This will occur through the normal plan review process after a determination of the critical slope waiver is made.*

3. Stormwater and erosion-related impacts to environmentally sensitive areas such as stream and wetlands:

The applicant states that the existing site offers little to no runoff water quality and that the proposed design will reduce the runoff rates and provides water quality measures. *Engineering Staff agrees that the current site provides little stormwater controls and that the proposed design will meet or exceed the regulatory requirements for water quantity and water quality.*

4. Increased stormwater velocity due to loss of vegetation:

The applicant indicates that the pond is undersized and is a source for continued maintenance. *Engineering Staff confirms our request to remove the pond and provide the plunge pool to dissipate energy and reduce velocity.*

5. Decreased groundwater recharge due to changes in the site hydrology:

The applicant suggests that the proposed design will increase the opportunity for water to infiltrate into the ground. *Engineering Staff agrees with the theory behind the explanation. The calculations to support the timing of the storms will be reviewed during the final plan submission.*

6. Loss of natural or topographic features that contribute substantially to the natural beauty and visual quality of the community such as loss of tree canopy, forested areas and wildlife habitat:

The applicant believes there is little natural beauty as the slopes currently exist. *Engineering Staff would add that the existing pond which is proposed to be removed is an unattractive, unnatural feature that has been a burden on the City's maintenance crews for many years. As mentioned previously, City staff will be working closely with the consultant to fine tune the proposed design so it satisfies all affected parties.*

Finding #2

The applicant explains that site constraints prohibit use of the property unless the slopes are disturbed. *Engineering Staff has no comments regarding this matter.*

Engineering Recommendation

Engineering staff recommends approval of the critical slope waiver application as the technical issues regarding disturbance of these critical slopes will be mitigated with the proposed development and the proposed design will meet state and local minimum control requirements for stormwater runoff. In addition, the applicant has shown a willingness to provide additional treatment beyond the regulatory requirements on site and remove the existing pond at the City's request.

This document was prepared by:
George W. Barlow, III, Division Attorney
The Nature Conservancy
490 Westfield Road
Charlottesville, Virginia 22901

2012
002103

Tax Map Parcel(s): Tax Map 41D Parcel 107 (City of Charlottesville)
Tax Map 41B Parcel 4A (City of Charlottesville)
Portion of Tax Map 41B Parcel 6 (City of Charlottesville)

CONSERVATION EASEMENT

THIS DEED OF GIFT OF CONSERVATION EASEMENT ("Conservation Easement"), exempt from all recordation taxes pursuant to Virginia Code §§ 58.1-811(C)(4), (D) and (F), is made on this 10th day of May, 2012, by the CITY OF CHARLOTTESVILLE, VIRGINIA, a municipal corporation, with an address of Post Office Box 911, Charlottesville, Virginia 22902 ("Grantor"), and THE NATURE CONSERVANCY, a non-profit corporation organized and existing under the laws of the District of Columbia, with a local address of 490 Westfield Road, Charlottesville, Virginia 22901 ("Grantee" or "Conservancy").

RECITALS:

A. Grantor is the sole owner in fee simple of the property legally described in Exhibit A, attached hereto and incorporated by this reference, which consists of three (3) parcels including Parcel 1 consisting of approximately 1.460 acres (Tax Map 41D Parcel 107) (shown on the plat in Exhibit B), Parcel 2 consisting of 3.33 acres (Tax Map 41B Parcel 4A), and Parcel 3 consisting of 4.421 acres (Portion of Tax Map 41B Parcel 6) located in the City of Charlottesville, Commonwealth of Virginia.

B. As used herein, the term "Property" shall refer collectively together to Parcel 1, Parcel 2, and Parcel 3, which consists of approximately 9.211 acres in the aggregate, more or less, located in the City of Charlottesville, Commonwealth of Virginia, as described hereinabove.

C. The Commonwealth of Virginia has authorized the creation of conservation easements pursuant to the Virginia Conservation Easement Act, Virginia Code §10.1-1009 *et seq.* (the "Conservation Easement Act"), and Grantor and Grantee wish to avail themselves of the provisions of that law.

D. As required under §10.1-1010(E) of the Conservation Easement Act, the use of the Property for open space land conforms to the City of Charlottesville 2007 Comprehensive Plan (the "Comprehensive Plan"), as more particularly set forth in this Paragraph. The Guiding Principles of the Comprehensive Plan state that the Charlottesville community "puts a value on trees, parks, greenspace, stream and biodiversity as adding to the appearance and livability of the City" and "balances the natural and built environments and practices sustainability in its decisions" (Chapter 2). The "Environment" chapter of the Comprehensive Plan includes the goal to "promote, protect and restore riparian (streamside) and stream ecosystems to protect habitat

and water quality for people and animals” (Chapter 8). The Comprehensive Plan outlines specific objectives to reach this goal, including: “promote and participate in existing programs to accept conservation or open-space easements of forested stream-side lands to ensure permanent protection,” “restore degraded stream buffers through voluntary planting programs and the removal of pollution sources and invasive plants,” and “ensure riparian ecosystem health and water quality by repairing failing sewer infrastructure in degraded stream areas and reducing sources of stream bank erosion.” The “Land Use and Urban Design” chapter of the Comprehensive Plan includes the goal to “regulate the use of land to assure the protection, preservation and wise use of the City’s natural, historic and architecturally significant environment” and the specific objective to “continue to monitor development through enforcement of site plan/subdivision review, zoning, soil erosion ordinances and a better system of bonding performance, to ensure protection of limited natural resources and sensitive environmental areas, including designated flood plain areas and rivers” (Chapter 5).

E. The Property contains approximately 2,190 linear feet of frontage on Meadow Creek, 603 linear feet of frontage on tributaries to Meadow Creek, and 0.7 acres of wetlands. Protection of the Property’s frontage on Meadow Creek is consistent with the City of Charlottesville’s Water Protection Ordinance, voluntarily adopted by the City in 2004, which ordinance establishes stream buffers along three City streams, including Meadow Creek, for the purposes of “retarding runoff, preventing erosion, and filtering nonpoint source pollution from runoff.” The specific purposes of the Water Protection Ordinance are to:

- “(1) Inhibit the deterioration of public waters and waterways resulting from land disturbing activities;
- (2) Protect the safety and welfare of citizens, property owners, and businesses by minimizing the negative impacts of increased stormwater runoff from new land development and redevelopment;
- (3) Control nonpoint source pollution, erosion and sedimentation, and stream channel erosion;
- (4) Maintain the integrity of existing stream channels and networks for their biological functions, drainage, and natural recharge of groundwater;
- (5) Protect the condition of public waters for all reasonable public uses and ecological functions;
- (6) Provide for the long-term responsibility for and maintenance of stormwater management facilities and best management practices;
- (7) Facilitate the integration of stormwater management and pollution control with other city ordinances and with federal, state and local programs, policies, regulations and guidelines; and
- (8) Prohibit illicit connections and discharges to the City’s municipal storm sewer system.”

F. The Property contains nearly 2,800 linear feet of frontage on Meadow Creek and tributaries to Meadow Creek. Meadow Creek is a tributary of the Rivanna River which joins the James River and flows into the Chesapeake Bay. The Nature Conservancy has identified the Rivanna River watershed as one of the five best examples of a Piedmont freshwater system remaining in Virginia. As stated in the Chesapeake 2000 Agreement, signed by the Governor of

Virginia and the Administrator of the U.S. Environmental Protection Agency, “[t]he Chesapeake Bay is North America’s largest and most biologically diverse estuary, home to more than 3,600 species of plants, fish and animals.” A goal of the Chesapeake 2000 Agreement is to “expand the use of voluntary and market-based mechanisms such as easements...to protect and preserve natural resource lands.” The Commonwealth of Virginia established the Virginia Water Quality Improvement Fund in part to meet its commitments under the Chesapeake 2000 Agreement. The Fund provides grants for projects including “the acquisition of conservation easements related to the protection of water quality and stream buffers.”

G. Protection of the Property’s frontage on Meadow Creek is consistent with the purposes and policies of the Chesapeake Bay Preservation Act, §§10.1-2100 to 10.1-2116 of the Code of Virginia (the “Chesapeake Bay Preservation Act”), which establishes the Chesapeake Bay Local Assistance Board to promulgate regulations and criteria for land use controls to protect water quality in the Chesapeake Bay and its tributaries, including Meadow Creek, which flows into the Rivanna River, a tributary of the James River.

H. The Commonwealth of Virginia has placed Meadow Creek and a segment of the Rivanna River just downstream of its confluence with Meadow Creek on the Clean Water Act (33 U.S.C. § 1251 *et seq.*) Section 303(d) list of impaired waterways for aquatic life and bacterial impairments. Excessive sedimentation, resulting from urban runoff and streambank erosion, is believed to be a major cause of the aquatic life impairments in Meadow Creek and the Rivanna River. Preventing development of the Property, restoring Meadow Creek, and preserving the forested buffer and wetlands along Meadow Creek will aid in reducing sedimentation and retarding and filtering runoff entering Meadow Creek and the Rivanna River.

I. This Conservation Easement protects Meadow Creek, the Rivanna River, and the Chesapeake Bay by, among other things, restricting development, construction, and disturbance of vegetation on the Property, thus preventing excessive degradation of aquatic habitat. In particular, this Conservation Easement protects the habitat for aquatic species by (i) preserving forested riparian buffers and floodplain wetlands along Meadow Creek, which buffers and wetlands trap sediments, filter run-off, prevent streambank erosion, and generally protect and enhance water quality, and (ii) preventing certain development and uses of the Property, such as the creation of impervious surfaces on the Property, that would increase runoff and pollution and materially impair the habitat for aquatic species in Meadow Creek, the Rivanna River, and the Chesapeake Bay.

J. Conditions on the Property are suitable for aquatic resource restoration. Restoration activities will improve water quality, providing substantial benefits to the ecological process and environmental conditions of Meadow Creek and systems downstream, including the Rivanna River and the Chesapeake Bay.

K. The Property, in its entirety, has ecological value as mitigation as that term is used in conjunction with impacts to aquatic resources in relation to the Clean Water Act, 33 U.S.C. § 1251 *et seq.* (“CWA”), and funds from the Virginia Aquatic Resources Trust Fund (the “Trust Fund”) will be used to restore, enhance, or preserve the Property; and, because funds were paid into the Trust Fund on account of impacts permitted under the CWA by the Department of the

Army, the Trust Fund and the United States Army Corps of Engineers ("USACE") are third-party beneficiaries of this Conservation Easement.

L. The characteristics of the Property, its current use and state of improvement, are described in a report entitled "Baseline Report of City of Charlottesville Meadow Creek Conservation Easement (Tax Map Parcel 41D-107, Tax Map Parcel 41B-4A, and Portion of Tax Map Parcel 41B-6)", dated December 8, 2011, as amended, prepared by Grantee for Grantor (the "Baseline Report"). Grantor worked with Grantee to ensure that the report is a complete and accurate description of the Property as of the date of recordation of this Conservation Easement. Grantor and Grantee agree that the Baseline Report will be amended following stream restoration work to document the final restoration plan. The Baseline Report, as amended, will be used by Grantor and Grantee to assure that any future changes in the use of the Property will be consistent with the terms of this Conservation Easement. However, the Baseline Report is not intended to preclude the use of other evidence to establish the present condition of the Property if there is a controversy over its use.

M. Grantor and Grantee have the common purpose of conserving the above-described conservation values of the Property in perpetuity.

NOW, THEREFORE, Grantor, for and in consideration of the facts recited above and of the mutual covenants, terms, conditions and restrictions contained herein and as an absolute and unconditional gift, hereby gives, grants, and conveys unto Grantee a Conservation Easement in perpetuity over the Property of the nature and character as follows:

1. **PURPOSES.** The purposes of this Conservation Easement are as follows: to restore and enhance stream and riparian resources; to ensure that the Property will be retained forever predominantly in its natural and scenic condition; to protect water quality within the Rivanna River watershed; to protect native plants, animals, or plant communities on the Property; to protect wetland and aquatic resources; in part to provide ecological value as mitigation for impacts to aquatic resources; to prevent any use of the Property that will significantly impair or interfere with the conservation values of the Property described above, while allowing for traditional uses on the Property that are compatible with and not destructive of the conservation values of the Property, such as hiking, fishing, and picnicking.

Grantor will not perform, nor knowingly allow others to perform, any act on or affecting the Property that is inconsistent with the purposes of this Conservation Easement. Nothing in this Conservation Easement shall require Grantor to take any action to restore the condition of the Property after any act of God or other event over which Grantor had no control, including but not limited to activities of beavers and the unauthorized activities of third parties. Grantor understands that nothing in this Conservation Easement relieves it of any obligation or restriction on the use of the Property imposed by law.

2. **DEFINITIONS.** As used in this Conservation Easement:

A. Existing Improvements and Constructed Features – Those existing structures, facilities, utilities, Trails (defined below), and other man-made additions to the natural environment located on the Property as of the date of recordation of this Conservation Easement and described and depicted in the Baseline Report.

B. Improvements – Improvements consist of any building, structure, or man-made addition to the Property, including but not limited to roads, residences, out-buildings, sheds, barns, tree-houses, house and office trailers, tennis and other recreation courts, and swimming pools placed, built, or constructed on the Property after the date of recordation of this Conservation Easement. For the purposes of this definition, Improvements do not include Trails (defined below), structures and facilities associated with utilities (pipes, valves, manholes, etc.), fences, signs, picnic tables, benches, or movable items not affixed to real estate that have a *de minimis* impact on ground area.

C. Invasive Plants – Plants included on the most current list of Virginia Department of Conservation and Recreation's "Invasive Alien Plant Species of Virginia" or, if such list ceases to be published, a similar list promulgated by the Commonwealth of Virginia or the federal government, which Grantee shall notify Grantor is the list that shall be binding on Grantor for purposes of this Conservation Easement.

D. Stream Mitigation Activities – On Parcel 1, the restoration of approximately 478 linear feet of Meadow Creek (one bank), the preservation of approximately 85 linear feet of a tributary to Meadow Creek, and the enhancement and preservation of a riparian buffer along each of these reaches; on Parcel 2, the restoration of approximately 575 linear feet of Meadow Creek (both banks), the preservation of approximately 324 linear feet of a tributary to Meadow Creek, and the enhancement and preservation of a riparian buffer along each of these reaches; and on Parcel 3, the restoration of approximately 1,137 linear feet of Meadow Creek (both banks), the preservation of approximately 194 linear feet of a tributary to Meadow Creek, and the enhancement and preservation of a riparian buffer along each of these reaches.

E. Trails – Those dirt (or other pervious surface) trails and paths, and associated footbridges over streams or ditches, located within the Property. The locations of existing Trails are described and depicted graphically in the Baseline Report.

3. **PROPERTY USES.** Any activity on or use of the Property inconsistent with the purposes of this Conservation Easement is prohibited. Without limiting the generality of the foregoing, the following is a listing of activities and uses which are expressly prohibited or which are expressly allowed. Grantor and Grantee have determined that the allowed activities do not impair the conservation values of the Property. Additional retained rights of Grantor are set forth in Paragraph 4 below.

3.1 Subdivision. Neither Parcel 1, Parcel 2 nor Parcel 3 shall be divided, subdivided or partitioned, nor shall any of such Parcels be conveyed or pledged for a debt except in its

current configuration as an entity. Provided, however that the separate transfer, conveyance or encumbrance of the entirety of Parcel 1, Parcel 2, or Parcel 3 shall not be considered a subdivision of the Property. Any parcel transferred or conveyed shall remain subject to the terms of this Conservation Easement, and shall not be further divided, subdivided or partitioned.

3.2 Improvements. No new Improvements may be constructed or placed on the Property.

3.3 Existing Improvements and Constructed Features. Grantor shall have the right and is expressly permitted to, and may permit others to, maintain, remodel, operate and repair Existing Improvements and Constructed Features on the Property (including Trails) as described and detailed in the Baseline Report, and in the event of their destruction or obsolescence, to reconstruct or replace any such Existing Improvement or Constructed Feature with another of similar size, function, capacity, location and material. Grantor shall have the right to replace and relocate the existing Trail that is located roughly parallel to Meadow Creek, provided that no trees planted as part of the stream restoration project are removed to replace and relocate the trail, and provided that the relocated Trail: i) is no more than eight (8) feet in width, ii) has a pervious surface, iii) is co-located within the existing utility rights-of-way when reasonably practicable, and iv) in cases where it is not possible to co-locate the Trail within existing utility rights-of-way, is located as far away from Meadow Creek as is reasonably practicable. Extensions of existing utilities shall be considered new utilities covered in Paragraph 3.4.

3.4 Utilities.

(a) New Public Utilities. The construction, installation, relocation, repair, replacement, remodeling, operation and maintenance of public utility structures and facilities placed, built, or constructed on the Property after the date of recordation of this Conservation Easement shall be permitted, provided that: i) to the extent reasonably practicable, the location of such utilities shall be not less than one hundred (100) feet from Meadow Creek unless Grantee and USACE consent to the location of utilities within such 100 foot buffer, which consent shall not be unreasonably withheld; ii) no more land or vegetation shall be disturbed than is reasonably necessary to construct, install, relocate, repair, replace, remodel, operate and maintain the utilities; and iii) construction, installation, relocation, repair, replacement, remodeling, operation and maintenance of such utilities shall comply with applicable federal, state, and local requirements and permits and be conducted in a manner that protects water quality and to the extent reasonably practicable does not damage the stream restoration project. In the event that the stream restoration project is damaged as a result of the activities permitted under this paragraph, the project shall be restored to its status prior to such damage.

(b) New Private Utilities. The construction, installation, relocation, repair, replacement, remodeling, operation and maintenance of private utility structures and facilities placed, built, or constructed on the Property after the date of recordation of this Conservation Easement may be permitted subject to prior written consent of Grantee,

USACE, and Grantor, except that consent shall not be required for maintenance of permitted new private structures and facilities.

