



# County of Fairfax, Virginia

*To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County*

September 15, 2010

Sarah E. Hall  
Blankingship and Keith PC  
4020 University Drive, Suite 300  
Fairfax, VA 22030

RE: Rezoning Application RZ 2009-MV-023

Dear Ms. Hall:

Enclosed you will find a copy of an Ordinance adopted by the Board of Supervisors at a regular meeting held on September 14, 2010, granting Rezoning Application RZ 2009-MV-023 in the name of INOVA Health Care Services. The Board's action rezones certain property in the Mount Vernon District from the C-3 to PDC District and permits commercial development with an overall Floor Area Ratio (FAR) of 0.40. The subject property is located in the southeast quadrant of the intersection of Lorton Road and Sanger Street and west of I-95 on approximately 14.55 acres of land [Tax Map 107-4 ((1)) 75A, 77-82], and is subject to the proffers dated July 20, 2010.

Please note that on July 22, 2010, the Planning Commission approved Final Development Plan Application FDP 2009-MV-023, subject to the development conditions dated July 13, 2010.

**The Board also:**

- Approved a variance of the requirement that secondary uses in a PDC District not exceed 25 percent of the gross floor area of the principal uses, to allow for a greater proportion of the medical care facility use on this site.
- Modified the transitional screening requirement and waiver of the barrier requirements along the southern and western property lines, in favor of that shown on the CDP/FDP.
- Modified the number of loading spaces required by the Zoning Ordinance.

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**Office of the Clerk to the Board of Supervisors**

12000 Government Center Parkway, Suite 533

Fairfax, Virginia 22035

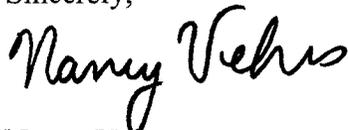
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- Modified the peripheral parking lot landscaping requirement and off-street parking setback requirement along the northern property line.

Sincerely,



Nancy Vehrs  
Clerk to the Board of Supervisors  
NV/ph  
Enclosure

Cc: Chairman Sharon Bulova  
Supervisor Gerry Hyland, Mount Vernon District  
Janet Coldsmith, Director, Real Estate Division, Dept. of Tax Administration  
Regina Coyle, Director, Zoning Evaluation Division, DPZ  
Diane Johnson-Quinn, Deputy Zoning Administrator, Dept. of Planning and Zoning  
Thomas Conry, Dept. Manager. – GIS - Mapping/Overlay  
Angela K. Rodeheaver, Section Chief, Transportation. Planning Division  
Ken Williams, Plans & Document Control, ESRD, DPWES  
Department of Highways-VDOT  
Sandy Stallman, Park Planning Branch Manager, FCPA  
Charlene Fuhrman-Schulz, Development Officer, DHCD/Design Development Division  
District Planning Commissioner  
Denise James, Office of Capital Facilities/Fairfax County Public Schools  
Karyn Moreland, Chief Capital Projects Sections, Dept. of Transportation

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held in the Board Auditorium in the Government Center at Fairfax, Virginia, on the 14th day of September, 2010, the following ordinance was adopted:

**AN ORDINANCE AMENDING THE ZONING ORDINANCE  
PROPOSAL NUMBER RZ 2009-MV-023**

**WHEREAS**, INOVA Health Care Services, filed in the proper form an application requesting the zoning of a certain parcel of land herein after described, from the C-3 District, and

**WHEREAS**, at a duly called public hearing the Planning Commission considered the application and the propriety of amending the Zoning Ordinance in accordance therewith, and thereafter did submit to this Board its recommendation, and

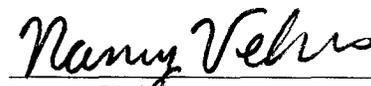
**WHEREAS**, this Board has today held a duly called public hearing and after due consideration of the reports, recommendation, testimony and facts pertinent to the proposed amendment, the Board is of the opinion that the Ordinance should be amended,

**NOW, THEREFORE, BE IT ORDAINED**, that that certain parcel of land situated in the Mount Vernon District, and more particularly described as follows (see attached legal description):

Be, and hereby is, zoned to the PDC District, and said property is subject to the use regulations of said PDC District, and further restricted by the conditions proffered and accepted pursuant to Va. Code Ann., 15.2-2303(a), which conditions are in addition to the Zoning Ordinance regulations applicable to said parcel, and

**BE IT FURTHER ENACTED**, that the boundaries of the Zoning Map heretofore adopted as a part of the Zoning Ordinance be, and they hereby are, amended in accordance with this enactment, and that said zoning map shall annotate and incorporate by reference the additional conditions governing said parcel.

GIVEN under my hand this 14th day of September, 2010.

  
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Nancy Velts  
Clerk to the Board of Supervisors



## PROFFERS

RZ 2009-MV-023  
Inova Health Care Services

July 20, 2010

Pursuant to Section 15.2-2303A of the Code of Virginia, 1950 as amended, and Section 18-204 of the Zoning Ordinance of the County of Fairfax (1978 as amended), the undersigned applicant and owner Inova Health Care Services ("Applicant"), for itself and its successors and assigns, agrees to the following proffers provided the Board of Supervisors approves RZ 2009-MV-023 ("the Application") for the rezoning of Tax Map 107-4 ((1)) 75A, 77, 78, 79, 80, 81, and 82 ("the Property") to the PDC District and Conceptual/Final Development Plan 2009-MV-023 dated October 20, 2009, and last revised as of June 30, 2010 ("CDP/FDP"). In the event the Application is approved, these proffers shall supersede and replace any previous proffers applicable to any portion of the Property.

1. Conceptual/Final Development Plan. Subject to the provisions of Section 16-403 of the Fairfax County Zoning Ordinance ("the Zoning Ordinance"), the development of the Property as a multiphase healthplex/medical office mixed use development shall be in substantial conformance with the CDP/FDP. The CDP/FDP consists of ten (10) sheets. The development may be phased as indicated on Sheet 3 of the CDP/FDP and described in Proffer 4 below.

2. Minor Modifications. Pursuant to Paragraph 4 of Section 16-403.4 of the Zoning Ordinance, minor modifications to the CDP/FDP may be permitted as determined by the Zoning Administrator. At the time of site plan approval, Applicant shall have the flexibility to modify the layout shown for the improvements proposed by this Application on the CDP/FDP without requiring approval of an amended CDP/FDP provided that such changes are in substantial conformance with the CDP/FDP as determined by the Zoning Administrator in accordance with the standards set out in Paragraph 4 of Section 16-403 of the Zoning Ordinance.

3. Design Detail. The design details shown on Sheets 2, 3, and 4 of the CDP/FDP are provided to illustrate the design theme of the proposed development. Landscaping and onsite amenities shall be generally consistent in terms of character and quantity with those represented in the CDP/FDP. Specific features such as locations of plantings and sidewalks are subject to minor modification with final engineering and architectural design.

4. Phasing. The development on the Property shall not exceed 252,600 gross square feet ("GSF"). As illustrated on Sheet 3 of the CDP/FDP, the development may be constructed in phases. Phase 1 shall be the two story portion of Building B (approximately 51,000 GSF) that will include the healthplex. All of the parking for Phase 1 shall be surface parking. Phase 2 shall be either (i) the five-story portion of

Building B (approximately 126,600 GSF) and the parking structure, or (ii) Building A (approximately 75,000 GSF), which shall have both surface and below ground parking. The landscaping which will be installed with each phase is illustrated on Sheet 3 of the CDP/FDP.

4.A. Principal and Secondary Uses. All principal and secondary uses referenced below shall be deemed to be “specifically designated on the FDP” such that approval of a separate special exception shall not be required to initiate such a use in the interior of either Building A or Building B pursuant to Section 6-205 of the Zoning Ordinance. There shall be no drive-through use in either Building A or Building B.

The primary principal use of Building A shall be office or hotel. A primary secondary use may be a medical care facility which would not exceed 35,000 square feet. The following uses may be located on the first floor of Building A (14,250 square feet) but only in conjunction with an office or hotel use:

Other Principal Uses:

- Eating establishment
- Business service and supply service establishment
- Retail sales establishment
- Personal service establishment

Other Secondary Uses:

- Fast food restaurant
- Quick service food store
- Child care center

The primary principal use of Building B shall be office to accommodate predominantly medical professionals. The primary secondary use shall be a medical care facility which shall be located in the two (2) story, 51,000 square foot portion of Building B and possibly on the first and second stories (25,000 square feet each) of the five (5) story portion of Building B. The following uses may be located only on the first floor (25,000 square feet) of the five (5) story portion of Building B:

Other Principal Uses:

- Eating establishment
- Business service and supply service establishment
- Retail sales establishment
- Personal service establishment

Other Secondary Uses:

- Fast food restaurant

- Quick service food store
- Child care center

Other principal and secondary uses permitted in the PDC District that are not specifically listed in this Proffer 4.A may be permitted with the approval of a PCA and/or a special exception or special permit as required. A PCA shall not be required as long as the proposal remains in substantial conformance with the CDP.

5. Retaining Walls. The permanent retaining walls and the ranges of their respective heights are shown on Sheet 2 of the CDP/FDP. The permanent retaining walls will be faced with one of the finishes shown on Sheet 4 of the CDP/FDP. Two temporary retaining walls will be constructed as part of Phase 1. The locations and the maximum heights of the temporary retaining walls are shown on that portion of Sheet 3 of the CDP/FDP which illustrates Phase 1. Each will be constructed of H-piles and lagging, painted to blend in with its environment. The eastern temporary retaining wall will remain visible only until the parking structure for the five-story portion of Building B is constructed, and the western temporary retaining wall will remain only until the remainder of the on-site entrance road is constructed.

6. Limits of Clearing and Grading. Applicant shall strictly conform to the limits of clearing and grading shown on the CDP/FDP subject to the installation of utility lines, if necessary, as approved by the Department of Public Works and Environmental Services (“DPWES”). The utility lines located within areas protected by the limits of clearing and grading shall be located and installed in the least disruptive manner possible, as determined by Urban Forestry Management (“UFM”). As provided in Proffer 24.H, a reforestation plan shall be developed and implemented, as approved by the UFM, for any areas within the areas protected by the limits of clearing and grading that must be disturbed.

7. Stormwater Management. The stormwater management facilities generally as shown on the CDP/FDP, and possibly other Stormwater Management (“SWM”) and Best Management Practices (“BMP’s”) features, shall provide SWM and BMP’s in accordance with the applicable provisions of the Public Facilities Manual and Chapter 118 of the Code of the County of Fairfax, the Chesapeake Bay Preservation Ordinance. All stormwater management facilities shall be provided in substantial conformance with those shown on the CDP/FDP.

8. Telecommunication Equipment. Flush-mounted or appropriately screened telecommunication equipment may be placed on the Property, including placement on the buildings or the parking structure, without the need for a proffered condition amendment. In the event any telecommunications facility/equipment is proposed to be placed on the Property, an application for the proposed facility/equipment, including related antennas and equipment cabinets, shall be submitted to Fairfax County for review by appropriate County agencies and a determination pursuant to Section 15.2-2232 of the Code of Virginia as to whether the proposed facility/equipment is in substantial accord with the Comprehensive Plan.

8.A. Smart Building. Applicant shall design Building A and Building B (the “Buildings”) to include conduits to provide for the installation of information and communications technology that can operate throughout the Buildings and that can connect to remote locations and networks in order to allow Applicant, at its discretion, to equip the Buildings to provide for applications such as electronic medical records, security protocols, patient communication and virtual medical consultations. Applicant shall demonstrate compliance with the design requirements of this Proffer prior to building permit approval for Building A and each part of Building B. This proffer shall not require Applicant to equip the Buildings with any particular application.

9. Siltation and Erosion Control. In order to minimize siltation and erosion impacts downstream of the Property, Applicant agrees to the following measures:

A. Prior to and for the duration of any land disturbing activity, install silt fencing in location(s) as approved by DPWES.

B. Monitor and maintain the erosion controls and the SWM facilities during the course of construction to ensure their proper function.

10. Transportation Improvements. Subject to final engineering and Virginia Department of Transportation (“VDOT”) approval, Applicant shall construct the road improvements as generally shown on Sheets 5 and 6 of the CDP/FDP. As noted below, some of these road improvements will be phased as illustrated on the CDP/FDP in order to be appropriately coordinated with the improvements to be made by Fairfax County to Lorton Road between Silverbrook Road and Route 123 (County Project No. 4YP213) (the “County Project”).