- 3.5 New Trails. Grantor shall have the right to construct Trails on the Property after the date of recordation of this Conservation Easement provided (i) new Trails are no more than six (6) feet in width and (ii) no trees planted as part of the stream restoration project and no existing trees (other than Invasive Plants) over two (2) inches in diameter at breast height ("dbh") are removed to construct new Trails. Grantor shall have the right to construct a boardwalk, construct new Trails wider than six (6) feet, and remove trees for the construction of new Trails, subject to prior written consent of Grantee. The reconstruction or replacement of existing Trails is permitted pursuant to Paragraph 3.3.
- 3.6 Recreational Uses. Grantor shall have the right to engage in and permit others to engage in recreational uses of the Property including, without limitation, fishing, hiking, canoeing, kayaking, and bicycling, provided such activities do not cause substantial damage to or removal of the trees or other vegetation on the Property or otherwise harm riparian and aquatic habitats.
- 3.7 Use of Motorized Vehicles. Except for emergency vehicles, and vehicles necessary for or used in connection with restoration activities and maintenance of restoration activities pursuant to Paragraphs 3.16 and 5.3 and other activities expressly permitted under this Conservation Easement, the use of motorized vehicles is prohibited.
- 3.8 Commercial Use and Development. Any commercial or industrial use of, or activity on, the Property is prohibited.
- 3.9 Introduction of Invasive Plants. Grantor shall not introduce Invasive Plants to the Property. However, Grantee may give consent for such introduction to address a defined land management concern, such as short-term erosion mitigation using annual grasses.
- 3.10 Destruction of Vegetation. There shall be no removal, harvesting, destruction or cutting of trees, shrubs or plants. Notwithstanding the foregoing, Grantor shall have the right to (i) remove trees pursuant to Paragraph 3.5, (ii) remove Invasive Plants and diseased or damaged trees, shrubs, or plants, (iii) cut firebreaks, subject to prior written consent of Grantee, except that such consent shall not be required in case of emergency firebreaks, and (iv) cut and remove trees, shrubs or plants to accommodate the activities expressly permitted under this Conservation Easement, including without limitation utility activities pursuant to Paragraph 3.4.
- 3.11 Changes in Topography. Except as necessary to accommodate the activities expressly permitted under this Conservation Easement, including without limitation utility activities pursuant to Paragraph 3.4, and any such activities that are necessary or expedient to accommodate ecological restoration activities in accordance with Paragraphs 3.16 and 5.3, there shall be: (i) no ditching, draining, diking, filling, drilling, excavating, dredging, or removal or placement of topsoil, sand, gravel, rock, minerals, land fill, dredging spoils or other materials; (ii) no change in the topography of the Property; and (iii) no

disturbance of the soil in any manner. In no event shall mining or hydrocarbon extraction be permitted on the Property.

- 3.12 Water Management. Except as necessary or expedient to accommodate ecological restoration activities in accordance with Paragraphs 3.16 and 5.3, there shall be no alteration, pollution, depletion or extraction of surface water, marshes, or subsurface water on the Property, and no activities shall be conducted on the Property that would be detrimental to water purity or that could alter the natural water level or flow in or over the Property. Notwithstanding the foregoing, to the extent necessary to accomplish construction, installation, relocation, repair, replacement, remodeling, operation and maintenance of utility structures and facilities in accordance with Paragraphs 3.3 and 3.4, temporary alteration of flow is permitted, subject to the prior written consent of Grantee and USACE.
- 3.13 Signage. No signs or billboards or other advertising displays are allowed on the Property, except that signs whose placement, number and design do not significantly diminish the scenic character of the Property may be displayed to state the name and address of the Property, to advertise or regulate permitted on-site activities, to provide educational, interpretive or directional information, to advertise the Property for sale or rent, and to post the Property to control unauthorized entry or use.
- 3.14 No Biocides or Fertilizers. There shall be no use of biocides, including but not limited to pesticides, fungicides, rodenticides, and herbicides, except, with prior written consent of Grantee to control Invasive Plants detrimental to the conservation values of the Property or to control household vermin and other small animals that cannot be practically controlled by selective methods. There shall be no use of fertilizers, except as selectively applied to aid in the establishment of native vegetation planted as part of restoration efforts.
- 3.15 No Dumping. There shall be no dumping of trash, garbage, or other unsightly or offensive material, hazardous substances, or toxic waste on the Property. There shall be no placement of underground storage tanks in, on, or under the Property.
- 3.16 Ecological Restoration Activities. If Grantor reasonably determines that such activities are consistent with the purposes of this Conservation Easement, Grantor may, subject in any event to prior written consent of Grantee and USACE, not to be unreasonably withheld, engage, and permit others to engage, in restoration activities, pertaining to, without limitation, wetlands, stream banks and channels, riparian areas, Invasive Plant infestations, or fire regime, and installation of stormwater or other best management practices to protect or enhance environmental quality. Prior to commencement of any activities pursuant to this Paragraph, Grantor shall have the plans and specifications for such activities approved by, and shall obtain all permits necessary for, engaging in such activities from all local, state and federal authorities with jurisdiction over such activities.
- 3.17 Agriculture. No farming, grazing, or other agricultural activities are permitted on the Property.

3.18 Consent.

(a) For those activities that require consent, Grantor shall submit plans to Grantee for its review prior to initiation of such activities. The plans shall be sufficiently detailed to allow Grantee to fully evaluate the activity's conformance to the Conservation Easement, including but not necessarily limited to location and extent of the proposed activities. No activity requiring consent may take place until Grantee reviews and approves the plans in writing, and in cases where USACE consent is also required, Grantee reviews and approves the plans in writing and submits the plans to USACE and receives USACE approval in writing. Grantee will review proposed activities and, in cases where USACE consent is also required, Grantee will review the proposed activities with USACE and seek written USACE approval in a timely fashion. The plans will be deemed approved unless Grantee or USACE objects in writing, within sixty (60) days of receipt of complete plans, setting forth with specificity the grounds for objections. Grantee agrees that if the activity is consistent with the terms and provisions of this Conservation Easement, Grantee's approval shall not be unreasonably withheld.

(b) The following paragraphs contain activities that require consent of Grantee and USACE:

- (i) Paragraph 3.4 – a) i) the location of new public utility structures and facilities within 100 feet of Meadow Creek and b) the construction, installation, and relocation of new private utility structures and facilities;
- (ii) Paragraph 3.12 – temporary alteration of flow, to the extent necessary to accomplish construction, installation, relocation, repair, replacement, remodeling, operation and maintenance of utility structures and facilities in accordance with Paragraphs 3.3 and 3.4; and
- (iii) Paragraph 3.16 – engaging and permitting others to engage in ecological restoration activities.

(c) The following paragraphs contain activities that require consent of Grantee only:

- (i) Paragraph 3.5 – construction of a boardwalk, construction of new Trails wider than six (6) feet, or removal of trees (other than Invasive Plants) over two (2) inches in diameter at breast height (“dbh”) for the construction of new Trails;
- (ii) Paragraph 3.9 – introduction of Invasive Plants;
- (iii) Paragraph 3.10(iii) – removal, harvesting, destruction or cutting of trees, shrubs or plants to cut firebreaks, except that such consent shall not be required in case of emergency firebreaks; and

- (iv) Paragraph 3.14 – use of biocides to control Invasive Plants detrimental to the conservation values of the Property or to control household vermin and other small animals that cannot be practically controlled by selective methods.

(d) Prior consent is not required in the case of an emergency situation that threatens public health, safety or welfare. Grantor will notify Grantee of the emergency as soon as practicable and inform Grantee of what steps have been taken to abate the emergency.

3.19 Density. Neither the Property nor any portion of it shall be included as part of the gross area of other property not subject to this Conservation Easement for the purposes of determining density, lot coverage, or open space requirements under otherwise applicable laws, regulations or ordinances controlling land use and building density. No development rights that have been encumbered or extinguished by this Conservation Easement shall be transferred to any other lands pursuant to a transferable development rights scheme, cluster development arrangement or otherwise.

3.20 Compliance with the Americans with Disabilities Act (ADA). Nothing contained in this Conservation Easement shall prevent or preclude Grantor from complying with the requirements of the ADA. Prior to undertaking any activity required by the ADA that would be inconsistent with the purposes of this Conservation Easement, Grantor will provide notice to Grantee of such activity.

4. **ADDITIONAL RIGHTS RETAINED BY GRANTOR.** Grantor retains the following additional rights:

4.1 Existing Uses. The right to undertake or continue any activity or use of the Property permitted by encumbrances currently of record or not prohibited by this Conservation Easement. Prior to making any change in use of the Property, Grantor shall notify Grantee and USACE in writing to allow a reasonable opportunity to determine whether such change would violate the terms of this Conservation Easement. No such change may be made without approval of Grantee and USACE in writing.

4.2 Transfer. The right to sell, give, mortgage, lease, or otherwise convey the Property subject to the terms of this Conservation Easement.

5. **GRANTEE'S RIGHTS.** To accomplish the purposes of this Conservation Easement, the following rights are granted to Grantee by this Conservation Easement:

5.1 Right to Enforce. The right of Grantee to preserve and protect the conservation values of the Property and enforce the terms of this Conservation Easement.

5.2 Right of Entry. The right of Grantee's staff, contractors and associated natural resource management professionals, to enter the Property after prior written notice to Grantor, for the purposes of:

- (i) Performing activities associated with a stream restoration project approved by USACE and Grantee;
- (ii) Inspecting the Property to determine if Grantor is complying with the covenants and purposes of this Conservation Easement;
- (iii) Monitoring and research as described below;
- (iv) Management of Invasive Plants as described below; and
- (v) Enforcing the terms of this Conservation Easement.

Prior written notice is not required if Grantee is entering upon the Property because of an ongoing or imminent violation that could, in the sole discretion of Grantee, substantially diminish or impair the conservation values of the Property, as described in Paragraph 7 herein. Such right of entry shall include the permanent right to cross other lands of Grantor for access to the Property.

5.3 Riparian Area and Stream Restoration Activities. Notwithstanding Paragraph 3, the right of Grantee, its officers, employees, contractors, subcontractors and agents, including representatives of USACE, to enter upon the Property and engage in stream and riparian area restoration activities related to the stream restoration project approved by the Trust Fund on November 16, 2007, December 16, 2008 and December 21, 2009, including, without limitation, construction, removal, reshaping and/or reinforcing of the riparian area adjacent to Meadow Creek and other earthworks, planting of native vegetation and trees, and redirecting of streams or other water bodies. Grantee shall be responsible for obtaining all permits and approvals necessary for engaging in such activities, and Grantor shall consent to, and cooperate with, all efforts to obtain such permits and approvals including, without limitation, execution of all permit applications. All such entries shall be by existing Trails on the Property and Grantee shall repair any Trail, fence or gate damaged as a result of such access to its condition immediately prior to such access. Should access be required across areas where Trails do not exist, Grantee may access such restoration sites across the Property as necessary to accomplish the purposes of this Conservation Easement. Grantee shall repair any damages occasioned by such access. Grantee shall also be responsible for conducting restoration activities in a manner that does not damage utilities or other structures, and shall repair any damages to utilities or other structures occasioned by such activities. Grantee shall keep Grantor's interest in the Property free of any liens arising out of any restoration work performed for, materials furnished to or obligations incurred by Grantee. Nothing in this Conservation Easement authorizes Grantee to undertake restoration activities outside of property owned by Grantor. Grantee will provide Grantor with ten (10) business days' notice if a portion or all of the Property will need to be closed temporarily to the public.

5.4 Monitoring and Research. The right, but not the obligation, to monitor the plant and wildlife populations, plant communities and natural habitats, and success of restoration activities on the Property. Grantor shall cooperate with Grantee in establishing, at no

expense to Grantor, a written monitoring and research plan to direct the monitoring of and research on plant and wildlife populations, plant communities and natural habitats, and success of restoration activities on the Property. Grantor agrees that all monitoring activity, natural resource inventory and assessment work or other natural resource research, conducted by Grantor or others, shall be reported to Grantee.

5.5 Management of Invasive Plants. The right, but not the obligation, to control, manage or destroy Invasive Plants that threaten the conservation values of the Property. Grantee will consult with Grantor prior to implementing management activities.

5.6 Discretionary Consent. Grantee's consent for activities otherwise prohibited or requiring Grantee's consent under Paragraph 3 above, may be given under the following conditions and circumstances. If, owing to unforeseen or changed circumstances, any of the prohibited activities listed in Paragraph 3 are deemed desirable by both Grantor and Grantee, Grantee may, in its sole discretion, give permission for such activities, subject to the limitations herein. Such requests for permission, and permission for activities requiring Grantee's consent, shall be in writing and shall describe the proposed activity in sufficient detail to allow Grantee to judge the consistency of the proposed activity with the purpose of this Conservation Easement. Grantee may give its permission only if it determines, in its sole discretion, that such activities (i) do not violate the purpose of this Conservation Easement and (ii) either enhance or do not impair any significant conservation interests associated with the Property. Notwithstanding the foregoing, Grantee and Grantor have no right or power to agree to any activities that would result in the change, alteration, modification, amendment or termination of this Conservation Easement. Under no circumstance may activities that require the consent of USACE be allowed without written consent of USACE.

6. **RESPONSIBILITIES OF GRANTOR AND GRANTEE NOT AFFECTED.** Other than as specified herein, this Conservation Easement is not intended to impose any legal or other responsibility on Grantor, or in any way to affect any existing obligation of Grantor as owners of the Property. Among other things, this shall apply to:

(i) Taxes. Grantor shall be solely responsible for payment of all taxes and assessments levied against the Property.

(ii) Upkeep and Maintenance. Grantor shall be solely responsible for the upkeep and maintenance of the Property, to the extent it may be required by law. Grantee shall have no obligation for the upkeep or maintenance of the Property. Grantor agrees to maintain adequate liability insurance that covers the Property.

7. **ENFORCEMENT.** If Grantee becomes aware of a violation of the terms of this Conservation Easement, Grantee shall give notice to Grantor of such violation and request corrective action sufficient to abate such violation and restore the Property to its previous condition as documented in the Baseline Report, as amended. Grantor agrees that the Baseline Report, also known as a Baseline Documentation Report, shall be deemed to provide objective information concerning the Property's condition at the time of this grant. Grantor and Grantee

agree that the Baseline Report will be amended following stream restoration to document the final restoration plan. Failure by Grantor to abate the violation and take such other corrective action as may be requested by Grantee within thirty (30) days after receipt of such notice shall entitle Grantee to bring an action at law or equity in a court of competent jurisdiction to enforce the terms of this Conservation Easement; to require the restoration of the Property to its previous condition; to enjoin the non-compliance by temporary or permanent injunction in a court of competent jurisdiction; and/or to recover any damages arising from the noncompliance. Such damages, when recovered, may be applied by Grantee, in its sole discretion, to corrective action on the Property. If the court determines that Grantor has failed to comply with this Conservation Easement, Grantor shall reimburse Grantee for any reasonable costs of enforcement, including costs of restoration, court costs and reasonable attorneys fees, in addition to any other payments ordered by such court.

- 7.1 Emergency Enforcement. If Grantee, in its sole discretion, determines that circumstances require immediate action to prevent or mitigate significant damage to the conservation values of the Property, Grantee may pursue its remedies under this paragraph without prior notice to Grantor or without waiting for the period for cure to expire.
- 7.2 Failure to Act or Delay. Grantee does not waive or forfeit the right to take action as may be necessary to ensure compliance with this Conservation Easement by any prior failure to act.
- 7.3 Violations Due to Causes Beyond Grantor's Control. Nothing herein shall be construed to entitle Grantee to institute any enforcement proceedings against Grantor for any changes to the Property due to causes beyond Grantor's control, such as changes caused by fire, flood, storm, earthquake or the unauthorized wrongful acts of third persons. In the event of violations of this Conservation Easement caused by the unauthorized wrongful acts of third persons, Grantor agrees, upon request by Grantee, to join in any suit or to appoint Grantee its attorney-in-fact for the purposes of pursuing enforcement action, all at the election of Grantee.
- 7.4 Standing. By virtue of Grantee's acquisition of rights under this Conservation Easement, it shall be entitled, at its option, to standing before appropriate courts of law to pursue remedies or other matters which are necessary or incidental to the protection of the Property which is subject to this Conservation Easement.
- 7.5 Enforcement by USACE. In case of a dispute involving a possible violation of the terms of this Conservation Easement, and where Grantee fails to bring an action against Grantor under Paragraph 7 within sixty (60) days of notice of such possible violation, then USACE may pursue enforcement, including bringing an action against Grantor for an injunction seeking compliance with the terms of the restrictions contained in this Conservation Easement, including the restoration of the Property to its status prior to the violation. Nothing herein shall be construed to entitle USACE to institute any enforcement proceedings against Grantor for any changes to the Property due to causes beyond Grantor's control, such as changes caused by fire, flood, storm, earthquake or the unauthorized wrongful acts of third persons, and Grantor shall have no obligation to

restore the Property if it has been damaged due to fire, flood, storm, earthquake or the unauthorized acts of third persons.

8. **RIGHT OF USACE ENTRY.** USACE's staff, contractors and associated natural resource management professionals, shall have the right to enter the Property after prior written notice to Grantor, for the purposes of:

- (a) Performing activities associated with a stream restoration project approved by USACE and Grantee;
- (b) Inspecting the Property to determine if Grantor is complying with the covenants and purposes of this Conservation Easement; and
- (c) Enforcing the terms of this Conservation Easement pursuant to Paragraph 7.5.

Prior written notice is not required if USACE is entering upon the Property because of an ongoing or imminent violation that could, in the sole discretion of USACE, substantially diminish or impair the conservation values of the Property, as described in Paragraph 7 herein. Such right of entry shall include the permanent right to cross other lands of Grantor for access to the Property.

9. **TRANSFER OF CONSERVATION EASEMENT.** The parties recognize and agree that the benefits of this Conservation Easement are in gross and assignable. Grantee shall have the right to transfer or assign this Conservation Easement, subject to Grantor's prior written consent, which shall not be unreasonably withheld, conditioned or delayed, to an organization that at the time of transfer, is a "qualified organization" under Section 170(h) of the U.S. Internal Revenue Code, and the organization expressly agrees to assume the responsibility imposed on Grantee by this Conservation Easement. If Grantee ever ceases to exist or no longer qualifies under Sec. 170(h) or applicable state law, a court with jurisdiction shall transfer this Conservation Easement to another qualified organization having similar purposes that agrees to assume the responsibility.

10. **TRANSFER OF PROPERTY.** Any time the Property, or any interest therein, is transferred by Grantor to any third party, Grantor shall notify Grantee in writing at least thirty (30) days prior to the transfer of the Property, and the document of conveyance shall expressly refer to this Conservation Easement.

11. **AMENDMENT OF CONSERVATION EASEMENT.** This Conservation Easement may be amended only with the written consent of Grantor, Grantee and USACE. Any such amendment shall be consistent with the purposes of this Conservation Easement and with the Virginia Conservation Easement Act, VA Code Ann. § 10.1-1009 *et seq.*, or any regulations promulgated pursuant to that law. Grantor and Grantee have no right or power to agree to any amendment that would diminish the enforceability of this Conservation Easement.

12. **TERMINATION OF CONSERVATION EASEMENT.** Grantor hereby agrees that at the time of the conveyance of this Conservation Easement to Grantee, this Conservation Easement gives rise to a real property right, immediately vested in Grantee.

When a change in conditions takes place which makes impossible or impractical any continued protection of the Property for conservation purposes, and the restrictions contained herein are extinguished by judicial proceeding, Grantee, upon a subsequent sale, exchange or involuntary conversion of the Property, shall be entitled to a portion of the proceeds at least equal to that proportionate value that the cost of replacing the Stream Mitigation Activities bears to the fair market value of the Property as of the date of the sale, exchange or conversion. Grantee's portion of such proceeds, if any, shall be used for stream mitigation purposes as approved by USACE.

13. **EMINENT DOMAIN.** Whenever all or part of the Property is taken in exercise of eminent domain ("taking") by public, corporate, or other authority so as to abrogate the restrictions imposed by this Conservation Easement, Grantor and Grantee shall join in appropriate actions at the time of such taking to recover the full value of the taking and all incidental or direct damages resulting from the taking, which proceeds shall be divided in accordance with the proportionate value of Grantee's and Grantor's interests as described in Paragraph 12, and Grantee's proceeds shall be used for stream mitigation purposes as approved by USACE. All expenses incurred by Grantor and Grantee in such action shall be paid out of the recovered proceeds.

14. **INTERPRETATION.** This Conservation Easement shall be interpreted under the laws of Virginia, resolving any ambiguities and questions of the validity of specific provisions so as to give maximum effect to its conservation purposes.

15. **TITLE.** Grantor covenants and represents that Grantor is the sole owner and is seized of the Property in fee simple and has good right to grant and convey this Conservation Easement; that to its knowledge the Property is free and clear of any and all encumbrances other than those currently of record (e.g., utility easements), including but not limited to, any deeds of trust or mortgages not subordinated to this Conservation Easement, and that Grantee shall have the use of and enjoy all of the benefits derived from and arising out of this Conservation Easement. This Conservation Easement is specifically made subject to: (a) that certain Easement Modification Agreement by and between Cannon/Hearthwood Limited Partnership, a Virginia limited partnership, and Rivanna Water and Sewer Authority ("RWSA") as grantee recorded in the Clerk's Office of the Circuit Court of the City of Charlottesville as Instrument No. 2009002416, (b) that certain Easement Modification Agreement and Deed of Easement by and between Region Ten Community Services Board, Inc., a Virginia non-stock corporation, and RWSA as grantee recorded in the aforesaid Clerk's Office as Instrument No. 2010000162, and (c) that certain Easement Modification Agreement by and between Grantor herein and RWSA as grantee recorded in the aforesaid Clerk's Office as Instrument No. 201104209, as well as any other easements, conditions, restrictions, and reservations contained in duly recorded deeds, plats and other instruments constituting constructive notice in the chain of title to the property hereby encumbered, which have not expired by limitation of time contained therein or have not otherwise become ineffective.

16. **NOTICES.** Any notices required by this Conservation Easement shall be in writing and shall be personally delivered or sent by first class mail, to Grantor and Grantee, respectively, at the following addresses, unless a party has been notified by the other of a change of address.

To Grantor:
City Attorney
City of Charlottesville
Post Office Box 911
Charlottesville, VA 22902
Fax: 434-970-3022

To Grantee:
Legal Department
The Nature Conservancy
490 Westfield Road
Charlottesville, VA 22901
Fax: 434-817-9381

With a copy to:
Director of Parks and Recreation
City of Charlottesville
Post Office Box 911
Charlottesville, VA 22902
Fax: 434-970-3889

With a copy to:
The Nature Conservancy
Virginia Field Office
490 Westfield Road
Charlottesville, VA 22901
Fax: 434-979-0370

17. **ENVIRONMENTAL CONDITION.** Grantor warrants that it has no actual knowledge of a release or threatened release of hazardous substances or wastes on the Property.

18. **SEVERABILITY.** If any provision of this Conservation Easement is found to be invalid, the remaining provisions shall not be altered thereby.

19. **PARTIES.** Every provision of this Conservation Easement that applies to Grantor or Grantee shall also apply to their respective heirs, executors, administrators, assigns, and all other successors as their interest may appear. The Trust Fund and USACE are third-party beneficiaries to this Conservation Easement.

20. **RE-RECORDING.** In order to ensure the perpetual enforceability of the Conservation Easement, Grantee is authorized to re-record this instrument or any other appropriate notice or instrument.

21. **MERGER.** The parties agree that the terms of this Conservation Easement shall survive any merger of the fee and easement interest in the Property.

22. **SUBSEQUENT LIENS ON PROPERTY.** No provisions of this Conservation Easement should be construed as impairing the ability of Grantor to use this Property as collateral for subsequent borrowing, provided that any mortgage or lien arising from such a borrowing would be subordinate to this Conservation Easement.

23. **ACCEPTANCE & EFFECTIVE DATE.** As attested by the signature of the authorized representative of The Nature Conservancy affixed hereto, Grantee hereby accepts without reservation the rights and responsibilities conveyed by this Conservation Easement. This Conservation Easement is to be effective the date recorded in the Clerk's Office of the Circuit Court of the City of Charlottesville, Virginia.

24. **MITIGATION CREDIT(S).** All mitigation credits derived from the Property and/or work that has mitigation value with relation to the Trust Fund are to be allocated to, owned by and maintained by Grantee as provided for through the Trust Fund.

By ordinance adopted January 3, 2012, the Mayor was authorized by the City Council to sign this Deed of Gift of Conservation Easement.

TO HAVE AND TO HOLD, this Grant of Conservation Easement unto Grantee, its successors and assigns, forever.

IN WITNESS WHEREOF, Grantor and Grantee, intending to legally bind themselves, have set their hands and seals on the date first written above.

GRANTOR:

CITY OF CHARLOTTESVILLE, VIRGINIA,
a municipal corporation

By: Satyendra Singh Huja
Mayor, City of Charlottesville

Approved as to Form:

By: Francesca Jordan
City Attorney or Designee

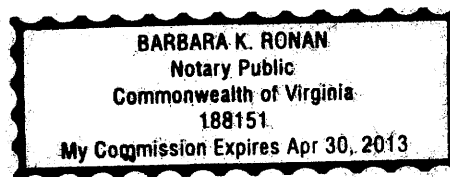
COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF Charlottesville

The foregoing instrument was acknowledged before me this 16th day of MAY, 2012, by Satyendra Singh Huja, who is Mayor of the CITY OF CHARLOTTESVILLE, VIRGINIA, a municipal corporation.

Registration No.: 188151

Barbara K. Ronan
NOTARY PUBLIC

My commission expires:
4/30/2013



GRANTEE:

THE NATURE CONSERVANCY
a District of Columbia non-profit corporation

By: George W. Barlow

Its: Assistant Secretary

COMMONWEALTH OF VIRGINIA
COUNTY OF ALBEMARLE

The foregoing instrument was acknowledged before me on the 15th day of May, 2012, by George W. Barlow, III, who is Assistant Secretary of THE NATURE CONSERVANCY, a District of Columbia non-profit corporation, on behalf of said corporation.

Registration No.: 237883

Susan B. Cresap
NOTARY PUBLIC

My commission expires:
June 30, 2014

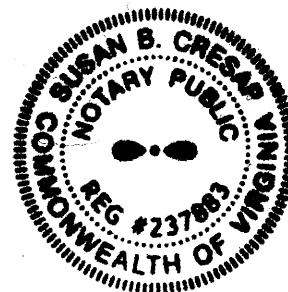


EXHIBIT A

Legal Description of Tax Map 41D Parcel 107 (Parcel 1)

All that certain tract or parcel of land containing 1.460 acres, more or less, together with the improvements thereon and all rights privileges, easements and rights of way thereunto belonging or in anywise appertaining, situate in the City of Charlottesville, Virginia, designated as a "Future Street" on Sheet 1 of a 2-page plat dated November 9, 1967, made by William S. Roudabush, Jr., C.L.S., of record in the Clerk's Office of the Circuit Court of the City of Charlottesville, Virginia, in Deed Book 297, Page 161, and as shown on the Plat made by Draper Aden Associates, dated January 19, 2010, last revised December 5, 2011, and recorded herewith. The aforesaid Plat generally depicts such tract or parcel of land and estimates the acreage thereof.

Being the same property conveyed to the Grantor by quitclaim deed dated November 12, 2009 from Glenn T. Forloines, as Trustee in Dissolution of Grover W. Forloines and Son, Inc., of record in the aforesaid Clerk's Office as Instrument No. 20090005118.

Legal Description of Tax Map 41B Parcel 4A (Parcel 2)

All that certain tract or parcel of land, together with the improvements thereon and all rights privileges, easements and rights of way thereunto belonging or in anywise appertaining, situate in the City of Charlottesville, Virginia, containing approximately 3.3 acres, more or less, located east of Hydraulic Road and north of Brandywine Drive, shown and designated as Parcel B on the Plat made by Draper Aden Associates, dated April 21, 2009 last revised August 11, 2010, and recorded with the hereinafter mentioned deed.

Being the same property conveyed to the Grantor by deed from Region Ten Community Services Board, a Virginia non-stock corporation, dated March 7, 2011 and recorded in the Clerk's Office of the Circuit Court of Charlottesville, Virginia, as Instrument No. 2011000963.

Legal Description of Portion of Tax Map 41B Parcel 6 (Parcel 3)

All that certain tract or parcel of land, together with the improvements thereon and all rights privileges, easements and rights of way thereunto belonging or in anywise appertaining, situate in the City of Charlottesville, Virginia, containing 4.421 acres, more or less, being the greater portion of 4.515 acres, more or less, and more particularly described as Parcel Y on a survey thereof prepared by Roudabush, Gale & Associates, Inc., dated July 29, 2010, and recorded with the hereinafter mentioned deed, and described by metes and bounds according to such survey as follows:

Legal Description of Parcel Y, being a 4.515 Acre portion of the Cannon/Hearthwood property identified as Tax Map 41B, Parcel 5, which portion, pursuant to the hereinafter mentioned deed,

was added to and became a part of that certain property owned by the City of Charlottesville and identified as Tax Map 41B, Parcel 6.

Commencing at the Point of Beginning, a found iron at the end of Michie Drive at the Southern end of Parcel Y, thence along newly created property lines internal to Tax Map 41B, Parcel 5; North 14°49'37" West, a distance of 26.83 feet to a set iron; Thence North 20°51'24" East, a distance of 156.73 feet to a set iron at the back of a concrete curb; Thence North 32°21'28" East, a distance of 163.65 feet to a set iron at the back of a concrete curb; Thence North 02°49'50" East, a distance of 42.30 feet to a set iron at the back of a concrete curb; Thence North 57°20'15" West, a distance of 27.70 feet to a set PK nail at the back of a concrete curb; Thence North 11°12'22" West, a distance of 42.53 feet to a set iron; Thence North 31°13'41" East, a distance of 332.53 feet to a set iron; Thence North 58°05'07" West, a distance of 109.00 feet to a set iron; Thence South 80°54'45" West, a distance of 73.00 feet to a found iron being a common corner with Tax Map 41B, Parcel 15; Thence North 34°20'52" East, a distance of 558.63 feet along the line with Tax Map 41B, Parcel 15 and Tax Map 41C, Parcel 3 to a found monument being a common corner to Tax Map 41C, Parcel 3; Thence South 54°41'34" East, a distance of 135.00 feet to a found iron being a common corner to Tax Map 41B, Parcel 6; Thence South 09°02'48" West, a distance of 353.39 feet to a found iron being a common corner to Tax Map 41B, Parcel 6; Thence South 35°25'46" West, a distance of 55.71 feet to a found iron being a common corner to Tax Map 41B, Parcel 6; Thence South 33°45'24" West, a distance of 155.83 feet to a found iron being a common corner to Tax Map 41B, Parcel 6; Thence South 32°55'41" West, a distance of 190.36 feet to a found iron being a common corner to Tax Map 41B, Parcel 6; Thence South 20°34'54" West, a distance of 217.12 feet to a found iron being a common corner to Tax Map 41B, Parcel 6; Thence South 19°54'22" West, a distance of 180.24 feet to a found iron being a common corner to Tax Map 41B, Parcel 6; Thence South 61°49'07" West, a distance of 141.30 feet to the Point of Beginning. Parcel Y containing 4.515 ACRES, more or less.

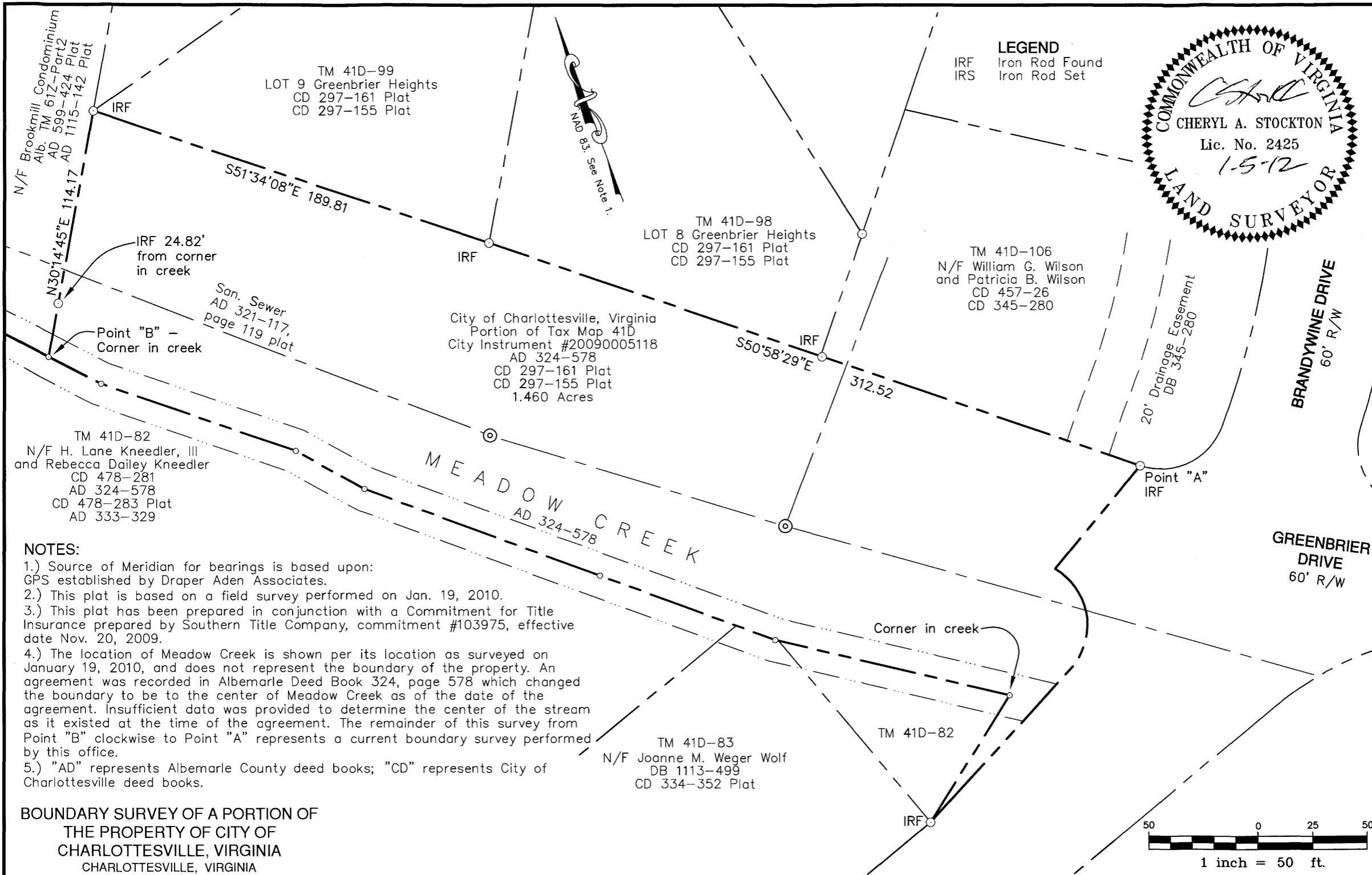
LESS AND EXCEPT that area depicted as Area B containing 0.094 acre, more or less, on that certain plat of survey dated May 2, 2012 entitled "Exhibit Showing Area 'A' and Area 'B' Portions of Tax Map 41B Parcel 6 to be Excluded from Conservation Easement Charlottesville, Va." prepared by William J. Ledbetter, L.S. of Roudabush, Gale & Associates, Inc., attached hereto as Exhibit C and to be recorded herewith.

Being a portion of the property conveyed to the Grantor by deed from Cannon/Hearthwood Limited Partnership, a Virginia limited partnership, dated November 14, 2011, and recorded in the aforesaid Clerk's Office as Instrument No. 201104089.

EXHIBIT B

Plat of Tax Map 41D Parcel 107 (Parcel 1)

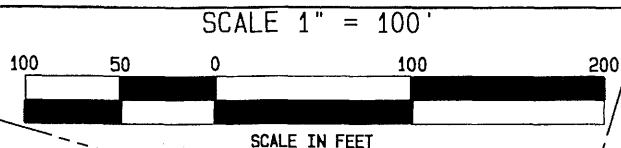
P:\C09\2001\C09241C\01\CAD\C09241C-01.dwg C09241C-01 City 4 boundary.dwg January 10, 2012 2:28:59 PM



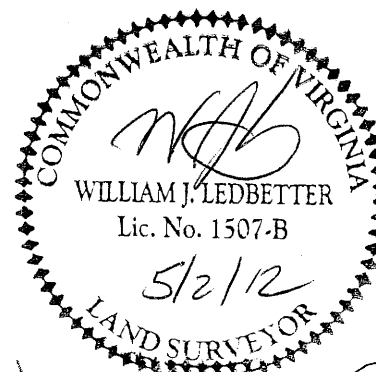
Draper Aden Associates Engineering • Surveying • Environmental Services 700 Harris Street, Suite E Charlottesville, VA 22903 434-295-0700 Fax: 434-295-2105	DRAWN CAS	SCALE 1"=50'
	CHECKED KLC	DATE 01-19-10 REV. 12-05-11
PROJECT: C09241C-01		

EXHIBIT C

Plat of area excluded from Conservation Easement



TMP.41B-5
Cannon/Hearthwood
Instr.#2011004089
DB.672 Pg.806
DB.326 Pg.4(plat)
DB.420 Pg.367(plat)



NAD 83
Va. South Zone
Instr.# 2009002823

CURVE TABLE

LINE	RADIUS	DELTA	ARC	CHORD	CHORD BEARING
C1	264.00	21°59'59"	101.37	100.75	N63°14'53"E
C2	320.00	11°29'59"	64.23	64.12	N68°29'53"E
C3	120.00	67°01'04"	140.36	132.50	S37°44'55"W
C4	185.00	31°21'09"	101.23	99.97	S55°34'53"W
C5	400.00	10°35'01"	73.89	73.78	S45°11'49"W
C6	200.00	16°25'43"	57.35	57.15	S42°16'28"W
C7	64.00	63°08'28"	70.53	67.01	S22°25'32"W

LINE TABLE

LINE	BEARING	DISTANCE
L1	S04°14'23"W	26.86
L2	S71°15'27"W	7.33
L3	S39°54'18"W	15.02
L4	S50°29'19"W	28.96
L5	S34°03'36"W	17.54
L6	S02°56'43"E	23.08
L7	S09°08'42"E	27.01
L8	S53°59'46"W	42.50
L9	S51°30'39"W	17.36
L10	N14°49'37"W	26.83

TMP.41B-4
Region Ten
Community Services BD Inc.
DB.771 Pg.132

TMP.41B-6
City Of Charlottesville
Inst.#2011004089
Inst.#2009-5593
Inst.#2009-5693
DB.410 Pg.316(plat)

San. Sewer Esmt.
D.B.241 Pg.263

San. Sewer Esmt.
D.B.326 Pg.4

Sanitary Sewer
Tie in Esmt.
Inst.#2009002416

Sanitary Sewer Esmt.
Inst.#2009002416

AREA 'B'
0.094 Ac.
4,100.6 Sf.

AREA 'A'
0.658 Ac.
28,667.6 Sf.