A. In Phase 1 of its development, Applicant shall:

(i) construct the improvements to Sanger Street as shown on Sheets 5 and 6 of the CDP/FDP;

(ii) construct the northernmost entrance to the Property and that portion of the on-site entrance road shown on Sheet 3 of the CDP/FDP;

(iii) widen westbound Lorton Road east of Silverbrook Road to accommodate dual left turn lanes onto Sanger Street from westbound Lorton Road as shown on Sheets 5 and 6 of the CDP/FDP, with appropriate channelization and through lane shifts as approved by VDOT. Initially the lanes of westbound Lorton Road will be striped as illustrated on the inset on Sheet 5 of the CDP/FDP so that only one left turn lane onto Sanger Street will be available for use. When westbound Lorton Road east of Silverbrook Road has been widened and this initial striping is in place, this item (iii) shall be deemed substantially complete. At such later time as the County Project in this area has been substantially completed or at such earlier time as VDOT in consultation with FCDOT may determine, Applicant shall restripe the westbound lanes for Lorton Road

east of Silverbrook Road to provide the dual left turn lanes and shall make the necessary signal modifications for the dual left turn configuration, subject to VDOT approval;

(iv) construct in the northwest quadrant of the Silverbrook Road/Lorton Road intersection the curb return illustrated on the inset on Sheet 5 of the CDP/FDP. As illustrated, there will initially be striping at the curb return, which striping shall be removed as part of the County Project. This improvement shall be included in and bonded as a part of the public improvement plan for the Phase 1 road improvements ("PI Plan"); however, the construction of this improvement shall not occur until Fairfax County has had the impacted utilities moved at no cost to Applicant. This improvement need not be completed prior to the issuance of any Non-Residential Use Permit ("Non-RUP") for any use in Phase 1;

(v) modify the median in Silverbrook Road to increase the length of the southbound left turn lane and restripe the southbound lanes of Silverbrook Road generally as illustrated on Sheet 5 of the CDP/FDP;

(vi) modify or replace the existing traffic signal at the Lorton Road/Silverbrook Road/Sanger Street intersection as may be deemed necessary by VDOT to accommodate the ultimate roadway improvements generally shown on Sheet 5 of the CDP/FDP and the County Project. Any such signal replacement or modification shall include pedestrian countdown features. In the event the PI Plan and Applicant's signal plans have not been approved before construction of the County Project commences, Applicant at the time of the PI Plan approval shall reimburse the County up to \$250,000 for the County's design and installation of the signal modification/replacement consistent with the ultimate roadway improvements. In the event the PI Plan and Applicant's signal plans have been approved and bonded but Applicant has not commenced its roadway improvements at such time as the construction of the County Project commences, Applicant upon written request from the County shall provide its signal plans to the County and contribute to the County up to \$225,000 for the County's installation of the signal modification/replacement consistent with the ultimate roadway improvements; and

(vii) at the time of PI Plan approval, escrow with Fairfax County \$25,000 for (a) the County's redesign, as part of the County Project, of the median and the north side of Lorton Road west of Silverbrook Road in response to Applicant's alignment of Lorton Road east of Silverbrook Road, and (b) the cost of the additional asphalt pavement on the north side of Lorton Road and the rebuilding of the median in Lorton Road which the redesign will necessitate.

Applicant shall not commence any on-site Phase 1 construction until such time as a PI Plan for the road improvements listed in (i) through (vi) above has been approved and all VDOT waivers and design exceptions necessary for those road improvements have been granted. Applicant recognizes that, in the event it becomes necessary to revise materially the road improvements as shown on Sheets 5 and 6 of the CDP/FDP in order to get a PI Plan approved and all necessary VDOT waivers and design exceptions for the

road improvements granted, Applicant may not proceed with development of the Property unless either (i) the Zoning Administrator determines that the revised road improvements are consistent with these Proffers, or (ii) Applicant obtains an appropriate Proffered Condition Amendment (“PCA”).

The construction of the improvements listed above except item (iv) shall be substantially completed prior to the issuance of the first Non-RUP in Phase 1 unless the Department of Planning and Zoning (“DPZ”) in consultation with FCDOT and VDOT shall otherwise permit. For purposes of this proffer, “substantially complete” shall be defined as constructed and available for use by the public but not necessarily accepted by VDOT for maintenance.

B. Unless DPZ in consultation with FCDOT and VDOT shall otherwise permit, Applicant must substantially complete the following improvements prior to the issuance of the first Non-RUP for Phase 2 (exclusive of core and shell):

(i) restripe the westbound lanes of Lorton Road east of Silverbrook Road to provide the dual left turn lanes and make the necessary signal modifications for the dual left turn lane configuration, subject to final VDOT approval; and

(ii) construct a right turn lane onto Sanger Street from eastbound Lorton Road, subject to VDOT approval. In the event Applicant is unable to obtain the necessary property interests required to construct the right turn lane and related improvements, Applicant shall proceed as follows:

(a) Applicant shall request the County to acquire the property interests by means of its condemnation powers, at the Applicant’s expense. Applicant’s request will not be considered until it has been forwarded, in writing, to the appropriate County agency accompanied by: (1) plans and profiles showing the necessary right-of-way or easements to be acquired, including all associated details of the proposed transportation improvements to be located on said property; (2) an independent appraisal of the value of the property interests to be acquired and of all damages and benefits to the residue of the affected property; (3) a sixty (60) year title search certificate of the property interests to be acquired; and (4) a Letter of Credit, or cash (at Applicant’s discretion) in an amount equal to the appraised value of the property interests to be acquired and all damages to the residue, which Letter of Credit or cash can be drawn upon by the County.

(b) In the event a property owner of a property interest to be acquired is awarded more than the appraised value of same and of the damages to the residue in a condemnation suit, the amount of the award in excess of the Letter of Credit or cash posted amount shall be paid to the County by Applicant within fifteen (15) days of said award. All costs incurred by the County in acquiring the necessary property interests shall be paid to the County by Applicant on demand.

(c) Applicant recognizes that, in the event property interests from other parties are required in order for Applicant to construct a right turn lane approved by VDOT and the County denies Applicant's request that the interests be condemned, Applicant may not proceed with the construction of Phase 2 unless either (i) the Zoning Administration determines that a VDOT-approved alternative is consistent with the Proffers, or (ii) Applicant obtains an appropriate PCA.

11. Dedication for Interchange. At the time of site plan approval for Building A, as shown on the CDP/FDP, or upon written demand by VDOT or Fairfax County, whichever occurs first, Applicant shall dedicate at no cost and without reservation of density credit in fee simple to the Board of Supervisors for public street purposes the area shown on the CDP/FDP for the I-95/Lorton Road interchange improvements to be constructed by others.