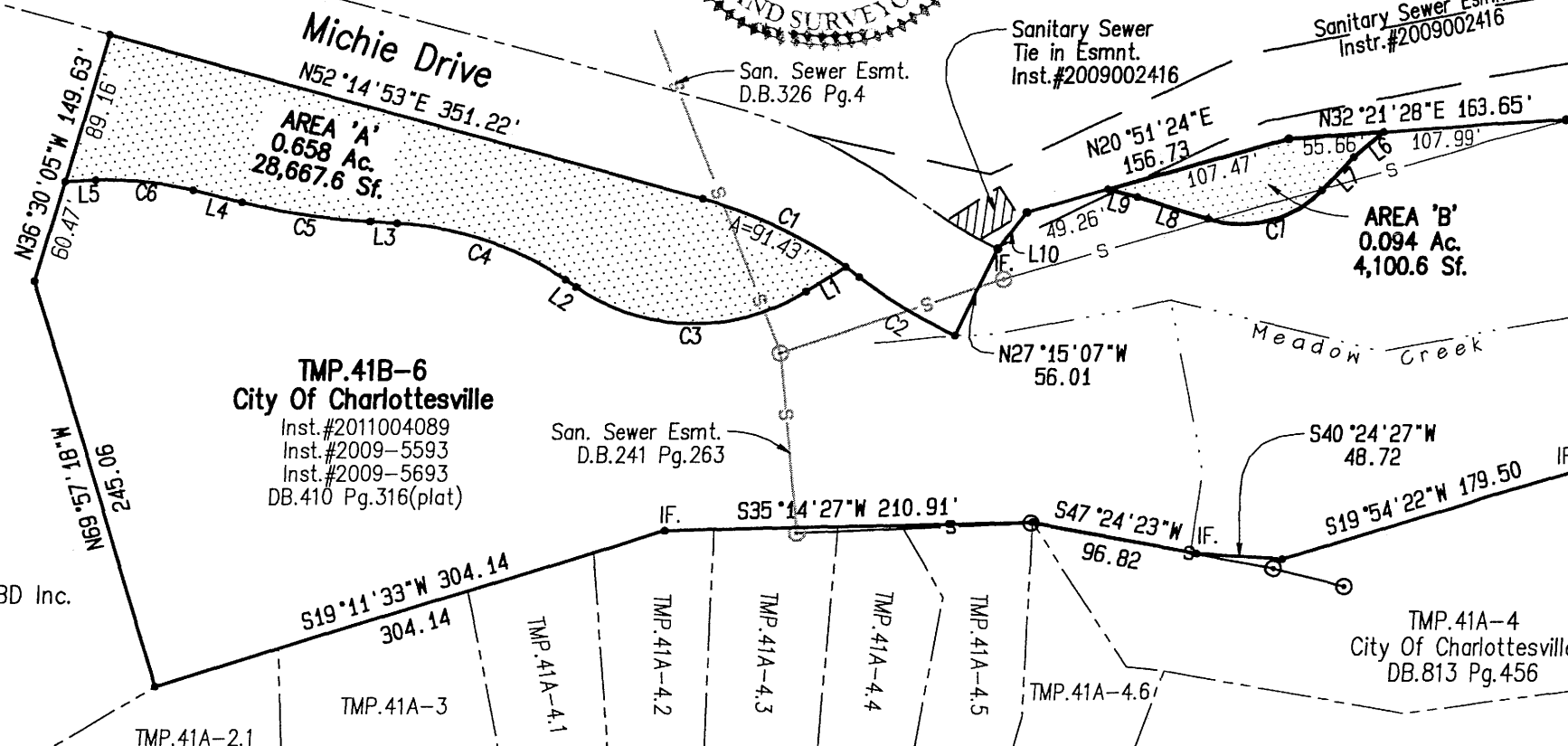


EXHIBIT SHOWING
AREA 'A' AND AREA 'B'
PORTIONS OF TAX MAP 41B PARCEL 6
TO BE EXCLUDED FROM CONSERVATION EASEMENT
CHARLOTTESVILLE, VA.

ROUDABUSH, GALE & ASSOCIATES, INC.

ENGINEERS, SURVEYORS AND LAND PLANNERS



A PROFESSIONAL CORPORATION
SERVING VIRGINIA SINCE 1956

914 MONTICELLO ROAD - CHARLOTTESVILLE, VIRGINIA 22902

PHONE 434-877-0205 - FAX 434-296-5220 - EMAIL INFO@ROUDABUSH.COM



Q:\jpowell\Tmproj\6053\6053_CONSERV_ESMT.pro

MAY 2, 2012
SCALE: 1" = 100'
FILE: #6053-A
SHEET 1 of 1

STATE TAX \$ _____ (039)
CITY TAX \$ _____ (214)
TRANS \$ 10 (212)
TECH. FEE \$ 50 (106)
CLERKS FEE \$ 28.50 (301)
VSLF \$ 10 (145)
STATE FEE \$ _____ (036)
SEC §1-801
STATE TAX \$ _____ (038)
LOCAL TAX \$ _____ (220)
LOCAL TAX \$ _____ (223)
TOTAL \$ 36⁰⁰

Admitted to Record in the Clerk's Office of the
Circuit Court of the City of Charlottesville,
Virginia, On the 18 day of May, 2012
at 11:12 o'clock AM and recorded in
Deed Book No. _____ Page _____
The taxes imposed by §§58.1-801 and 58.1-
802 of the Virginia Code have been paid.

Lezelle A. Dugger, Clerk

COMMONWEALTH OF VIRGINIA



OFFICIAL RECEIPT
CHARLOTTESVILLE CIRCUIT COURT
DEED RECEIPT

DATE: 05/18/12 TIME: 11:12:27 ACCOUNT: S40CLR201202103 RECEIPT: 1200000594C
CASHIER: ARS REG: VP11 TYPE: DG PAYMENT: FULL PAYMENT
INSTRUMENT : 201202103 BOOK: PAGE: RECORDED: 05/18/12 AT 11:12
GRANTOR: CITY OF CHARLOTTESVILLE, VIRGINIA EX: N LOC: CI
GRANTEE: NATURE CONSERVANCY THE EX: N PCT: 100%
AND ADDRESS : 490 WESTFIELD ROAD CHARLOTTESVILLE, VA, 22901
RECEIVED OF : THE NATURE CONSERVANCY DATE OF DEED: 05/10/12
CHECK: \$36.00
DESCRIPTION 1: PLAT ATTACHED PAGES: 24 OF 0
2: MANES: 0
CONSIDERATION: .00 A/VAL: .00 MAP: 41D PARCEL 107
FIN:
301 DEEDS 28.50 145 VSLF 1.50
212 TRANSFER FEE 1.00 105 TECHNOLOGY TRST FMD 5.00
TENDERED : 36.00
AMOUNT PAID: 36.00
CHANGE AMT : .00

DC-18 (1/80)

CLERK OF COURT: LLEZELLE A. DUGGER



**CITY OF CHARLOTTESVILLE
NEIGHBORHOOD DEVELOPMENT SERVICES
MEMO**

To: City of Charlottesville Planning Commission
From: Brian Haluska, Senior Planner
Date: January 27, 2015
Re: Lochlyn Hill Preliminary Site Plan Discussion

Background

The City Council approved the rezoning of the Lochlyn Hill site to Planned Unit Development on September 4, 2012. The concept plan for the approved PUD mentioned a specific block within the development “Block 2B” that was described in the concept plan as follows: “A sub-block, 2B, will support a third residential use, Cottages. The Cottages will be small footprint and small square footage single-family detached homes centralized around a common green space. Parking will be relegated from the primary street as much as possible.”

Following approval of the rezoning the applicant submitted a preliminary site plan that staff felt did not comply with the concept plan. Staff and the applicant discussed staff’s concerns through several meetings. Ultimately, the applicant has re-submitted a preliminary site plan that the applicant feels is their best effort to meet the concept plan, while also addressing the engineering challenges that are presented by the topography of the site.

Staff feels that the description in the concept plan hints at a block ringed by cottage units surrounding a central green space, but concedes that the concept plan does not provide enough specificity about the design of the block to say definitively whether the proposed design meets the plan or not. Staff has also made note of the Commission’s frequently stated concern that the PUD process is prone to the appearance of “bait and switch” tactics where the concept plan is presented to obtain approval, and the finished product falls short of expectations. In light of these concerns, staff feels more comfortable with the Commission making the determination about compliance with the concept plan in a public meeting, rather than staff doing so administratively.

The applicant has requested that the Commission give staff some direction on whether or not the current plan conforms to the concept plan now, so that they will know whether they need to proceed in working on an amendment to the PUD, or if the preliminary plan

can proceed to a future Planning Commission consent agenda following a completed review by staff.

Discussion Item for the Commission

Does the proposed layout for Block 2B as shown on the site plan submission dated January 15, 2015 comply with the original concept plan?

Attachments

Lochlyn Hill Code of Development dated June 4, 2012
Portion of Site Plan submission dated January 15, 2015



LOCHLYN HILL

CODE OF DEVELOPMENT

MEADOWCREEK DEVELOPMENT, LLC



May 8, 2012
as revised June 4, 2012
County of Albemarle
City of Charlottesville

milestone

LOCHLYN HILL -- CODE OF DEVELOPMENT

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- A - Permitted / Prohibited Uses by Block
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- C - Lot Regulations
- D - Restrictions Governing Structures and Uses in Setbacks
- E - Minimum Planting Requirements
- F - Minimum Planting Sizes at Time of Installation

List of Exhibits:

- 1 - Existing Conditions
- 2 - Illustrative General Development Plan
- 3 – 3L – Neighborhood Perspectives
- 4 - Typical Mid-Block Street Sections
- 5 – 5A – Conceptual Site Section
- 6 - Phasing / Block Plan
- 7 - Conceptual Grading Plan

LOCHLYN HILL -- CODE OF DEVELOPMENT

Purpose and Intent

Pursuant to the City of Charlottesville's Code of Ordinances under the Zoning Code – Planned Unit Development Districts (PUD), this document constitutes Lochlyn Hill's General Development Plan and Code of Development.

The current City Zoning Ordinance and Comprehensive Plan calls for residential development for this property. Currently, Tax Map 48A Parcels 39 and 40 (25.8 acres) are zoned R-2 which allows single family detached and attached housing with a feasible density range of 4-12 units per acre. The Lochlyn Hill project proposes a residential PUD (Planned Unit Development) with 4.7 to 5.9 dwelling units per acre, well within the by-right density under R-2 zoning.

Meadowcreek Development, LLC also owns 7.7 acres of land in Albemarle County that adjoin the subject property. This land (Tax Map 61A Parcels 2, 6, 7, 9, 10, 11, 13, 34A and 34B), together with an additional 3.6 acres owned by others (Tax Map 61A Parcels 3, 3A, 3B, 4, 5 and 12) are all contained within the Lochlyn Hill project and will be developed in accordance with the design principles stated herein. The County property is currently zoned R-4 and allows single family, duplex, triplex, and townhouses. It is the intent of Meadowcreek Development, LLC to unify the neighborhood under one Owners' Association and make the constructed amenities available to all residents.

Existing Conditions

The 25.8 acre Lochlyn Hill site is located in the Locust Grove Neighborhood at the end of Penn Park Lane and adjacent to the Meadowcreek Golf Course. It is the site of the former Meadowcreek Treatment Plant property, which was sold by the City of Charlottesville in 1996 to the current owner, Meadowcreek Development, LLC. The two (2) parcels that constitute the project (Tax Map 48A Parcels 39 and 40) contained the Meadowcreek Treatment Plant facilities and infrastructure when purchased but have since been remediated, demolished and removed from the site. The site is currently mixed open space and overgrown weed trees. There is a portion of one remaining structure from the Meadowcreek Treatment Plant remaining on the property; it was formerly an aeration tank during operation of the treatment facility and now exists as a gravel pit. The gravel will be used as temporary lay down material during site construction and the structure will be removed during Phase 2 site construction (Existing Conditions – Exhibit #1).

The existing topography and proximity to Meadowcreek and the Golf Course present minor design challenges but also tremendous opportunities. Starting at 450 feet in elevation, the site gently drops from the entrance off Penn Park Lane until it reaches the floodplain of the Meadowcreek at an elevation of 330 feet. Proximity to the Meadowcreek floodplain will provide access to the City of Charlottesville's planned greenway and the Rivanna Trail Foundation's trail that circumnavigates the City. The adjacency to the Golf Course provides a dramatic view shed and perpetual open space to the east but also allows the RTF trail network, that crosses Meadowcreek, to maintain its natural character as it winds around the eastern border of Lochlyn Hill rather than having to switch to an urban section trail.

LOCHLYN HILL -- CODE OF DEVELOPMENT

Lochlyn Hill's Location and Context within Locust Grove

The Lochlyn Hill property is bordered to the west by the residential housing on Holmes Avenue. The eastern boundary is adjacent to holes 12 and 13 of the 18-hole public Meadowcreek Golf Course and the 280 acre Penn Park, the largest of the City's Parks. To the south, Lochlyn Hill is bordered by Meadowcreek; which will provide greenway access to Charlottesville High School, the Meadowcreek Parkway trail, Penn Park, and Darden Towe Park. Across Meadowcreek is the Locust Meadow neighborhood. The northern boundary of the property owned by Meadowcreek Development, LLC, is the City/County boundary. Meadowcreek Development, LLC owns additional property in the County which it intends to develop in accord with the development pattern established by the Lochlyn Hill PUD.

The Vision for Lochlyn Hill

Successful neighborhoods and communities are not random, unplanned events. In the past, relatively simple planning and controls over time have produced places of such charm and warmth that they have a place in this nation's collective subconscious. This memory and those places that survive today have in many ways set the standard for what our new neighborhoods and communities should be. The difficulty lies in creating in a few years what in the past took several decades. Lochlyn Hill will be a neighborhood and not a subdivision.

In an effort to work with the existing terrain and be sensitive to existing natural features, Lochlyn Hill's plan responds to the surrounding neighborhoods, Meadowcreek, and the golf course. Pedestrian access will be provided along the Meadowcreek with a bridge connection to support the efforts of the Rivanna Trail Foundation and the City Parks and Recreation department in creating greenway connections throughout the City. The Lochlyn Hill master plan works to protect and enhance the natural resources of the area through careful planning and development and creates designated and perpetual Natural Areas where development can never occur.

Additionally the plan responds to the socio-economic needs and desires of the City. By integrating a variety of housing types (single family, townhouse, cottage, and flats), the Lochlyn Hill plan will promote and support social and economic diversity in a way that homogeneous subdivisions cannot.

Structure of this Document

This document is comprised of both narrative and graphic information pursuant to the information required under the City of Charlottesville's Code of Ordinances – Zoning Code – Planned Unit Development Districts (PUD). The narrative portions of this document are broken into four major categories. The first regulates the location, density and intensity of land uses within Lochlyn Hill. The second regulates the form of these uses. The third section regulates the project's streetscape (e.g., typical street and sidewalk cross sections) and parking. The fourth regulates items that do not fit neatly into the above categories. In support of this narrative section, the Code of Development contains graphical exhibits March 13, 2012. Per City Zoning Section 34-517, only the following documents constitute Lochlyn Hill's General Development Plan:

LOCHLYN HILL -- CODE OF DEVELOPMENT

1. Illustrative General Development Plan (Exhibit #2)
2. Phasing / Block Plan (Exhibit #6)
3. Conceptual Grading Plan (Exhibit #7)

At the site plan or subdivision stage, the following items shall be located generally as shown on the General Development Plan and other 3 Exhibits above: Lot locations and boundaries; Building footprints; Parking Areas; Landscaping (except as general construed as major elements in the narrative section pertaining to Amenity, Green Space, or specifically identified landscape areas); Grading; Trail alignments; Stormwater management structures; Utilities; Block location, size, and shape; Road, intersection, and sidewalk alignments. However, the exact locations, boundaries, and/ or shapes of these items may be adjusted per the regulations established within the City Ordinance and this Code of Development.

This Code of Development package includes an Illustrative General Development Plan (Exhibit #2), Neighborhood Perspective (Exhibit #3), Typical Mid-Block Street Sections (Exhibits #4), Conceptual Site Sections (Exhibits #5), and other exhibits. The purpose of these exhibits is to indicate how the project's scale, massing, pedestrian orientation and landscape treatment **may** be achieved at the site plan or subdivision stage. Furthermore, these exhibits can be used by the Director of Neighborhood Development Services as a tool to determine a site plan's or subdivision plat's relative conformity with the Application / Illustrative General Development Plan. However, these exhibits do not represent the specific form of the final product nor do they describe final design requirements.

As stated in the introduction, Lochlyn Hill will provide a rational transition between the existing residential neighborhoods to the north and west and the Meadowcreek and Meadow Creek Golf Course to the south and east. The site's existing topography, road network, and phasing strategy serve as the basis in determining the breaks between the individual blocks. The Illustrative General Development Plan (Exhibit #2) delineates the block's location and shape (Blocks 1, a portion of 3 & 5, and 6 contained within the jurisdiction of the County of Albemarle).

Description of Land Use by Block

This section identifies the most important features and structures within each block. The features in this section must be provided to meet the requirements of the Ordinance.

Block 1

Block 1 is situated solely in Albemarle County and is the primary point of access. This block will serve as the gateway to the Lochlyn Hill neighborhood. When entering the neighborhood, the first element experienced will be a pocket park and entrance signage. These elements are important as they will demonstrate the significance of public open space and set the character of design for the neighborhood. Additionally, the main street cross section will also provide the basis for design of the remainder of the neighborhood, with residential housing close to the street, sidewalks, and street trees combining to create a very inviting and pedestrian friendly streetscape. The entry sequence of Block 1 will terminate at the neighborhood Village Green. This will serve as a visual focal point on the entry drive and also the central public amenity to include programmable green space for active recreation and a possible swim feature. The residential character of this block will be indicative of the

LOCHLYN HILL -- CODE OF DEVELOPMENT

balance of the neighborhood, as it will offer single family detached and townhouses in both a front loaded and rear alley loaded condition.

Block 2A

Block 2A is situated solely in the City of Charlottesville and will be a continuation of the development pattern established in Block 1. Small set backs, street trees, and pedestrian friendly streets will continue in this block and throughout the neighborhood. Larger, front loaded, single family detached lots will comprise the majority of the product type in this block with a few smaller, rear loaded, single family detached.

Block 2B

A sub-block, 2B, will support a third residential use, Cottages. The Cottages will be small foot print and small square footage single family detached homes centralized around a common green space. Parking will be relegated from the primary street as much as possible.

Block 3

Block 3 is situated with a majority of the block in the City and a portion in the County. The Albemarle County portion of the block is comprised of the remainder of the Village Green. Again, this will provide for central green space that is flexible and programmable for both passive and active recreation. This is anticipated to be a central meeting place for residents. The City of Charlottesville portion of Block 3 continues the already established pattern of development with mid-sized single family detached lots and townhouses. The units in this block are all anticipated to be rear loaded.

Block 4A

Block 4A includes single family detached and townhouses, both rear and front loaded. Block 4 is located entirely within the City and will have direct access to the Meadowcreek and pedestrian access to the Rivanna Trail will be made possible by the installation of a bridge to cross the Meadowcreek. A pocket park will also be included in this block.