12. Bus Shelters. As part of Phase 1 Applicant shall provide a bus shelter along the frontage of the Property on the south side of Lorton Road, east of Sanger Street. The exact location shall be determined in consultation with and approved by FCDOT and VDOT prior to the first site plan approval. The bus shelter shall be the typical open type, and the installation shall be limited to the concrete pad, the shelter itself, an all weather walking surface between the trail and the shelter, and a trash can. As part of Phase 1, as illustrated on Sheet 3 of the CDP/FDP, Applicant shall also construct a five foot wide asphalt trail which connects to the trail along Lorton Road and leads to the healthplex for complete pedestrian access to the bus shelter on Lorton Road. When Building A is constructed, the asphalt trail will be replaced with a five foot wide sidewalk along the entrance drive, as shown on Sheet 3 on the CDP/FDP. At its option, Applicant may also provide a bus shelter in the interior of the Property. The exact location of that shelter would be determined in consultation with FCDOT. Once installed, each bus shelter and trash can shall be maintained by Applicant, its successors and assigns.

13. Transportation Demand Management ("TDM").

A. After Phase 1 - - the two (2) story healthplex portion of Building B - - has been completed, Applicant shall display public transportation information in areas of the healthplex where such information is likely to be seen by the employees and users of the healthplex, including the general public.

B. Within nine (9) months of the issuance of the building permit for Phase 2 - - either Building A or the five (5) story portion of Building B - - Applicant in consultation with FCDOT shall establish a TDM Plan. The purpose of the TDM Plan shall be to achieve a minimum 15% level of peak hour trips generated by employees of uses on the Property as non single occupancy vehicle ("SOV") trips, e.g. mass transit, walking, ride-sharing, carpooling, biking or other non-SOV means. The TDM Plan may include provisions for the following:

(i) Distribution of fare media or other incentives to employees;

(ii) The use of employee benefit options including parking cash out, pre-tax/payroll subsidy for transit and vanpool fares, flex-time and alternative work schedule programs and live-near-work incentives;

(iii) Vanpool and carpool formation programs, including ridematching services, and coordination with established guaranteed ride home programs;

(iv) Display of information material in areas where such information is likely to be seen by the various users of the facilities, including the general public;

(v) Preferential designated parking for vanpool and carpool vehicles and Zip Cars.

C. Within nine (9) months of the issuance of the building permit for Phase 2, Applicant shall also designate an employee transportation coordinator (the "TC"). The TC shall oversee and coordinate the TDM Plan and act as the liaison between Applicant and FCDOT. The TC's duties may be part of other duties carried out by the designated individual. Applicant shall notify FCDOT whenever the designated individual changes.

D. (i) The TC shall monitor the initiatives described above and other strategies that may be implemented. Success of the Plan will be based on achieving at least 15% non-SOV peak hour employee trips. Beginning in the first October following the issuance of the first Non-RUP (exclusive of core and shell) in Phase 2 and in each October thereafter, the TC shall conduct surveys of the employees at the Property to demonstrate whether the 15% goal has been met during the peak hours. The TC shall prepare an annual report, in coordination with FCDOT, which shall include the results of the survey and assess the success of the TDM strategies in reaching the stated goal. If the annual report finds that the stated goal is not being met, Applicant shall coordinate with FCDOT to make adjustments to the TDM Plan, which may include the stipulation to expend a minimum of \$2,500 but not more than \$25,000, as determined by FCDOT and agreed upon by Applicant, to reach the stated goal. This process shall continue until the annual report finds that the stated goal has been met.

(ii) An evaluation shall be made and credit given toward TDM compliance for any health care services being provided via remote technology such that vehicle trips are being reduced to the Property. If and when health care services delivery through information technology is developed, Applicant, in coordination with FCDOT, shall develop a system for identifying and recording instances where health care service delivery through information technology results in the elimination of a vehicle trip to the Property. Each such identified "virtual trip" shall be credited toward the achievement of the 15% non-SOV peak hour employee trips goal.

(iii) Once an annual report finds that the stated 15% goal has been met, Applicant shall not be required to prepare another report for three (3) years. If

that report indicates that the stated goal continues to be met, then Applicant shall only be required to submit a report at three (3) year intervals thereafter. If it is demonstrated in two (2) consecutive tri-annual reports that Applicant is meeting the TDM goal of 15%, the TDM Plan will be assumed to be successfully integrated into the development on the Property, and no further survey will be required. After such time, however, if FCDOT has reason to believe there are problems with the TDM Plan, Applicant shall, in cooperation with FCDOT, review and reasonably address the concerns.

14. Architecture and Materials. The architecture of the buildings on all four facades shall generally conform to the elevations presented on Sheet 3 of the CDP/FDP. Building architecture shall be well-articulated, particularly with regard to the Lorton Road side of Building A, and incorporate a series of vertical elements to break any long horizontal walls. The façade treatment of buildings shall include a combination of building materials which may include metal panels, glass, brick and/or precast concrete. Other materials, which may include (but not necessarily be limited to) stone, metal, and exterior insulation finish system, may be used to provide architectural detail and fenestration to the building façade. An architectural surface treatment that is complementary to the theme of the associated building architecture shall be used on all exposed parking garage walls. For example, a mix of stone aggregate, special forming or scoring, a special mix of textures or polymer painted materials, brick, landscape screening materials, pre-cast concrete, architectural embellishment, and/or other treatments that are compatible with and complement the building architectural material shall be provided.

15. Low Impact Development Features and LEED Certification.

A. Each of the above ground levels on the southwest side of the parking structure shall be stepped back and shall incorporate planters as shown on Sheet 2 of the CDP/FDP.

B. (i) Applicant will include as part of each site plan submission and building plan submission, a list of specific credits within the most current version of the U.S. Green Building Council's Leadership in Energy and Environmental Design—New Construction (LEED®-NC) rating system, or other LEED rating system determined to be applicable to the building by Applicant in consultation with the U.S. Green Building Council ("USGBC"), that Applicant anticipates attaining. At least one participant of Applicant's project team shall be a LEED Accredited Professional, and such professional will provide certification statements at both the time of site plan review and the time of building plan review confirming that the items on the list are expected to meet at least the minimum number of credits necessary to attain LEED certification for the building.

(ii) In addition, prior to each site plan approval, Applicant will designate the Chief of the Environment and Development Review Branch of the Department of Planning and Zoning ("DPZ") as a team member in the USGBC's LEED Online system. This team member will have privileges to review the project status and monitor the progress of all documents submitted by the project team, but will not be

assigned responsibility for any LEED credits and will not be provided with the authority to modify any documentation or paperwork.

(iii) Prior to building plan approval for each building, Applicant will submit documentation to the Environment and Development Review Branch of DPZ, regarding the U.S. Green Building Council's preliminary review of design-oriented credits in the LEED program. This documentation will demonstrate that the building is anticipated to attain a sufficient number of design-related credits that, along with the anticipated construction-related credits, will be sufficient to attain LEED certification. Prior to release of the bond for the building, Applicant shall provide documentation to the Environment and Development Review Branch of DPZ demonstrating the status of attainment of LEED Certification from the U.S. Green Building Council for the building.

(iv) As an alternative to and in lieu of the requirements of subparagraphs i - iii above, or if the U.S. Green Building Council review of design-oriented credits indicates that a building is not anticipated to attain a sufficient number of design-related credits, along with the anticipated construction-related credits, to support attainment of LEED certification, Applicant will, prior to building permit approval for the building, execute a separate agreement and post a "green building escrow," in the form of cash or a letter of credit from a financial institute acceptable to DPWES as defined in the Public Facilities Manual, in the amount of \$2.00 per gross square foot of the building. This escrow will be in addition to and separate from other bond requirements and will be released upon demonstration of attainment of certification, by the U.S. Green Building Council, under the most current version of the LEED-NC rating system or other LEED rating system determined, by the U.S. Green Building Council, to be applicable to the building. The provision to the Environment and Development Review Branch of DPZ of documentation from the U.S. Green Building Council that the building has attained LEED certification will be sufficient to satisfy this commitment. If Applicant fails to provide documentation to the Environment and Development Review Branch of DPZ demonstrating attainment of LEED certification within two years (or such longer time if Applicant provides documentation to the satisfaction of the Environment and Development Review Branch of DPZ that USGBC review of the LEED certification has been delayed through no fault of Applicant) of issuance of the first Non-RUP, exclusive of core and shell, for the building, the escrow will be released to Fairfax County and will be posted to a fund within the county budget supporting implementation of county environmental initiatives.

16. Parking Lighting. The lights in the parking structure shall be located in the ceilings to prevent glare. There shall be a wall or planter at least forty-two (42) inches high on each above ground level on the southwest side of the parking structure to block light from headlights. Surface parking lot lighting will be designed and located in accordance with the standards set out in Part 9 of Article 14 of the Zoning Ordinance. All exterior pole-mounted lighting fixtures on site shall be fully shielded and shall not exceed a height of fifteen (15) feet measured from the finished grade (not the top of the concrete base on which the pole is mounted) to the topmost portion of the fixture.

17. Interior Noise Levels.

A. In order to achieve an interior noise level of 50 dBA Ldn, the two (2) story healthplex portion of Building B, the five (5) story portion of Building B, and, except as provided below, Building A shall have the following acoustical attributes:

(i) Exterior walls have a laboratory Sound Transmission Class (STC) rating of at least 29.

(ii) Doors and windows known to have a laboratory STC rating of at least 28. If windows function as walls (as determined by DPWES) they shall have the same laboratory STC rating as walls.

(iii) Measures to seal and caulk between surfaces shall follow methods approved by the American Society for Testing and Materials to minimize sound transmission.

B. If Building A is a hotel, in order to achieve an interior noise level of 45 dBA Ldn, it shall have the following acoustical attributes:

(i) Exterior walls have a laboratory STC rating of at least 39.

(ii) Doors and windows known to have a laboratory STC rating of at least 28. If windows function as walls (as determined by DPWES) they shall have the same laboratory STC rating as walls.

(iii) Measures to seal and caulk between surfaces shall follow methods approved by the American Society for Testing and Materials to minimize sound transmission.

As an alternative, Applicant may have a refined acoustical analysis performed, subject to approval of DPZ and DPWES, to determine if each building will have sufficient shielding from vegetation and topography to permit a reduction in the mitigation measures prescribed above.

18. On-Site Construction Staging and Parking. As a first stage of clearing and grading in Phase 1, a construction staging/parking area will be provided on the Property. Construction related vehicles will neither stage nor park on Sanger Street, Legion Drive, Fourth Place, or Springwood Meadow Court although construction workers may park their vehicles on Sanger Street south of Springwood Meadow Court. Construction materials shall be neither unloaded nor stored on Sanger Street, Legion Drive, Fourth Place, or Springwood Meadow. But for the construction of proffered improvements to Sanger Street and Lorton Road, which will occur as a part of the Phase 1 construction process, Sanger Street shall not be obstructed north of Springwood Meadow Court during construction, and construction workers shall not loiter on public streets after work. There shall be only one construction entrance into the Property during each construction phase

of the development. During the Phase 1 construction process, the construction entrance shall be across from Legion Drive. Applicant shall include the language of this proffer in the contract with its General Contractor and shall require that the General Contractor include it in all contracts or agreements with its subcontractors and suppliers.

19. Noise and Vibrations. All construction shall be in compliance with the provisions set forth in Section 108-4-1(b) of the Fairfax County Code as to the hours within which construction equipment may operate outdoors. All construction activities, including activities such as dynamic soil compaction and driving of piles, shall comply with the Earthborn Vibration Standards set out in Part 8 of Article 14 of the Zoning Ordinance.

20. Trash Dumpsters. All proposed trash dumpsters will be screened by a combination of fencing, brick walls, a gate and/or evergreen plantings as may be approved by UFM.

21. Charity Policy. The Emergency Department of the healthplex will operate in accordance with the Inova Charity Care Policy, as it may be amended.

22. Helipad Exclusion. The development of the Property shall not include a helipad.

23. Geotechnical Review. Prior to the first site plan approval for a building on the Property, Applicant shall submit a geotechnical report to DPWES for review and approval and shall implement the recommendations outlined in the report as approved by DPWES.

24. Landscaping and Tree Preservation.

A. Applicant shall submit with each site plan a detailed landscape plan consistent with the CDP/FDP for review and approval by UFM. The landscape plan submitted with the first site plan shall include the landscaping along Sanger Street shown on Sheet 2 of the CDP/FDP and evergreen shrubs at the top of the retaining walls adjoining the Tree Save areas. The landscape plan may require different types of trees than those indicated on the CDP/FDP.