Block 4B

Block 4B is comprised solely of luxury apartments or condos. This block is also adjacent to the Meadowcreek Golf Course and the multifamily use will take advantage of the grades on site to provide spectacular views of the golf course and surrounding mountain vistas.

Blocks 5 and 6

In Blocks 5 and 6 the pedestrian friendly, tree lined streets, alley access, integrated townhome and single family pattern of development continues. This block is adjacent to greenspace on its north and south boundaries. To the north is the Meadowcreek Golf Course, offering great views, and to the south is the central Village Green, offering active and passive recreation.

LOCHLYN HILL -- CODE OF DEVELOPMENT

Land Uses Permitted/ Prohibited by Block

Table A establishes the uses that are permitted or prohibited by block. If the column under a Block has a "B" filled in, then the use in that row is permitted (i.e., it is by-right) within that block. If the column under a Block has a "S" filled in, then the use in that row is permitted within that block only through a Special Use Permit and a separate Special Use Permit would need to be filed and a separate legislative action would need to be taken by the City of Charlottesville City Council to permit that use. Finally, if a column is left blank, then the use is prohibited within that block.

Table A – Permitted/ Prohibited Uses by Block								
Residential Uses	Block Number							
	1	2A	2B	3	4A	4B	5	6
Detached single family		B	B	B	B	B		
Duplex, Triplex, Townhouse		B	B	B	B	B		
Multi-family		S	S	S	S	B		
Boarding house (rooming house)		S	S	S	S	S		
Accessory building structures and uses		B	B	B	B	B		
Accessory Apartment - Internal		B	B	B	B	B		
Accessory Apartment - External		B	B	B	B	B		
Non-Residential Uses	Block Number							
	1	2A	2B	3	4A	4B	5	6
Houses of Worship		S	S	S	S	S		
Clubs, private - lodges, civic, fraternal, patriotic		S	S	S	S	S		
Farmers' market		S	S	S	S	S		
Home Occupation ¹		P	P	P	P	P		
Education Facilities		S	S	S	S	S		
Stormwater management facilities shown on an approved final site plan or subdivision plat		B	B	B	B	B		
Utility Facilities		B	B	B	B	B		
Utility Lines		B	B	B	B	B		

1. Home Occupation shall be reviewed in accordance with the City's Provisional Use Permit regulations and section 34-1172 of the zoning code.

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Special Single-Family Dwelling and Duplex Unit Regulations

Special single-family dwelling and duplex units are defined below and shall be allowed within Lochlyn Hill only under the following conditions:

Carriage Houses:

Carriage House Units are defined as separate, detached, independent living units which are included on a single family attached or detached unit's lot, but are clearly subordinate to the primary residence. While Carriage House Units may have a distinct street address and may be provided with separate utility meters if utilized as a rental unit, they may not be subdivided from the primary residence. Carriage house units must be located to the rear of the primary residence and must meet all architectural guidelines applicable to the primary residence.



ACCESSORY DWELLING UNITS:

Accessory Dwelling Units are defined as a separate, secondary residential unit that is subordinate to the owner-occupied principal unit. The secondary units are restricted as follows:

- The secondary unit shall always be contained within the same structure as the principle unit.
- The secondary unit may not be subdivided from the principle unit.
- Both units shall meet all fire code and building regulations for a two-family dwelling as defined by the International Residential Code.

Typically, the secondary unit will be located as an efficiency apartment on the ground floor of a walkout structure with the secondary unit's parking provided on-street and the principle unit's parking provided off of a rear-loaded alley. However, depending on grade conditions, the secondary unit might be provided on upper floors or all parking might be provided off-site.

LOCHLYN HILL -- CODE OF DEVELOPMENT

Block Use Density

Tables B sets the minimum densities required and the maximum densities allowed for residential uses in the Lochlyn Hill Neighborhood.

	TABLE B – MINIMUM and MAXIMUM RESIDENTIAL DENSITY				
	Primary Dwelling Unit			Accessory Dwelling Unit ¹	
	MINIMUM	SHOWN ON ILLUSTRATIVE DEVELOPMENT PLAN	MAXIMUM	MINIMUM	MAXIMUM
City of Charlottesville	135	148	175	15	50
County of Albemarle	40	56	60	-	-
TOTAL	175	204	235	25	50

1. The accessory dwelling units are not provided for in the primary dwelling unit counts. They are additive.

Required Green Space, Civic and Amenity Areas

The Lochlyn Hill proposal provides an extensive open space and amenity system that creates recreational opportunities and a sense of space throughout the community. The Green Space, Civic and Amenities Areas will include pedestrian corridors which are designed to interconnect centralized amenities, such as the Community Center and the Village Green, with numerous pocket parks, formal public greens, and less formal Conservation Areas. These public spaces are designed to not only provide users with outdoor space, but also to create focal points within the community and allow for vistas of the surrounding mountains. Moreover, Lochlyn Hill's green space and amenity system is designed to integrate with the surrounding neighborhoods and the amenities at the adjoining Meadowcreek Golf Course

Description of Green Space and Amenity Areas

The Developer shall provide the following formal green spaces and amenity areas:

Entry Park (County)

The Entry Park will serve multiple functions. It will exhibit the character of the neighborhood and serve as a gateway to the Lochlyn Hill neighborhood from the existing housing on Pen Park Lane. It will be naturally landscaped with opportunities for passive recreation. Monument signage will be incorporated into the Entry Park to delineate the neighborhood and will reflect the architectural

LOCHLYN HILL -- CODE OF DEVELOPMENT

character of residential housing. This park will be adjacent to the sales center and at some point in the future, the sales center will be converted into a residence.

The Village Green (County)

The Village Green will include a central, multipurpose lawn that will be the focal point of the neighborhood and will serve as the community gathering space and primary recreational amenity. Additionally, the Green may include a swim feature. The edges of the Village Green will be lined with trees. The Director of Neighborhood Development may approve alterations to final program elements if the alterations better respond to neighborhood interests at the time of construction.

Pocket Park

They are usually developed on irregular pieces of land. Surrounded by existing development on three sides, they literally form a small “pocket” among other buildings. These little parks can bring shade, quiet, and they often turn up in unexpected places. Growing in popularity, pocket parks are easily constructed and provide a space where people can stop to relax, read, eat a packed lunch, or meet friends. In the Lochlyn Hill neighborhood they will function primarily as passive recreation places.

Meadowcreek Greenway Trail

The Meadowcreek Greenway Trail is intended to connect to the larger City of Charlottesville greenway trail that is currently in the planning phase. The trail on the Lochlyn Hill property will be coordinated with the Charlottesville Parks and Recreation Department to determine the surface, width, and final location. A bridge across the Meadowcreek will be provided to connect the Rivanna Trail to the Greenway and to the neighborhood. Additionally, this trail will extend north on the Meadowcreek Golf Course boundary and its final location will be coordinated with Parks and Recreation.

Lot and Building Height Regulations

The following tables and footnotes establish the lot widths, build-to lines, setbacks, minimum frontage requirements, and height restrictions for uses within Lochlyn Hill.

Table C -- Lot Regulations				
Unit Type	Lot Width	Front Build-to Line Range ^{1,2,3,4,11}	Min. Setbacks ^{5,6,7,8,9}	
			Side	Rear
Single Family	61-80	15-30	5	10
Single Family	25-60	10-30	3	10
Townhouse	16-35	5-25	3	10
Multi-Family	n/a	5-25	4	15
Freestanding Signage	n/a	1	1	1

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1. The following structures: porches (1&2 story), porch stairs, decks, balconies, bay windows, raised dooryards, entrance stoops, planters, entry steps and other similar structures are permitted to extend in an attachment zone (i.e., the area in front of the build-to line) by no more than ten (10) feet. Under no circumstances may these structures extend into either the right-of-way or within one (1) foot of the sidewalk (whichever is more restrictive).
2. For single family detached units that are front loaded, the garaged door shall be recessed more than three (3) feet from the established build-to line.
3. Under no circumstances shall the garage door be any closer than eighteen (18) feet to the sidewalk.
4. For Corner Lots, front build-to line shall apply to both segments of the lot facing either street. The side yard setbacks shall apply to the other segments of the lot facing away from the streets.
5. Townhouses and Multi-family unit types may be built along the side yard property line if construction methods are used that allow for a common wall. For townhouse and multifamily structures built on the property line, the structure's footing may cross onto the adjacent lot a maximum of eight (8) inches
6. In front and corner yards, accessory structure setbacks shall be the same as the established build-to line for that Building Block. In side yards, accessory structure setbacks shall be three (3) feet.
7. Covered porches, balconies, chimneys, eaves, and like architectural features may not project into the side yard setback and may not project more than two (2) feet into any rear yard setback. HVAC units are allowed only in the side and rear yards and cannot be within (2) feet of any property line.
8. The regulations of accessory structures are as follows: In front and corner yards, accessory structure setbacks shall be the same as the established build-to-line. In side yards, accessory structure setbacks shall be three (3) feet, except with garages and carports, where the side setback shall be zero (0) feet. In rear yards, accessory structure setbacks shall be five (5) feet.
9. Garages and Carriage Houses may be connected to the main structure under the following conditions: If connected with unconditioned space (e.g. screened porch, covered breezeway, etc.) the modified accessory structure setbacks established in item eight (8) above shall be followed. If connected with conditioned space then the minimum setbacks established in Table C – Lot Regulations shall be followed.
10. No structure shall encroach into any utility, drainage or other easement.
11. The minimum frontage requirement for lots shall be three (3) feet at the public right of way or private easement.
12. The Director of Neighborhood Development Services, in consultation with the appropriate staff, may recommend to the Planning Commission and City Council an amendment to the Lot Regulations in Table C as part of the site plan review, so long as an applicant makes the request in writing and modifying the Lot Regulations would not adversely harm the public health, safety and welfare.

Landscape Standards

Landscaping is a fundamental component of the overall structure of the plan and the establishment of a sense of place. Requirements listed in Chapter 34, Division 2 "Landscape and Screening" if the City Zoning Ordinance shall be adhered to during the site plan review. The Lochlyn Hill Code of Development establishes specific landscaping standards for the following critical landscaped areas on the General Development Plan:

LOCHLYN HILL -- CODE OF DEVELOPMENT

Residential Yards

Landscaping in residential yards should be chosen from the City of Charlottesville recommended species list. Landscaping efforts should concentrate planting efforts adjacent to the house, especially near the entry. A better effect will be achieved using increased quantities of a few species rather than a few plants each of many species. Individual residential dwelling planting plans shall sufficiently screen utility areas, break up the foundation of the building, buffer driveway and parking areas adjacent to property lines, and provide cover for areas disturbed during construction. Adjacent to decks, foundation plantings shall screen foundations or voids.

Sod is required in the front yard of all houses and between the curb and the sidewalk and between the sidewalk and the front façade of the structure. Beds for trees can break the sod along the property line. Corner lots are considered to have two front yards. Sod is required along the side street from the curb to sidewalk and from the sidewalk to the build-to line.

The following tables establish the minimum number and size of trees that will be required in the front yards of residential dwellings. These quantities are minimums for the front of houses; additional plants beyond these numbers are encouraged. If a significant number of existing trees are retained in the front of the lot then this requirement may be reduced or waived. Note: These minimum planting requirements include any trees planted in the right of way immediately in front of or adjacent to the lot.

TABLE D - MINIMUM PLANTING REQUIREMENTS

Lot Width	Deciduous Trees	Evergreen Tree	Shrubs
60' - 80'	2	1	30
50' - 59'	2	1	20
40' - 49'	1	1	15
30' - 39'	1	0	10
< 30'	0	0	5

TABLE E - MINIMUM PLANT SIZES AT TIME OF INSTALLATION

Tree	Size
Deciduous	2-inch caliper
Evergreen	6' height
Shrubs	3 gallon container

LOCHLYN HILL -- CODE OF DEVELOPMENT

Grading

The layout of Lochlyn Hill is in large part a response to the existing topographic conditions of the site. The goal in the planning of Lochlyn Hill is to address the topography of the site not as a constraint but as an opportunity to create vistas, unique roads and development patterns that work with the land and create visual interest. Terracing is an integral element of the site design. Building splits and walkouts shall be used to take up grade. The roads shall be oriented to respond to steeper conditions. The road and development pattern is, in most areas, parallel with the direction of the topography to facilitate the terracing concept.

A Conceptual Grading Plan (Exhibit #8) is included as part of the Illustrative General Development Plan (Exhibit #2).

1. Grading shall provide smooth transitions between the existing topography and newly created slopes.
2. Reconstructed slopes will be no greater than 3:1 unless landscaped. Landscaped slopes can be no greater than 2:1

Retaining walls will be a necessary element of the project and they will be addressed so that they are highly designed and developed as project features and amenities rather than afterthoughts. With retaining walls, the following standards shall be applied:

- Walls over 6-feet tall, as measured from top of wall to the top of the footer, shall be allowed only at recommendation of the Director of Neighborhood Development Services, in consultation with the appropriate staff, to the Planning Commission and City Council for approval.
- Landscaping shall be used at the base and/ or top of walls to integrate these structures into the site and reduce their massing.
- Retaining walls visible from the street or other public area shall be of a higher material quality and shall be compatible with the adjacent building architecture materials and/or colors (e.g., shall be finished with brick, interlocking concrete block, stacked fieldstone, etc.). Retaining walls not visible from the street may be constructed of smooth plaster, finished concrete, or pressure treated wood.

Signage

The signage regulations established in the City Zoning Ordinance shall govern all signage within the Lochlyn Hill PUD.

LOCHLYN HILL -- CODE OF DEVELOPMENT

SUPPLEMENTAL TABLES REQUESTED BY STAFF AND PLANNING COMMISSION

For Additional Information and Clarification Purposes

Table A1 – Permitted/ Prohibited Uses by Block – Compared to City Code									
Residential Uses	Block Number								
	1	2A	2B	3	4A	4B	5	6	R-2
Detached single family		B	B	B	B	B			B
Attached single family (duplex)		B	B	B	B	B			B
Townhouse		B	B	B	B	B			
Multi-family		S	S	S	S	B			
Boarding house (rooming house)		S	S	S	S	S			
Accessory building structures and uses		B	B	B	B	B			B
Accessory Apartment - Internal		B	B	B	B	B			P
Accessory Apartment - External		B	B	B	B	B			P
Residential Treatment Facility		S	S	S	S	S			B
Non-Residential Uses	Block Number								
	1	2	3		4		5	6	R-2
Houses of Worship		S	S	S	S	S			B
Clubs, private - lodges, civic, fraternal, patriotic		S	S	S	S	S			S
Farmers’ market		S	S	S	S	S			
Home Occupation ¹		P	P	P	P	P			P
Education Facilities		S	S	S	S	S			S
Stormwater management facilities shown on an approved final site plan or subdivision plat		B	B	B	B	B			B
Utility Facilities		B	B	B	B	B			B
Utility Lines		B	B	B	B	B			B

LOCHLYN HILL -- CODE OF DEVELOPMENT

TABLE B1 – Density by Block						
	Primary Dwelling Unit			Accessory Dwelling Unit		Block Area and Density
	MINIMUM ¹	SHOWN ON ILLUSTRATIVE DEVELOPMENT PLAN	MAXIMUM	MINIMUM	MAXIMUM	
2A	15	15	19	0	5	6.29 Acres 2.38 Units/Acre
2B	15	15	18	0	5	1.79 Acres 8.37 Units/Acre
3	40	30	40	7	15	5.77 Acres 5.19 Units/Acre
4A	50	40	50	8	15	6.4 Acres 5.47 Units/Acre
4B	15	48	48	0	5	1.93 Acres 24.87 Units/Acre
City of Charlottesville	135	148	175	15	50	
County of Albemarle	40	56	60	-	-	
TOTAL	175	204	235	25	50	

LOCHLYN HILL -- CODE OF DEVELOPMENT

OPEN SPACE	
Total Site	38 Acres
Total Open Space	9.71 Acres (25.5%)
County Area	12.14 Acres
County Open Space	2.65 Acres (21.8%)
City Area	25.86 Acres
City Open Space	7.06 Acres (27.3%)

BLOCK AREA DENSITY			
BLOCK	ACRES	UNITS	UNITS/ACRE
1	5.39	18	3.34
2A	6.29	15	2.38
2B	1.79	15	8.37
3	5.77	30	5.19
4A	6.4	35	5.47
4B	1.93	48	24.87
5	3.59	23	6.41
6	3.05	20	6.56

Lochlyn Hill Housing Trust Fund

Shared Appreciation Models

Future Sale:

		Year 5	Year 10	Year 20
Annual Appreciation	3%			
Initial Price/ Sale Price	\$ 200,000	\$ 231,855	\$ 268,783	\$ 361,222
Net after expenses		7% \$ 215,625	\$ 249,968	\$ 335,937
LHHTF Downpayment	\$ 20,000			
Owner Downpayment	\$ 2,000			
1st DOT Mortgage	\$ 178,000			
Interest Rate	4.5%			
Term (years)	30			
Loan Balance upon Sale		\$ 162,261	\$ 142,559	\$ 87,024
LHHTF Account:				
LHHTF Loan amount	\$ 20,000			
Interest rate	6%			
Annual Interest Amount	\$ 1,200			
Accumulated interest		\$ 6,000	\$ 12,000	\$ 24,000
Loan Balance due at Sale		\$ 26,000	\$ 32,000	\$ 44,000
Owner's Account:				
Downpayment	\$ 2,000			
Loan Principal Reduction		\$ 15,739	\$ 35,441	\$ 90,976
Owner Improvements		\$ 5,000	\$ 10,000	\$ 15,000
Total Owner's Account at Sale		\$ 22,739	\$ 47,441	\$ 107,976
Total of Owner & LHHTF		\$ 48,739	\$ 79,441	\$ 151,976
Property Sale:				
Net Proceeds after 1st dot		\$ 53,364	\$ 107,409	\$ 248,913
LHHTF Share		\$ 28,467 53%	\$ 43,266 40%	\$ 72,065 29%
Owner Share		\$ 24,897 47%	\$ 64,143 60%	\$ 176,848 71%
Total Owner Return		\$ 2,158 9%	\$ 16,702 35%	\$ 68,872 64%
Total LHHTF Return		\$ 2,467 9%	\$ 11,266 35%	\$ 28,065 64%
Downpayment %				
Available for next owner		\$ 28,467 12%	\$ 43,266 16%	\$ 72,065 20%

Lochlyn Hill Housing Trust Fund

GENERAL REQUIREMENTS AND PROGRAM TERMS

Source of Funds	Meadowcreek Development LLC or its successor in interest. Amount shall be no less than \$150,000.
Eligible use of Funds	Down Payment and Closing Cost Assistance. Purchaser must occupy the property as their primary residence. Funds may be used only with a fixed rate, fixed term, and first mortgage product.
Eligible Recipients	Homebuyers with gross household income not exceeding 80% of the Charlottesville area median income limits, as defined by HUD and recognized by VHDA.
Eligible Properties	Properties within the Lochlyn Hill neighborhood with a sales price not to exceed the VHDA First Time Homebuyer Program limits.
Loan Terms	Deferred payment loans funded by the Lochlyn Hill Housing Trust Fund shall accrue simple interest at 6% with all principal and interest due upon sale of the property by the purchaser. Prepayments are allowable. Loans with current interest payable shall carry an interest rate not to exceed the Prime Rate plus 2%. Actual rate to be determined by the program manager based on Purchaser's ability to pay. Current interest loans may be interest only amortizing loans.
Loan Security	Secured deed of trust on the property. Lien position to be determined in each individual case, depending on the other sources of secondary financing used.
Loan-To-Value and CLTV Limits	The total loan-to-value limits for all secured debt shall not exceed 105% of the purchase price, unless otherwise acceptable to the lenders.
Maximum Assistance	10% of the sales price.
Minimum Housing Debt Ratios	Housing Trust Fund loans will be structured to insure that subsidies are appropriate for the Homebuyer's needs. For households with income not exceeding 60% of AMI, the minimum housing debt ratio shall be 21%. For households with gross income above 60% of AMI, the minimum housing debt ratio shall be 24%
Homebuyer Contribution	All homebuyers must contribute at least one percent (1%) of the purchase price. Closing costs shall be considered part of the purchase price for purposes of this requirement.
Security Documents & Subordination	The Lochlyn Hill Housing Trust Fund will hold the notes and deeds of trust. The Fund shall not subordinate its debt to any additional financing after closing, but shall subordinate for the financing of the balance at a lower interest rate.
Ineligible Loan Programs	Adjustable rate and interest only loans are not eligible. Step rate and 5-7 year adjustable rate mortgages may be eligible based on the purchaser's ability to pay and subject to approval by the Trust Fund Director.
Maximum Debt Ratios	32-35% front end ratio. 40-45% back end ratio.
Appreciation Sharing	Upon sale of the property and repayment of all other loans and financial assistance outstanding, together with simple interest, the net proceeds shall be distributed as follows: The Lochlyn Hill Housing Trust Fund balance, including interest, shall be credited toward The Fund's capital account. All initial equity invested by Purchaser, together with all principal payments made on loans and home improvements made by Seller during the time they owned the property, shall be credited toward their capital account. The ratio of the two capital accounts shall determine the ratio of the payout of net proceeds from sale.