B. Tree Preservation Plan. Applicant shall submit a Tree Preservation Plan ("the Plan") as part of the first and all subsequent site plan submissions. The Plan shall be prepared by a professional with experience in the preparation of tree preservation plans, such as a certified arborist or landscape architect, and shall be subject to the review and approval of UFM. The Plan shall consist of a tree survey that includes the location, species, size, crown spread and condition rating percentage of all trees ten inches (10") in diameter and greater within twenty-five feet (25') on either side of the limits of clearing and grading depicted on the CDP/FDP, provided that such tree survey shall be limited to trees located on the Property and not within the areas to be dedicated for public street purposes. The Plan shall provide for the preservation of trees in the Tree Save Areas and

those additional areas in which trees can be preserved as a result of final engineering. The condition analysis ratings shall be prepared using methods outlined in the latest edition of the *Guide for Plant Appraisal* published by the International Society of Arboriculture. Specific tree preservation activities that will maximize the survivability of any tree located on the Property identified to be preserved, such as crown pruning, root pruning, mulching, fertilization, and others as necessary, shall be included in the Plan.

C. Protection of Existing Understory Vegetation and Soil Conditions in Tree Save Areas. All tree preservation-related work occurring in or adjacent to Tree Save Areas shall be accomplished in a manner that minimizes damage to vegetation to be preserved, including any woody, herbaceous or vine plant species that occur in the lower canopy environment, and to the existing top soil and leaf litter layers that provide nourishment and protection to that vegetation. Removal of vegetation, if any, or soil disturbance in Tree Save Areas, including the removal of plant species that may be perceived as noxious or invasive, such as poison ivy, greenbrier, multi-floral rose, shall be subject to the review and approval of UFM.

The use of equipment in Tree Save Areas will be limited to hand-operated equipment such as chainsaws, wheel barrows, rakes and shovels. Any work that requires the use of motorized equipment, such as tree transplanting spades, skid loaders, tractors, trucks, stump-grinders, etc., or any accessory or attachment connected to this type of equipment shall not occur unless pre-approved by UFM.

D. Tree Preservation Walk-Through. Applicant shall retain the services of a certified arborist or landscape architect, and shall have the limits of clearing and grading marked with a continuous line of flagging prior to the walk-through meeting. During the tree-preservation walk-through meeting, Applicant's certified arborist or landscape architect shall walk the limits of clearing and grading with an UFM representative to determine whether adjustments to the clearing limits can be reasonably made to increase the area of tree preservation and/or to increase the survivability of trees at the edge of the limits of clearing and grading. Any such adjustments shall be implemented. Trees that are identified specifically by UFM in writing as dead or dying with the Tree Save Areas may be removed as part of the clearing operation. Any tree that is so designated shall be removed using a chain saw and such removal shall be accomplished in a manner that avoids damage to surrounding trees and associated understory vegetation. If a stump must be removed, this shall be done using a stump-grinding machine in a manner causing as little disturbance as possible to adjacent trees and associated understory vegetation and soil conditions. Applicant shall notify the Mount Vernon District Supervisor ten (10) days in advance of the tree preservation walk through meeting.

E. Tree Protection Fencing. All trees in the Tree Save Areas shall be protected by tree protection fencing in the form of four foot (4') high, fourteen (14) gauge welded wire attached to six foot (6') steel posts driven eighteen inches (18") into the ground and placed no further than ten feet (10') apart or, super silt fence, to the extent that required trenching for super silt fence does not sever or wound compression roots

which can lead to structural failure and/or uprooting of trees. Such fencing shall be erected at the limits of clearing and grading as shown on the demolition and phase I and II erosion and sediment control sheets, as may be modified in subparagraph (c) above. All tree protection fencing around Tree Save Areas shall be installed after the tree preservation walk-through meeting but prior to any clearing and grading activities. The installation of all tree protection fencing shall be performed under the supervision of a certified arborist and UFM, and accomplished in a manner that does not harm existing vegetation that is to be preserved. Five (5) days prior to the commencement of any clearing, grading or demolition activities, but subsequent to the installation of the tree protection devices, UFM and the Mount Vernon District Supervisor shall be notified and given the opportunity to inspect the site to ensure that all tree protection devices have been correctly installed. If it is determined that the fencing has not been installed correctly, no grading or construction activities shall occur until the fencing is installed correctly, as determined by UFM.

F. Root Pruning. Applicant shall root prune as noted in the Plan. All treatments shall be clearly identified, labeled, and detailed on the erosion and sediment control sheets of the site plan. The details for these treatments shall be reviewed and approved by UFM, accomplished in a manner that protects affected and adjacent vegetation to be preserved, and may include, but not be limited to the following:

- Root pruning shall be done with a trencher or vibratory plow to a depth of eighteen inches (18”).
- Root pruning shall take place prior to any clearing and grading.
- Root pruning shall be conducted with the supervision of a certified arborist.
- A UFM representative shall be informed when all root pruning and tree protection fence installation is complete.

G. Site Monitoring. During any clearing or tree/vegetation removal on the Property, an agent or representative of Applicant shall be present to monitor the process and ensure that the activities are conducted as proffered and as approved by UFM. Applicant shall retain the services of a certified arborist or landscape architect to monitor all tree preservation efforts in order to ensure conformance with all tree preservation proffers and UFM approvals. The Mount Vernon District Supervisor shall be notified of the name and contact information of the Applicant's representative responsible for site monitoring at the tree preservation walk-through meeting.

H. Reforestation Plan. A reforestation plan shall be submitted for areas disturbed by trail or utility installation, including the under-grounding of utilities in Tree Save Areas. This plan shall be submitted concurrently with the first and all subsequent site plan submissions for review and approval by UFM and shall be implemented as approved. The plan shall propose an appropriate selection of species based on existing and proposed site conditions to restore the area to a native forest cover type. The reforestation plan shall include but not be limited to the following:

- Plant list detailing species, sizes and stock type of trees and other vegetation to be planted;
- Soil treatments if necessary;
- Mulching specifications;
- Methods of installation;
- Maintenance;
- Mortality threshold;
- Monitoring; and
- Replacement schedule.

I. Tree Value Determination. Applicant shall retain a professional arborist with experience in plant appraisal to determine the replacement value of all trees ten inches (10") in diameter or greater within twenty-five feet (25') of the outer edges of the limits of clearing and grading on the Property and not within areas to be dedicated for public street purposes. These trees and their value shall be identified on the Tree Preservation Plan at the time of the first submission of the site plan. The replacement value shall take into consideration the age, size and condition of these trees and shall be determined by the so-called "Trunk Formula Method" contained in the latest edition of the *Guide for Plan Appraisal* published by the International Society of Arboriculture, subject to review and approval by UFM.