Lochlyn Hill Affordable Housing Proffer Summary

Range of Owner Occupied Units to be built in the City:	87-127
Affordable Owner Occupied Units Proffered:	11-14
Percentage Affordable Proffered:	11-12.64%
Min. Units proffered to TJHT, PHA, JABA or HFH	3
Multifamily units planned in the City:	48
Affordable Multifamily Units proffered	6
Percentage Affordable Proffered	12.5%
Optional Cash Proffer	\$42,000
Proffered Range of Accessory Dwelling Units in the City	15-50
Estimated percentage of units w/affordable rental	50%
Proffer qualified percentage	30%
Range of units qualified as affordable under the proffer	4-15
Range of Total Affordable units	21-36
Total percentage Affordable	15-20%
Developer Cost of the current proffer	\$210,000-\$360,000
Developer Cost of modified proffer	\$317,000-\$467,000

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CHAPTER 18

ZONING

SECTION 15

RESIDENTIAL - R-4

Sections:

- 15.1 INTENT, WHERE PERMITTED**
- 15.2 PERMITTED USES**
- 15.2.1 BY RIGHT**
- 15.2.2 BY SPECIAL USE PERMIT**
- 15.3 AREA AND BULK REGULATIONS (Amended 3-18-81)**
- 15.4 BONUS FACTORS (REFERENCE 2.4)**
- 15.4.1 ENVIRONMENTAL STANDARDS**
- 15.4.2 DEVELOPMENT STANDARDS**
- 15.4.3 AFFORDABLE HOUSING**
- 15.5 CLUSTER DEVELOPMENT OPTION REGULATIONS**
- 15.6 BUILDING SEPARATION**
- 15.7 RECREATIONAL AREA REQUIREMENTS**

15.1 INTENT, WHERE PERMITTED

This district (hereafter referred to as R-4) is created to establish a plan implementation zone that:

-Provides for compact, medium-density, single-family development;
(Amended 9-9-92)

-Permits a variety of housing types; and

-Provides incentives for clustering of development and provision of locational, environmental, and development amenities.

R-4 districts may be permitted within community and urban area locations designated on the comprehensive plan. (Amended 9-9-92)

15.2 PERMITTED USES

15.2.1 BY RIGHT

The following uses shall be permitted subject to requirements and limitations of this ordinance:

1. Detached single-family dwellings.
2. Side-by-side duplexes provided that density is maintained, and provided further that buildings are located so that each unit could be provided with a lot meeting all other requirements for detached single-family dwellings except for side yards at the common wall. Other two-family dwellings shall be permitted provided density is maintained.

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3. Semi-detached and attached single-family dwellings such as triplexes, quadruplexes, townhouses, atrium houses and patio houses provided that density is maintained, and provided further that buildings are located so that each unit could be provided with a lot meeting all other requirements for detached single-family dwellings except for side yards at the common wall.
 4. Cluster development of permitted residential uses.
 5. Rental of permitted residential uses and guest cottages, provided that yard, area and other requirements of this ordinance shall be met for each such use whether or not such use is on an individual lay-out.
 6. (Repealed 9-2-81)
 7. (Repealed 9-2-81)
 8. Electric, gas, oil and communication facilities, excluding tower structures and including poles, lines, transformers, pipes, meters and related facilities for distribution of local service and owned and operated by a public utility. Water distribution and sewerage collection lines, pumping stations and appurtenances owned and operated by the Albemarle County Service Authority. Except as otherwise expressly provided, central water supplies and central sewerage systems in conformance with Chapter 16 of the Code of Albemarle and all other applicable law. (Amended 5-12-93)
 9. Accessory uses and buildings including home occupation, Class A (reference 5.2) and storage buildings.
 10. Temporary construction uses (reference 5.1.18).
 11. Public uses and buildings including temporary or mobile facilities such as schools, offices, parks, playgrounds and roads funded, owned or operated by local, state or federal agencies (reference 31.2.5); public water and sewer transmission, main or trunk lines, treatment facilities, pumping stations and the like, owned and/or operated by the Rivanna Water and Sewer Authority (reference 31.2.5; 5.1.12). (Amended 11-1-89)
 12. Tourist lodgings (reference 5.1.17).
 13. Homes for developmentally disabled persons (reference 5.1.07).
 14. Stormwater management facilities shown on an approved final site plan or subdivision plat. (Added 10-9-02)
 15. Tier I and Tier II personal wireless service facilities (reference 5.1.40). (Added 10-13-04)
- (§ 20-15.2.1, 12-10-80; 9-2-81; 11-1-89; 5-12-93; Ord. 02-18(6), 10-9-02; Ord. 04-18(2), 10-13-04)

15.2.2 BY SPECIAL USE PERMIT

The following uses shall be permitted by special use permit in the R-4 district, subject to the applicable requirements of this chapter: (Amended 5-5-10)

1. Community center (reference 5.1.4).
2. Clubs, lodges, civic, fraternal, patriotic (reference 5.1.2).
3. Fire and rescue squad stations (reference 5.1.9).

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4. Swim, golf, tennis, or similar athletic facilities (reference 5.1.16).
5. Private schools.
6. Electrical power substations, transmission lines and related towers; gas or oil transmission lines, pumping stations and appurtenances; unmanned telephone exchange centers; micro-wave and radio-wave transmission and relay towers, substations and appurtenances (reference 5.1.12).
7. Day care, child care or nursery facility (reference 5.1.6).
8. Mobile home subdivisions (reference 5.5).
9. Rest home, nursing home, convalescent home, orphanage or similar institution (reference 5.1.13).
10. Hospitals.
11. Home occupation, Class B (reference 5.2).
12. Churches. (Added 9-2-81)
13. Cemeteries. (Added 9-2-81)
14. Mobile home parks (reference 5.3). (Added 3-5-86)
15. Stand alone parking and parking structures (reference 4.12, 5.1.41) (Added 2-5-03)
16. Tier III personal wireless service facilities (reference 5.1.40). (Added 10-13-04)
17. Historical centers, historical center special events, historical center festivals (reference 5.1.42). (Added 6-8-05)
18. Farmers' markets (reference 5.1.47). (Added 5-5-10)

(§ 20-15.2.2, 12-10-80; 9-2-81; 3-5-86; Ord. 03-18(2), 2-5-03; Ord. 04-18(2), 10-13-04; Ord. 05-18(7), 6-8-05; Ord. 10-18(4), 5-5-10)

15.3 AREA AND BULK REGULATIONS (Amended 3-18-81)

Area and bulk regulations within the R-4, Residential, district are as follows:

REQUIREMENTS	STANDARD LEVEL		BONUS LEVEL	
	CONVENTIONAL DEVELOPMENT	CLUSTER DEVELOPMENT	CONVENTIONAL DEVELOPMENT	CLUSTER DEVELOPMENT
Gross density	4 du/acre	4 du/acre	6 du/acre	6 du/acre
Minimum Lot Size	(added 7-17-85) 10,890 sq ft	N/A	7,260 sq ft.	N/A
Yards, minimum:				
Front	25 feet	25 feet	25 feet	25 feet
Side ^(a)	15 feet	15 feet	15 feet	15 feet
Rear	20 feet	20 feet	20 feet	20 feet
(a) Minimum side yards may be reduced to not less than ten (10) feet in accordance with section 4.11.3, provided that minimum side yards may be reduced to zero (0) feet on one side in zero lot line developments in accordance with section 4.11.3 and are approved under chapter 14. (Amended 1-1-83; 6-11-08)				
Maximum Structure height	35 feet	35 feet	35 feet	35 feet

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(§ 20-15.3, 12-10-80; 1-1-83; 7-17-85; Ord. 08-18(4), 6-11-08)

15.4 BONUS FACTORS (REFERENCE 2.4)

15.4.1 ENVIRONMENTAL STANDARDS

For maintenance of existing wooded areas equal to: ten (10) percent to nineteen (19) percent of the site, a density increase of five (5) percent shall be granted; twenty (20) percent or greater of the site, a density increase of ten (10) percent shall be granted.

In order to qualify for this bonus, a conservation plan as specified in section 32.7.9 shall be required. (Amended 8-14-85; 9-9-92)

15.4.2 DEVELOPMENT STANDARDS

For dedication of land to public use not otherwise required by law, density may be increased as follows:

The acreage of the land dedicated and accepted shall be multiplied by twice the gross density-standard level, and the resulting number of dwellings may be added to the site, provided that the density increase shall not exceed fifteen (15) percent. The dedication shall be accepted by the board of supervisors prior to final approval.

For provision of road improvements to secondary or primary roads not otherwise required by this ordinance or Chapter 14 of the Code of Albemarle, a density increase up to twenty (20) percent shall be granted, to be agreed upon by the commission and the applicant, based upon the relative need for transportation improvements in the area. The need for such improvements shall be established by the Virginia Department of Highways and Transportation. (Amended 8-14- 85)

15.4.3 AFFORDABLE HOUSING

For providing affordable housing units, a density increase of thirty (30) percent shall be granted, subject to the following:

- a. At least one-half of the additional housing units allowed by this density bonus shall be developed as affordable housing units. (Amended 10-3-07)
- b. The initial sale price for sale units or the rental rate for a period of at least ten (10) years for rental units shall qualify as affordable housing under either the Virginia Housing Development Authority, Farmers Home Administration or Housing and Urban Development housing choice voucher program. (Amended 10-3-07)
- c. If rental units, the developer shall enter into an agreement with the County of Albemarle restricting the rental rates of the affordable units for a period of at least ten (10) years or until the units are sold as affordable units, whichever comes first. (Amended 10-3-07)
- d. If sale units, the developer shall provide the chief of housing with confirmation of the initial sale price for the affordable units prior to the issuance of building permits for the bonus units. (Amended 8-14-85; 10-3-07)
- e. Manufactured homes for rent in an approved manufactured home park shall be considered rental units under this section provided they qualify as affordable housing under the Housing and Urban Development housing choice voucher program. (Added 3-5-86; Amended 10-3-07)
- f. Manufactured home lots for rent in an approved manufactured home park shall qualify for this bonus provided the developer enters into an agreement with the County of Albemarle that the lots shall be available for rent to manufactured home owners for a period of at least ten (10) years. (Added 3-5-86; Amended 10-3-07)

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- g. Manufactured home lots for sale in an approved manufactured home subdivision shall qualify for this bonus provided the developer restricts the use of the lots to manufactured homes or other affordable housing for a period of at least ten (10) years. (Added 3-5-86; Amended 10-3-07)
- h. The decision to extend the periods beyond the ten (10) year minimum provided in subsections (b), (c), (f) and (g) shall be in the sole discretion of the developer. (Added 10-3-07)
- i. The occupancy of the affordable units shall be restricted to those households with incomes at or below eighty (80) percent of the area median income for for-sale units and at or below sixty (60) percent of the area median income for rental units. The chief of housing or his designee must approve all purchasers of for-sale units based on household income. Prior to issuance of the first certificate of occupancy for a building providing affordable rental units, the developer shall enter into a rental rate agreement with the county, approved by the county attorney, that delineates the terms and conditions pertaining to rental rates, occupancy and reporting during the minimum ten (10) year period. (Added 10-3-07)

(§ 15.4.3, 12-10-80; 8-14-85; 3-5-86; Ord. 07-18(2), 10-3-07)

15.4.4 The cumulative effect of density factors above may not exceed fifty (50) percent (Amended 8-14-85)

15.5 CLUSTER DEVELOPMENT OPTION REGULATIONS

At the option of the owner, regulations under cluster development provisions in section 15.3 may be used for cluster development of the land to be subdivided and developed. Use of cluster provisions shall be subject to other requirements of this ordinance, applicable health requirements and the provisions of Chapter 14 of the Code of Albemarle. (Amended 8-14-85)

15.6 BUILDING SEPARATION

In any case in which there is more than one main structure on any parcel, there shall be a minimum of thirty (30) feet between such structures except as otherwise provided in section 4.11.3. This provision shall not apply to structures built to a common wall. (Added 1-1-83) (Amended 8-14-85)

15.7 RECREATIONAL AREA REQUIREMENTS

See section 4.16 for recreation requirements. (Amended 3-5-86)



COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
CHARLOTTESVILLE RESIDENCY OFFICE
701 VDOT WAY
CHARLOTTESVILLE, VA 22911

GREGORY A. WHIRLEY
COMMISSIONER OF HIGHWAYS

June 11, 2012

Ms. Jeanette Janiczek
UCI Program Manager
City of Charlottesville
Neighborhood Development Services

Subject: Lochlyn Hill Chapter 527 TIA

Dear Ms. Janiczek,

In accordance with §15.2-2222.1 of the Code of Virginia and the Virginia Traffic Impact Analysis Regulations, 24 VAC 30-155, a traffic impact analysis was prepared by Engineering and Planning Resources, P.C. on the site plan for the proposed development project entitled Lochlyn Hill by Meadowcreek Development LLC.

We have evaluated this traffic impact analysis and prepared a report that summarizes the errors or omissions, summary of data and recommendations of the analysis. Some revisions will be necessary to complete the Traffic Impact Study and some recommendations may change due to the revisions. Our report is attached to assist the city in their decision making process regarding the proposed development.

I am available at your convenience to meet and discuss VDOT's finding if you need assistance. And finally, I ask that you include VDOT's key findings of the traffic analysis in the official public records on the proposed project and have this letter, our report, and the traffic impact analysis placed in the case file for this site plan. VDOT will make these documents available to the general public through various methods including posting them on VDOT's website.

Sincerely,

A handwritten signature in blue ink, appearing to read "Joel DeNunzio".

Joel DeNunzio
Area Land Use Engineer

Cc: Mr. Bill Wuensch, P.E., PTOE

WE KEEP VIRGINIA MOVING

Key Findings for Traffic Impact Analysis entitled Lochlyn Hill, Charlottesville VA
City of Charlottesville, VA
Prepared by Engineering and Planning Resources, P.C. for Meadowcreek Development, LLC

Below are VDOT's key findings for the TIA on the above project:

Errors and Omissions:

- The report presents the existing AM and PM peak hour turning movements but does not include the daily volume counts as required in the Traffic Impact Analysis Regulations, 24VAC 30-155 section C.2.c.
- This report includes analyses performed with Synchro and Simtraffic and the summary table provides queue lengths and delay from Simtraffic. The report does not indicate if the Simtraffic outputs are a result from an average of multiple runs. A minimum of ten runs should be performed for each Simtraffic evaluation while each run contains a 15 minute seed interval and 60 minute run duration. Please include the referenced reports for delay and queue in the appendix.
- Page 11, table 1 of the report shows the total daily trips incorrectly as 448 for the other development and it should be 1228. Also, this number does not include any existing traffic that currently uses the Stonehenge entrance that would use this entrance to make left turns onto Rio Road due to better sight distance.
- Page 11 of the report states that 80% of the other developments traffic will make a right turn at the entrance opposite of Pen Park Lane. This should be 50%. The Treesdale development has a separate right in and out entrance where their right turns will occur and they generate 50% of the other developments traffic.
- Table 4A contains the following errors:
 - The 2021 no-build PM section of the EBL delay should be 192.6 seconds.
 - All the values for the 2021 build scenario are different than the Synchro Report.
 - The 2027 no-build reports were not included in the appendix.
 - Some of the queues listed do not include the '#' reference as they are shown in the reports.
 - The '#' and 'm' notes should be added to the table as they are in the reports.
- This study discusses the signal warrants but did not include a full warrants analysis in the study. This should be included as part of study.

Summary of Data:

- The study shows that the traffic exiting Pen Park Lane during the morning peak period will experience extreme delays of 3 to 5 minutes or more per vehicle and traffic queuing that will extend through the Woodmont connection and off of the study network. This is unacceptable and will create a situation where drivers will become overly aggressive in exiting Pen Park Lane and may lead to an increase in accidents.
- All the warrants do not need to be met for a signal to be recommended to address safety issues. Part of the reason for the interconnection of the developments on the west side of Rio Road is to connect them to a location that was to be signalized. The Treesdale development is for older residents that need a safer location to enter Rio Road and this was to be that location. These are some of the factors to consider in the signal warrants analysis.

Study Recommendation:

- Signalization of the Rio Road – Pen Park Lane intersection and the installation of a Right Turn Lane on Pen Park Lane should be a requirement of the Development.
- If ROW is not fully available the developer could proffer the improvement and cost of the ROW and work with the city and county to purchase the ROW for the improvements.
- Another way to address some of the impacts is to phase the development based on an improvement implementation schedule. We don't want to create a situation without solution.