J. Tree Bonds. At the time of site plan approval, Applicant shall both post a cash bond and a letter of credit payable to the County of Fairfax to ensure preservation and/or replacement of the trees for which a tree value has been determined pursuant to Proffer 20.I that die or are dying due to unauthorized construction activities. The letter of credit shall be equal to 50% of the replacement value of the bonded trees. The cash bond shall consist of 33% of the amount of the letter of credit.

At any time prior to final bond release, should any bonded trees be dead, have been improperly removed, or are determined to be dying by UFM due to unauthorized construction activities, Applicant shall replace such trees at its expense. The replacement trees shall be of equivalent size, species and/or canopy cover as approved by UFM. In addition to this replacement obligation, Applicant shall also make a payment equal to the value of any bonded tree that is dead or dying or has been improperly removed due to unauthorized activity. This payment shall be determined based on the Trunk Formula Method and paid to a fund established by the County for furtherance of tree preservation objectives. At the time of approval of the final non-RUP, Applicant shall be entitled to a release of any monies remaining in the cash bond and a reduction in the letter of credit to an amount equal to 20% of the total amounts originally committed. Any funds remaining in the letter of credit or cash bond will be released two (2) years from the date of release of the conservation escrow, or sooner, if approved by UFM.

K. Transplantation. In the areas to be cleared, there may be young native trees, including holly and beech, which would be appropriate for transplanting.

Applicant shall retain the services of a certified arborist or landscape architect ("Arborist") with experience in transplantation to identify such trees as being appropriate for transplantation to other sites. Applicant shall contact a minimum of three (3) local landscaping companies and offer to permit them to remove the identified trees for transplantation in other locations in Fairfax County. Applicant shall permit any of the landscaping companies which accepts the offer access to the Property for removal of the identified trees prior to the commencement of clearing and grading.

25. Building A. The building identified as Building A on the CDP/FDP shall not exceed 60 feet in height nor shall its height exceed 208 feet above sea level.

26. Signage. Signage shall be provided in accordance with Article 12 of the Zoning Ordinance.

27. Successor and Assigns. These proffers will bind and inure to the benefit of Applicant and its successors and assigns.

28. Counterparts. These proffers may be executed in one or more counterparts, each of which when so executed and delivered shall be deemed an original document and all of which taken together shall constitute but one and the same instrument.

INOVA HEALTH CARE SERVICES

By: Inova Health System Foundation,  
Sole Member

Date: July 20, 2010

By:

  
\_\_\_\_\_

Richard C. Magenheimer,  
Chief Financial Officer  
of Inova Health System Foundation



## FINAL DEVELOPMENT PLAN CONDITIONS

FDP 2009-MV-023

July 13, 2010

If it is the intent of the Planning Commission to approve FDP 2009-MV-023 for a mixed-use development located at Tax Maps 107-4 ((1)) 75A, 77, 78, 79, 80, 81, and 82 staff recommends that the Planning Commission condition the approval by requiring conformance with the following development conditions:

1. Development of the property shall be in substantial conformance with the CDP/FDP entitled "INOVA Lorton Healthplex" consisting of 10 sheets prepared by Dewberry and Davis, LLC, dated October 20, 2009, as revised through June 30, 2010.
2. The Urban Forester shall walk the buffer area that is adjacent to all residential properties to ascertain that a substantial and effective year-round landscape buffer has been achieved prior to issuance of the first Non-Residential Use Permit (Non-RUP) for the site. If any deficiencies or gaps in the landscaped screening are noted by the Urban Forester, supplemental plantings to achieve adequate screening may be required by the Urban Forester. Species and specifications of any required supplemental plantings shall be decided by the Urban Forester. Planting locations of any required supplemental plantings shall be field located to the satisfaction of the Urban Forester.
3. In order to prevent any adverse impacts on nearby FCPA property, a plant schedule shall be provided with the site plan which demonstrates that native species shall be provided on the subject site. Any plant species, including perennials and seed mixes, identified by the Virginia Department of Conservation & Recreation Division of Natural Heritage (DNH) as invasive shall not be used on the subject property.
4. The applicant shall obtain permission from the Fairfax Water Board to relocate the 30-inch transmission main located in the 30-foot wide easement on the subject property and submit verification of such permission to DPWES prior to commencing any construction activity associated with Building A. If approval to relocate the said transmission main is not granted by the Fairfax Water Board, a Proffer Condition Amendment / Final Development Plan Amendment (PCA/FDPA) shall be required to relocate Building "A".
5. An Assisted Living Facility shall not be established onsite without the approval of a Proffer Condition Amendment (PCA) application and formal review by the Health Care Advisory Board (HCAB) in accordance with the Zoning Ordinance.

The above proposed conditions are staff recommendations and do not reflect the position of the Planning Commission unless and until adopted.

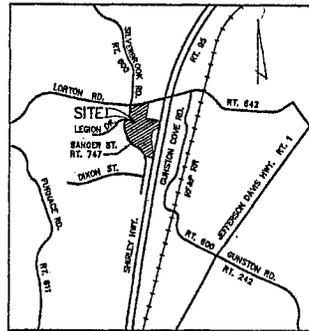


# INOVA LORTON HEALTHPLEX

## A Service of Inova Mount Vernon Hospital

Mount Vernon District      Fairfax County, Virginia

Conceptual Development Plan / Final Development Plan  
RZ 2009-MV-023



VICINITY MAP  
SCALE: 1" = 2,000'

Applicant:  
Inova Health Care Services  
8110 Gatehouse Rd., Suite 200  
Falls Church, VA 22042

Sheet Index

1. COVER SHEET
2. CONCEPTUAL / FINAL DEVELOPMENT PLAN - LAYOUT
3. PHASING PLAN, NOTES AND TABULATION, AND BUILDING PERSPECTIVES
4. SECTION AND RETAINING WALL DETAILS
5. ROAD IMPROVEMENT PLAN - NORTH
6. ROAD IMPROVEMENT PLAN - SOUTH
7. STORMWATER MANAGEMENT
8. STORMWATER MANAGEMENT
9. VAULT ROUTINGS
10. EXISTING VEGETATION MAP

Inova Lorton HealthPlex  
A Service of Inova Mount Vernon Hospital

Conceptual Development Plan /  
Final Development Plan



Francis Cauffman

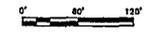


Revised June 30, 2010  
Revised June 3, 2010  
Revised May 10, 2010  
Revised April 7, 2010  
Revised March 11, 2010  
Revised November 23, 2009  
October 20, 2009