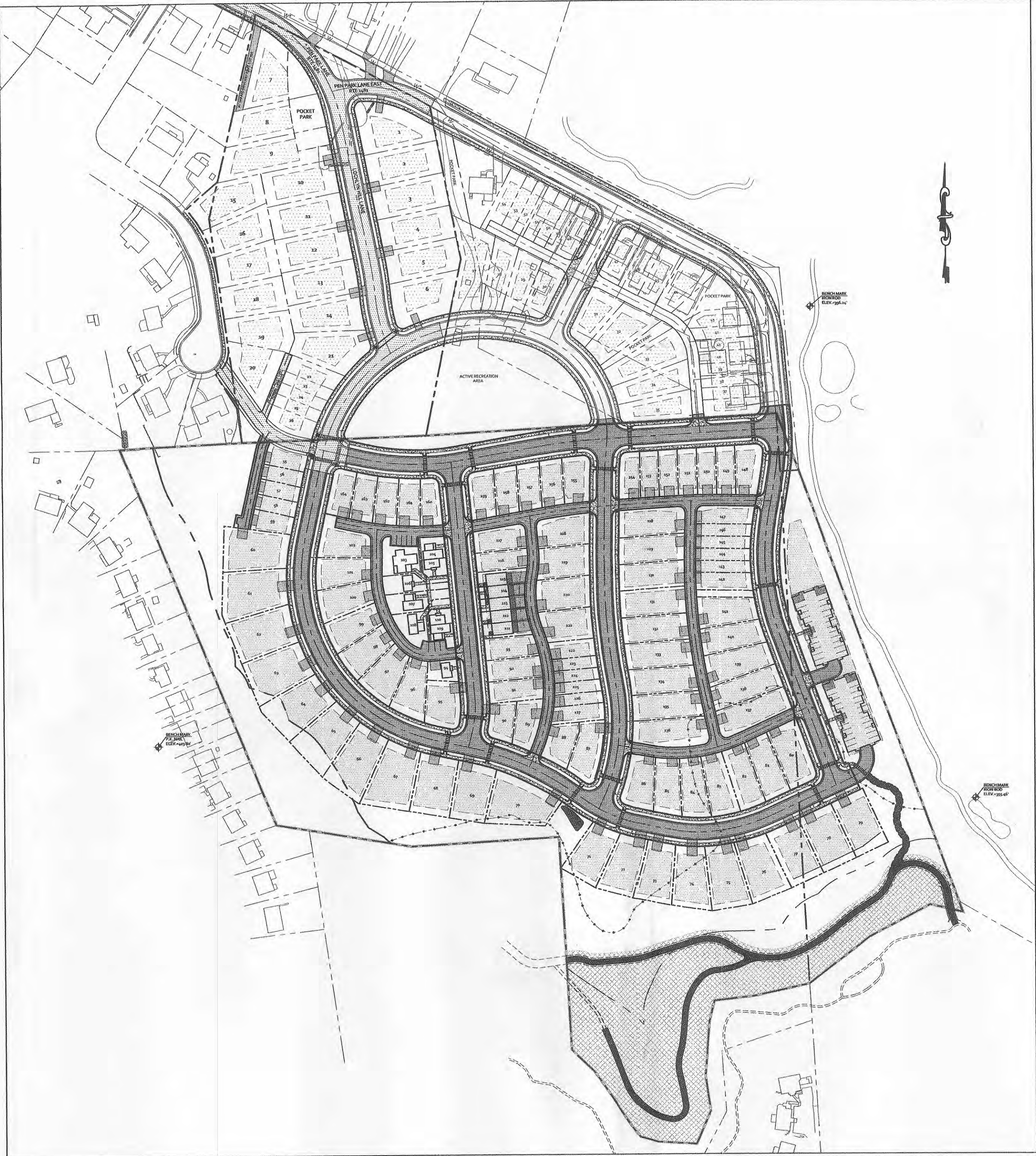
PROJECT DATA:

OWNER:	MEADOWCREEK DEVELOPMENT, LLC 230 CHESTNUT OAK LN CHARLOTTESVILLE, VA 22903-9610																																					
ENGINEER:	COLLINS ENGINEERING 200 GARRETT STREET, SUITE K CHARLOTTESVILLE, VA 22902 434.293.3719																																					
DEVELOPER:	MILESTONE PARTNERS 300 2ND STREET NE CHARLOTTESVILLE, VA 22902																																					
TAX MAP PARCELS:	TMP 48A039000 TMP 48A040000	D.B. 773, Pg. 503 D.B. 773, Pg. 503	22.29 ACRES 3.31 ACRES																																			
	TOTAL ACREAGE: 25.6 ACRES																																					
ZONING:	PUD - APPROVED																																					
LOCATION/ACCESS OF PROJECT:	LOCATED AT THE END OF PEN PARK LANE ADJACENT TO MEADOWCREEK GOLF COURSE.																																					
USE:	RESIDENTIAL DWELLING UNITS TOTAL: SINGLE FAMILY DETACHED UNITS, TOWNHOMES, APARTMENTS, AND ATTACHED COTTAGE UNITS PER TABLE A OF THE APPROVED PUD.																																					
DENSITY:	PER ZONING DOCUMENTS: 135 UNITS TO 175 UNITES ALLOWED (4.7 TO 5.9 DU/ACRE) PROPOSED: 158 UNITS NOTE: THE ACCESSORY DWELLING UNITS ARE NOT PROVIDED FOR IN THE PRIMARY DWELLING UNIT COUNTS. THEY ARE ADDITIVE PER THE PUD CODE OF DEVELOPMENT.																																					
	<table><tr><th colspan="6">RESIDENTIAL DENSITY</th></tr><tr><th rowspan="2"></th><th colspan="3">PRIMARY DWELLING UNITS</th><th colspan="2">ACCESSORY DWELLING UNIT</th></tr><tr><th>MINIMUM</th><th>SHOWN ON DEVELOPMENT PLAN</th><th>MAXIMUM</th><th>MINIMUM</th><th>MAXIMUM</th></tr><tr><td>City of Charlottesville</td><td>135</td><td>148</td><td>175</td><td>15</td><td>50</td></tr><tr><td>County of Albemarle</td><td>40</td><td>56</td><td>60</td><td>-</td><td>-</td></tr><tr><td>TOTAL</td><td>175</td><td>204</td><td>235</td><td>15</td><td>50</td></tr></table>			RESIDENTIAL DENSITY							PRIMARY DWELLING UNITS			ACCESSORY DWELLING UNIT		MINIMUM	SHOWN ON DEVELOPMENT PLAN	MAXIMUM	MINIMUM	MAXIMUM	City of Charlottesville	135	148	175	15	50	County of Albemarle	40	56	60	-	-	TOTAL	175	204	235	15	50
RESIDENTIAL DENSITY																																						
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County of Albemarle	40	56	60	-	-																																	
TOTAL	175	204	235	15	50																																	
OPEN SPACE:	9.85 AC (38.5%) OPEN SPACE PROVIDED																																					
SETBACKS:	<table><tr><th colspan="5">LOT REGULATIONS</th></tr><tr><th rowspan="2">UNIT TYPE</th><th rowspan="2">LOT WIDTH</th><th rowspan="2">FRONT SETBACK</th><th colspan="2">MINIMUM SETBACKS</th></tr><tr><th>SIDE</th><th>REAR</th></tr><tr><td>Single Family</td><td>61-80</td><td>15-30 ft.</td><td>5</td><td>10</td></tr><tr><td>Single Family</td><td>25-60</td><td>10-30 ft.</td><td>3</td><td>10</td></tr><tr><td>Townhouse</td><td>16-35</td><td>5-25 ft.</td><td>3</td><td>10</td></tr><tr><td>Multi-Family</td><td>n/a</td><td>5-25 ft.</td><td>4</td><td>15</td></tr></table>			LOT REGULATIONS					UNIT TYPE	LOT WIDTH	FRONT SETBACK	MINIMUM SETBACKS		SIDE	REAR	Single Family	61-80	15-30 ft.	5	10	Single Family	25-60	10-30 ft.	3	10	Townhouse	16-35	5-25 ft.	3	10	Multi-Family	n/a	5-25 ft.	4	15			
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Multi-Family	n/a	5-25 ft.	4	15																																		
BUILDING HEIGHT:	35 FEET MAXIMUM																																					
TOTAL ACREAGE:	25.6 AC. (PHASE II & III)																																					
STREETS:	CURB AND GUTTER, PUBLIC STREETS. ROAD GRADES ARE CONSISTENT WITH THE APPROVED PUD GRADING PLAN AND STREET GRADES SHALL NOT EXCEED 10%.																																					
EXISTING CONDITIONS:	SITE IS PARTIALLY CLEARED WITH TWO EXISTING HOUSES & OTHER STRUCTURES. THE REMAINING PORTIONS OF THE SITE ARE CURRENTLY WOODED.																																					
UTILITIES:	SITE WILL BE SERVED BY CITY PUBLIC WATER AND SEWER																																					
PHASING:	THE OVERALL LOCHLYN HILL PROJECT WILL BE DEVELOPED IN FOUR PHASES. THIS IS THE SECOND AND THIRD OF FOUR PHASES. TWO PHASES LOCATED IN ALBEMARLE COUNTY & TWO PHASES ARE LOCATED IN THE CITY OF CHARLOTTESVILLE. THERE MAY ALSO BE DEVELOPMENT IN SUB-PHASES BY BLOCKS WITHIN THE PROPOSED PHASES BASED ON DEVELOPMENT AND MARKET CONDITIONS.																																					
FLOODPLAIN:	FLOODPLAIN FLOODWAY AREAS EXIST ON THE SUBJECT PROPERTY, PER FEMA MAP #51003C0287D, PANEL 287D. NO DEVELOPMENT OF PLACEMENT OF FILL IS PROPOSED WITHIN THE FLOODWAY. THIS PROJECT DOES PROPOSE THE FILLING OF A PORTION OF THE FLOODPLAIN IN ACCORDANCE WITH SECTION 34.251 OF THE ZONING ORDINANCE. ALL BASEMENTS AND LOWEST FLOORS SHALL BE AT LEAST (1) FOOT HIGHER THAN THE BASE FLOOD ELEVATION.																																					
STREAM BUFFERS:	STREAM BUFFERS EXIST WITHIN THE LIMITS OF THE PROJECT AREA.																																					
LOT COVERAGE:	SINGLE FAMILY UNITS = 75%, TOWNHOUSE UNITS = 90%, MULTI-FAMILY UNITS = 90%																																					
MAXIMUM HEIGHT:	35' ALLOWABLE HEIGHT. IF THE HEIGHT OF THE STRUCTURES EXCEED 35', ADDITIONAL SETBACKS MAY BE REQUIRED.																																					
SOURCE OF INFORMATION:	THE BOUNDARY OF THE SITE WAS PROVIDED BY KIRK HUGHES & ASSOCIATES. AERIAL TOPO WAS PROVIDED BY VIRGINIA RESOURCE MAPPING, MARCH, 2013. FIELD VERIFIED IN JUNE, 2013.																																					
DATUM:	NAD83																																					
RIGHT-OF-WAY:	5.52 ACRES (21.56% OF CURRENT PHASE AREA)																																					
LOTS:	11.11 ACRES (43.40% OF CURRENT PHASE AREA)																																					
CRITICAL SLOPES:	NO CRITICAL SLOPES ON THE SUBJECT PROPERTY SHALL BE IMPACTED WITH THIS DEVELOPMENT.																																					
PARKING:	EACH LOT WILL HAVE TWO OFF-STREET PARKING SPACES. PARKING WILL ALSO BE PROVIDED ON ONE SIDE OF THE PUBLIC ROADS, WHICH WILL BE MARKED WITH SIGNS IN THE DEVELOPMENT.																																					
LIGHTING:	NO STREET LIGHTING IS PROPOSED. EXTERIOR LIGHTING SHALL BE REQUIRED ON THE FRONT OF THE PROPOSED HOUSES. THE SETBACKS OF THE HOMES WILL BE CLOSE ENOUGH TO THE SIDEWALK THE SUFFICIENT LIGHT SPILL WILL ILLUMINATE THE SIDEWALKS.																																					
LANDSCAPING:	LANDSCAPING AND FINAL LANDSCAPING CALCULATIONS WILL BE PROVIDED WITH THE FINAL SITE PLAN. FINAL DESIGN OF THE PROJECT PARKS AND OPEN SPACE SHALL ALSO BE PROVIDED WITH THE FINAL SITE PLAN. FINAL LANDSCAPING DESIGN SHALL CONFORM WITH THE APPROVED PUD DOCUMENTS FOR THE NUMBER OF TREES AND SHRUBS PER LOT. IN ADDITION, THE FINAL SITE PLAN SHALL INCLUDE A LANDSCAPING PLAN FOR THE POCKET PARKS.																																					
RETAINING WALLS:	RETAINING WALLS ARE SHOWN ON THE LAYOUT AND GRADING PLAN AND WILL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE APPROVED PUD.																																					
SIGNAGE:	NO SIGNAGE IS CURRENTLY PROPOSED. ANY SIGNAGE WILL BE INCLUDED WITH THE FINAL SITE PLAN OR UNDER SEPARATE APPLICATION.																																					
WATERSHED:	MEADOW CREEK																																					
STORMWATER MANAGEMENT:	A STORMWATER MANAGEMENT FACILITY IS PROPOSED WITHIN THE DEVELOPMENT TO HANDLE WATER QUALITY AND DETENTION. SEE SHEET 3 FOR FURTHER INFORMATION.																																					
STREET TREES:	STREET TREES SHALL BE PROVIDED ALONG ALL PUBLIC ROADS IN ACCORDANCE WITH CITY REQUIREMENTS AND THE APPROVED PUD.																																					
TRASH COLLECTION:	TRASH RECEPTACLES SHALL BE MAINTAINED ON EACH INDIVIDUAL LOT.																																					
IMPERVIOUS AREAS:	<table><tr><td>ROADS</td><td>3.02 AC.</td></tr><tr><td>SIDEWALKS</td><td>0.97 AC.</td></tr><tr><td>LOTS</td><td>11.81 AC.</td></tr><tr><td>TOTAL</td><td>15.80 AC.</td></tr></table>			ROADS	3.02 AC.	SIDEWALKS	0.97 AC.	LOTS	11.81 AC.	TOTAL	15.80 AC.																											
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SIDEWALKS	0.97 AC.																																					
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TOTAL	15.80 AC.																																					
TRAFFIC GENERATION:	SEE SHEET 7.																																					
FIRE PLAN:	THE DEVELOPMENT SHALL PROVIDE FIRE HYDRANTS IN ACCORDANCE WITH CITY REGULATIONS TO PROTECT THE DEVELOPMENT (EVERY 500'-600' MAX.)																																					
LIMITS OF DISTURBANCE:	20.74 AC.																																					

LOCHLYN HILL - PHASE II & III

PRELIMINARY PLAN

CITY OF CHARLOTTESVILLE, VIRGINIA

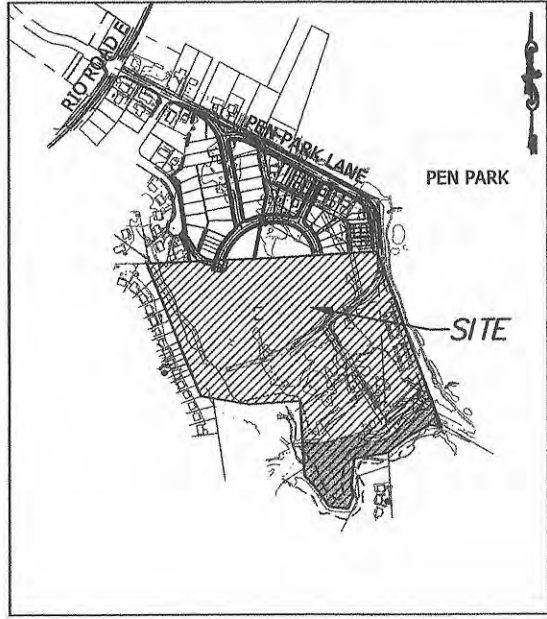


ACREAGES (PHASES II & III)	
ROADS	3.02 AC
SIDEWALKS	0.97 AC
LOTS	9.66 AC
TOWNHOUSE	1.56 AC
MULTI-FAMILY	0.59 AC
OPEN SPACE	9.80 AC

OPEN SPACE	
TOTAL SITE	38 Acres
Total Open Space	9.71 Acres (25.5%)
COUNTY AREA	12.14 Acres
County Open Space	2.65 Acres (21.8%)
CITY AREA	25.86 Acres
City Open Space	7.06 Acres (27.3%)

SHEET LAYOUT

SCALE: 1" = 150'



VICINITY MAP

SCALE: 1" = 1000'

ROADS

- EXISTING CULVERT
- CULVERT
- DROP INLET & STRUCTURE NO.
- CURB
- CURB & GUTTER
- PROPOSED PAVEMENT
- EC-3A DITCH
- DEPTH OF EC-3A DITCH
- EC-2 DITCH
- DEPTH OF EC-2 DITCH

LEGEND

- EARTH DITCH
- DRIVEWAY CULVERT
- BENCH MARK
- CLEARING LIMITS
- VDOT STANDARD STOP SIGN
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- TBC DENOTES TOP/BACK OF CURB
- T/B DENOTES TOP OF BOX

PRELIMINARY SUBDIVISION PLAT

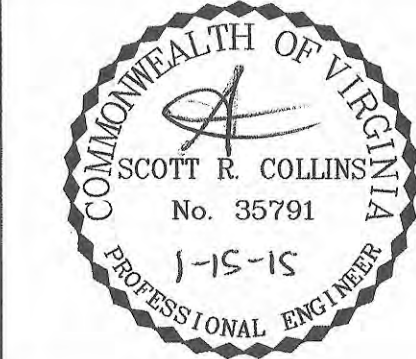
TITLE	SHEET
COVER SHEET	1
EXISTING CONDITIONS & DEMOLITION PLAN	2
OVERALL PLAN	3
LAYOUT PLAN	4
UTILITY PLAN	5
GRADING PLAN	6
NOTES & DETAILS	7
NOTES & DETAILS	8
NOTES & DETAILS	9
LANDSCAPING PLAN	10
LANDSCAPING NOTES & DETAILS	11
STORMWATER MANAGEMENT PLAN	12
STORMWATER MANAGEMENT NOTES & DETAILS	13
TOTAL SHEETS	13

NOTES:

- ALL SIGNAGE AND PAVEMENT MARKINGS SHALL BE CONSISTENT WITH THE MUTCD.
- IFC 505-THE BUILDING STREET NUMBER TO BE PLAINLY VISIBLE FROM THE STREET FOR EMERGENCY RESPONDERS.
- FIRE HYDRANTS, FIRE PUMP TEST HEADER, FIRE DEPARTMENT CONNECTIONS OR FIRE SUPPRESSION SYSTEM CONTROL VALVES SHALL REMAIN CLEAR AND UNOBSTRUCTED BY LANDSCAPING, PARKING OR OTHER OBJECTS. THE FIRE MARSHAL'S OFFICE NO LONGER ALLOWS ANY TYPE OF LANDSCAPING TO BE PLACED IN FRONT OF AND WITHIN 5 FEET OF FIRE HYDRANTS, FIRE PUMP TEST HEADERS, FIRE DEPARTMENT CONNECTIONS OR FIRE SUPPRESSION SYSTEM CONTROL VALVES. AN APPROVED WATER SUPPLY FOR FIRE PROTECTION SHALL BE MADE AVAILABLE AS SOON AS COMBUSTIBLE MATERIAL ARRIVES ON THE SITE.
- ALL PAVEMENT SHALL BE CAPABLE OF SUPPORTING FIRE APPARATUS WEIGHTING 85,000 LBS. REQUIRED VEHICLE ACCESS FOR FIRE FIGHTING SHALL BE PROVIDED TO ALL CONSTRUCTION OR DEMOLITION SITES. VEHICLE ACCESS SHALL BE PROVIDED TO WITHIN 100 FEET OF TEMPORARY OR PERMANENT FIRE DEPARTMENT CONNECTIONS. VEHICLE ACCESS SHALL BE PROVIDED BY EITHER TEMPORARY OR PERMANENT ROADS, CAPABLE OF SUPPORTING VEHICLE LOADING UNDER ALL WEATHER CONDITIONS. VEHICLE ACCESS SHALL BE MAINTAINED UNTIL PERMANENT FIRE APPARATUS ACCESS ROADS ARE AVAILABLE.
- OVERHEAD WIRING OR OTHER OBSTRUCTIONS SHALL BE HIGHER THAN 13 FEET 6 INCHES.
- ALL SIGNS SHALL BE IN ACCORDANCE WITH ARTICLE IX, SECTION 34-1020 CITY CODE.
- REQUIRED VEHICLE ACCESS FOR FIRE FIGHTING SHALL BE PROVIDED TO ALL CONSTRUCTION OR DEMOLITION SITES. VEHICLE ACCESS SHALL BE PROVIDED TO WITHIN 100 FEET OF TEMPORARY OR PERMANENT FIRE DEPARTMENT CONNECTIONS. VEHICLE ACCESS SHALL BE PROVIDED BY EITHER TEMPORARY OR PERMANENT ROADS, CAPABLE OF SUPPORTING VEHICLE LOADING UNDER ALL WEATHER CONDITIONS. VEHICLE ACCESS SHALL BE MAINTAINED UNTIL PERMANENT FIRE APPARATUS ACCESS ROADS ARE AVAILABLE.
- THE PROPOSED WALLS ARE CONCEPTUAL IN NATURE AND INTENDED TO SHOW THE APPROXIMATE HEIGHT AND LOCATION OF THESE WALLS ONLY. FINAL WALL DESIGN SHALL BE COMPLETED BY A STRUCTURAL ENGINEER AND SUBMITTED WITH THE FINAL BUILDING PERMITS.

ADDITIONAL NOTES:

- CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS, IF THERE APPEARS TO BE A CONFLICT, AND UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THE PLANS.
- CITY OF CHARLOTTESVILLE GIS DATA WAS NOT USED IN THE PREPARATIONS OF THESE PLANS. THE CONTRACTOR SHALL LOCATE ALL SURFACE AND SUB-SURFACE UTILITIES PRIOR TO ANY WORK ONSITE.
- ANY SIDEWALK AND/OR CURB DAMAGE IDENTIFIED IN THE SITE VICINITY DUE TO PROJECT CONSTRUCTION ACTIVITIES AS DETERMINED BY THE CITY INSPECTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- ALL SIGNING AND PAVEMENT MARKINGS SHALL BE CONSISTENT WITH THE MUTCD.
- A TEMPORARY STREET CLOSURE PERMIT IS REQUIRED FOR CLOSURE OF SIDEWALKS, PARKING SPACES AND ROADWAYS AND IS SUBJECT TO APPROVAL BY THE CITY TRAFFIC ENGINEER.
- SITE AND BUILDING CONSTRUCTION SHALL MEET 2006 IBC SECTION 3409 FOR ACCESSIBILITY AND VA USBC 103.3 FOR CHANGE OF OCCUPANCY.



REVISIONS

REVISION DESCRIPTION	DATE
INITIAL SUBMITTAL	5/28/14
REVISED PER CITY OF CHARLOTTESVILLE & RWIS COMMENTS	11/21/14
REVISED PER CITY OF CHARLOTTESVILLE COMMENTS	1/15/14

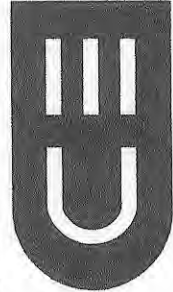
COLLINS ENGINEERING

200 GARRETT STREET SUITE K - CHARLOTTESVILLE, VA 22902 - 434.293.3719

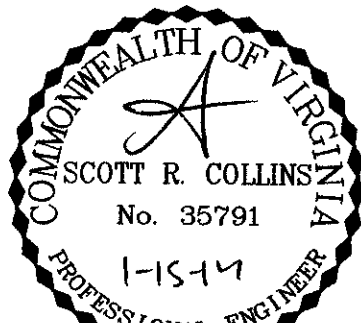
LOCHLYN HILL PHASE II & III PRELIMINARY PLAN

COVER SHEET

PROJECT	JOB NO.
	112062
SCALE	AS NOTED
SHEET	SHEET NO.
	1



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REVISIONS	
REVISION DESCRIPTION	
INITIAL SUBMITTAL	
REVISED PER CITY OF CHARLOTTESVILLE & RWSA COMMENTS	
REVISED PER CITY OF CHARLOTTESVILLE COMMENTS	
5/28/14	
11/21/14	
1/15/14	

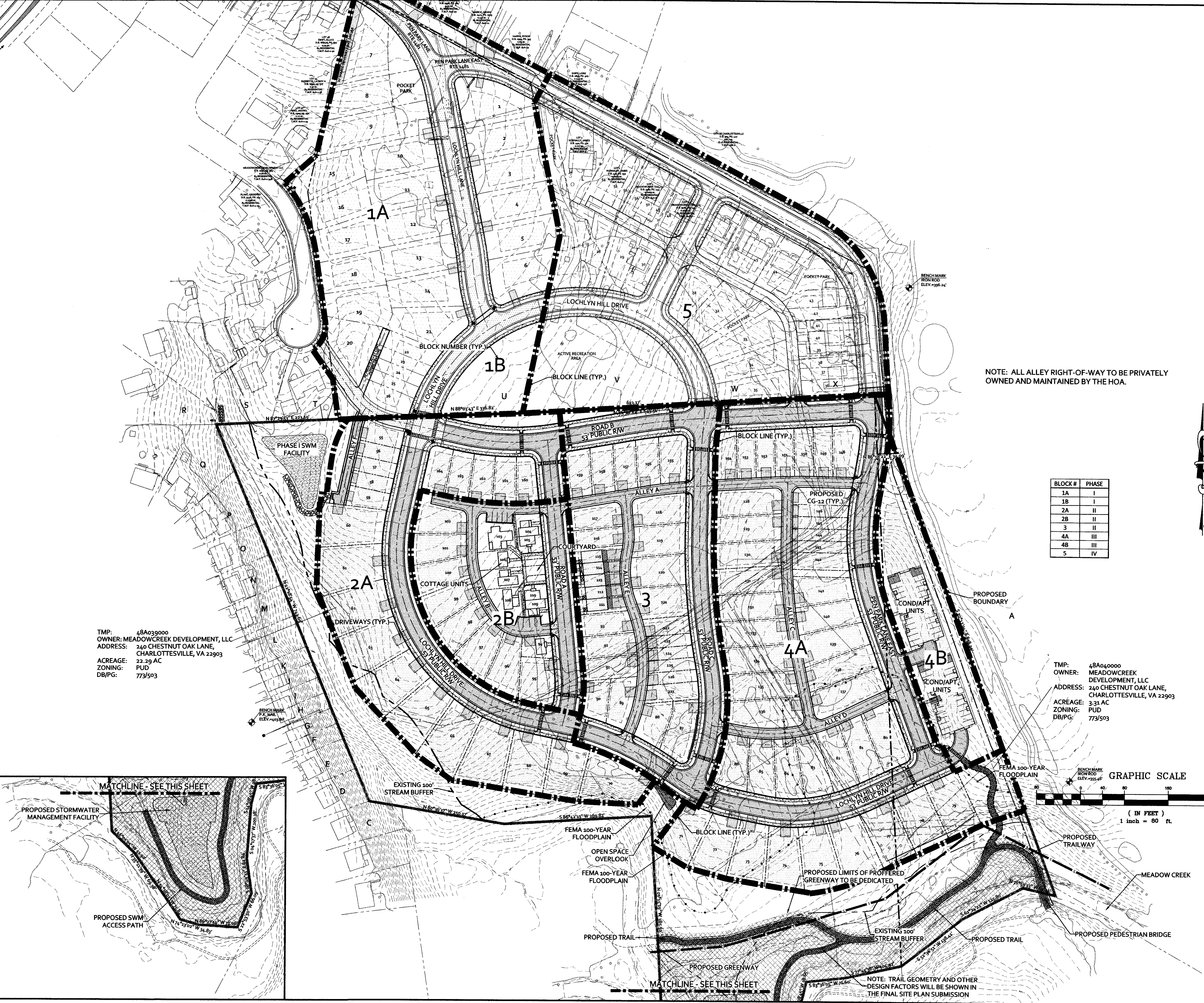
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LOCHLYN HILL PHASE II & III PRELIMINARY PLAN

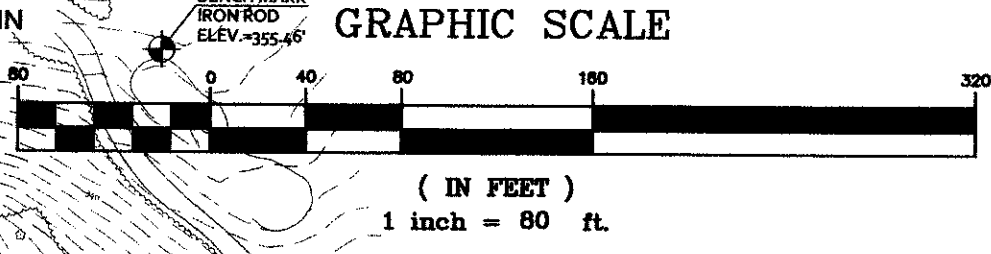
OVERALL PLAN

PROJECT	JOB NO.
	112062
SCALE	1"=80'
SHEET NO.	3

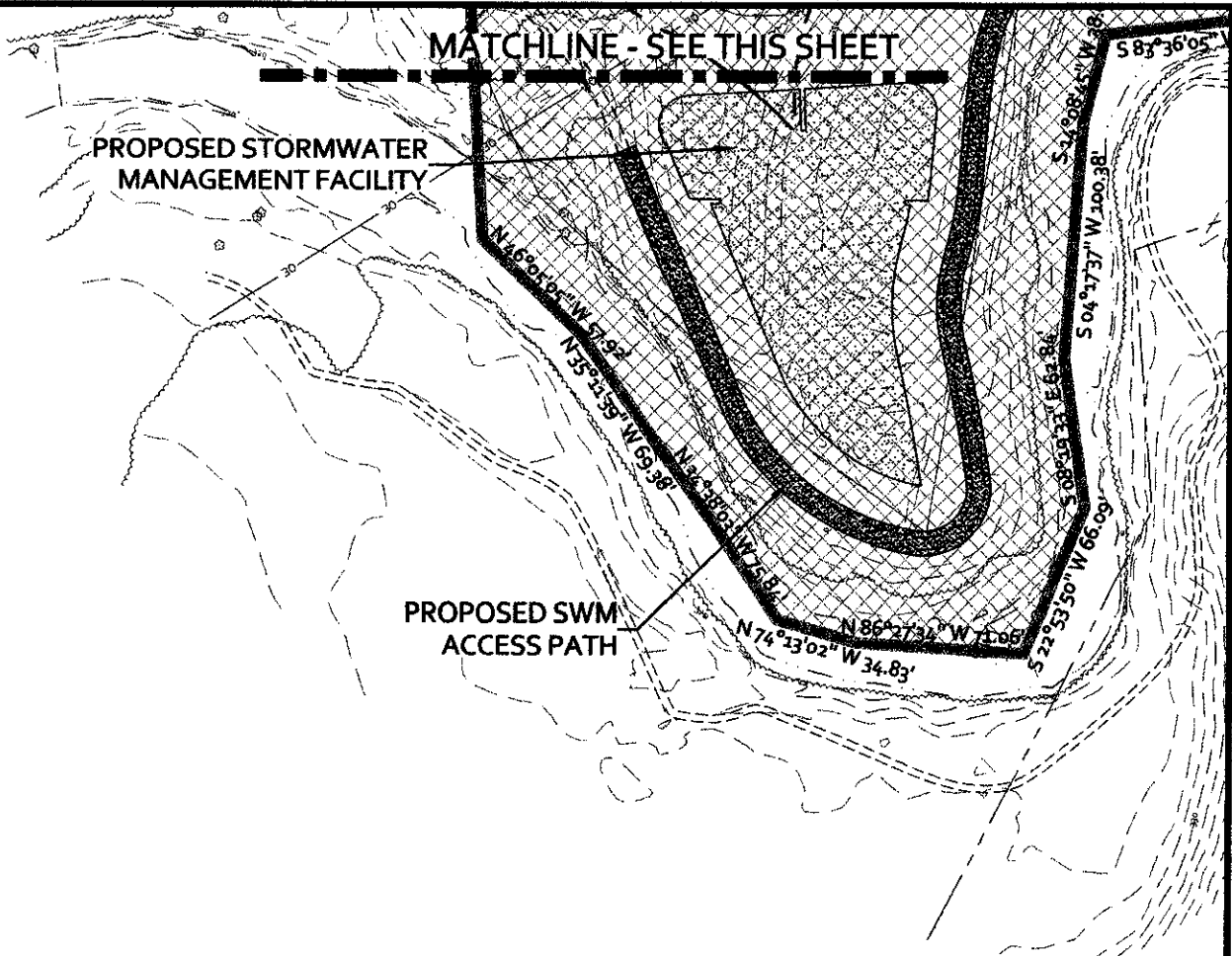


BLOCK #	PHASE
1A	I
1B	I
2A	II
2B	II
3	II
4A	III
4B	III
5	IV

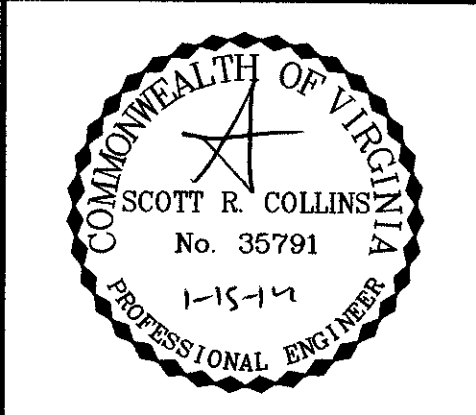
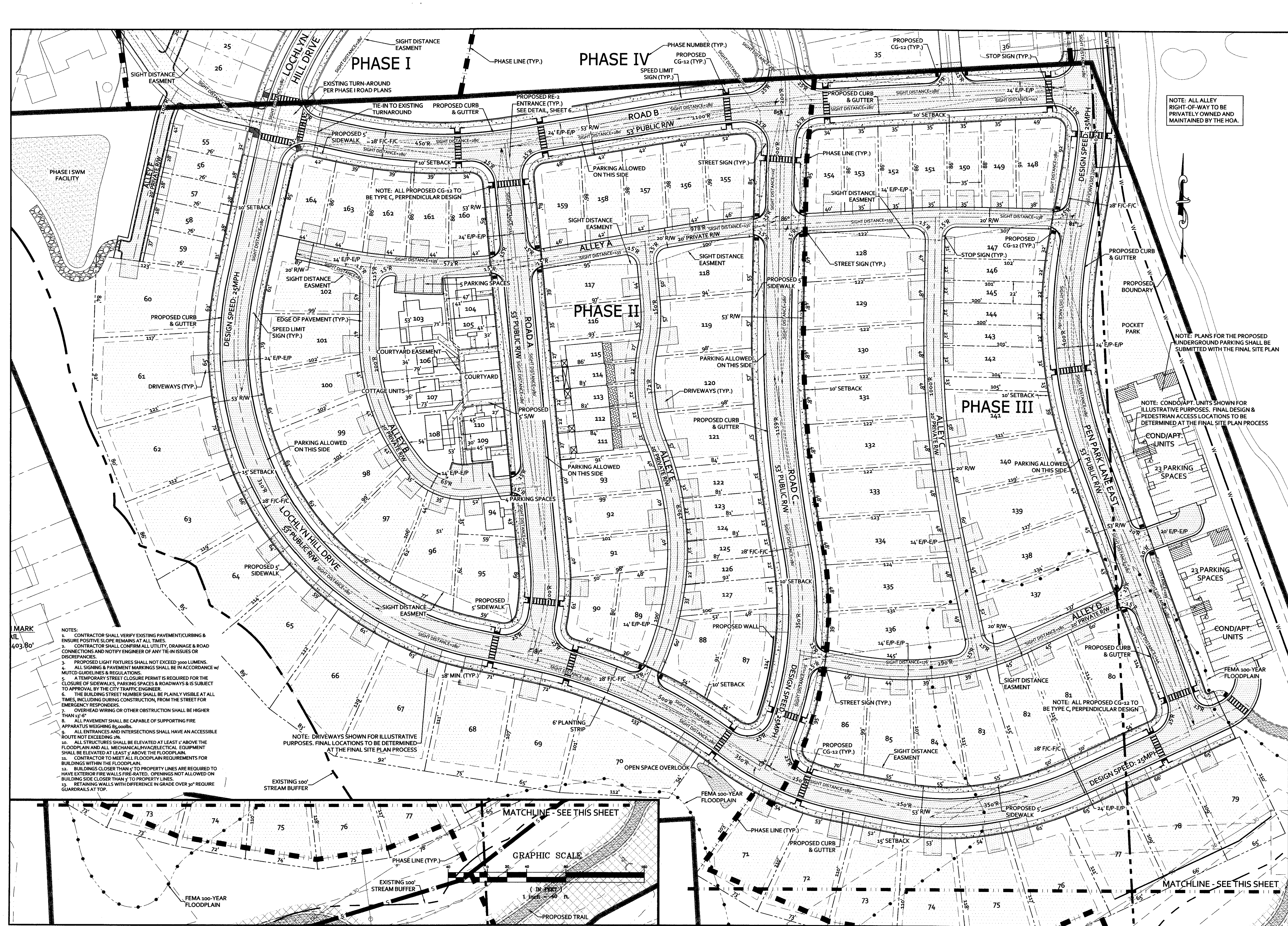
TMP: 48A040000
OWNER: MEADOWCREEK DEVELOPMENT, LLC
ADDRESS: 240 CHESTNUT OAK LANE, CHARLOTTESVILLE, VA 22903
ACREAGE: 3.31 AC
ZONING: PUD
DB/PG: 773/503




TMP: 48A039000
OWNER: MEADOWCREEK DEVELOPMENT, LLC
ADDRESS: 240 CHESTNUT OAK LANE, CHARLOTTESVILLE, VA 22903
ACREAGE: 22.29 AC
ZONING: PUD
DB/PG: 773/503



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REVISED PER CITY OF CHARLOTTESVILLE COMMENTS	
5/28/14	
11/21/14	
1/15/14	

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LOCHLYN HILL PHASE II & III PRELIMINARY PLAN

LAYOUT

PROJECT	JOB NO.
	112062
	SCALE
	1"=40'
	SHEET NO.
	4

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