KEY PLAN

SCALE

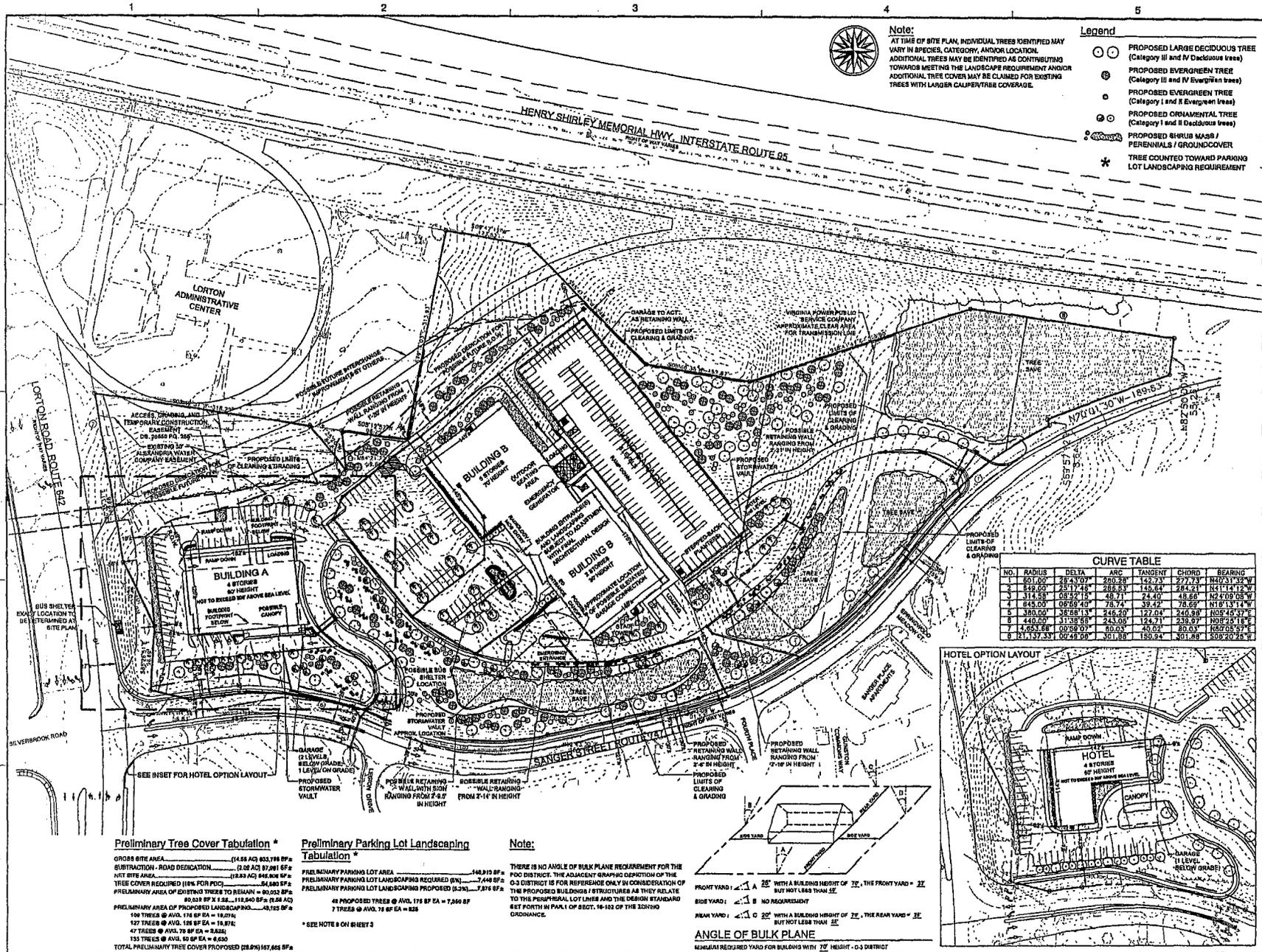


NO.	DATE	BY	DESCRIPTION
1	02.10.10	ARC	
2	05.10.10	ARC	
3	01.07.10	ARC	
4	03.11.10	ARC	
5	11.23.09	ARC	

DRAWN BY: ARC  
 APPROVED BY: [Signature]  
 CHECKED BY: PGY  
 DATE: October 29, 2009

**INOVA LORTON HEALTHPLEX**  
 Conceptual Development Plan /  
 Final Development Plan  
 Layout

PROJECT NO.

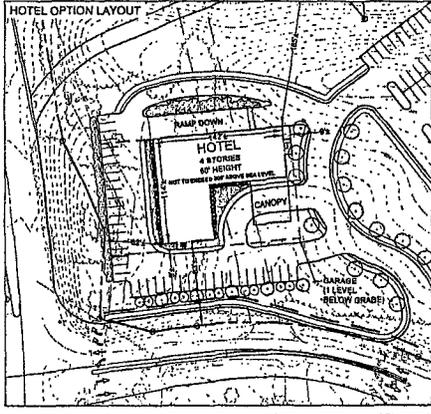


**Note:**  
 AT TIME OF SITE PLAN, INDIVIDUAL TREES IDENTIFIED MAY VARY IN SPECIES, CATEGORY, AND/OR LOCATION. ADDITIONAL TREES MAY BE IDENTIFIED AS CONTRIBUTING TOWARD MEETING THE LANDSCAPE REQUIREMENT AND/OR ADDITIONAL TREE COVER MAY BE CLAIMED FOR EXISTING TREES WITH LARGER CANOPY TREE COVERAGE.

- Legend**
- ○ PROPOSED LARGE DECIDUOUS TREE (Category III and IV Deciduous trees)
  - ⊗ PROPOSED EVERGREEN TREE (Category III and IV Evergreen trees)
  - PROPOSED EVERGREEN TREE (Category I and II Evergreen trees)
  - ⊗ PROPOSED ORNAMENTAL TREE (Category I and II Deciduous trees)
  - PROPOSED SHRUB MASS / PERENNIALS / GROUND COVER
  - \* TREE COUNTED TOWARD PARKING LOT LANDSCAPING REQUIREMENT

**CURVE TABLE**

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
1	501.00	28.2409	280.38	142.73	277.73	N40°31'49" W
2	149.00	20.1748	288.83	145.84	284.71	N41°14'12" W
3	114.58	09.9214	48.71	74.07	48.68	N2°20'05" W
4	845.00	09.9510	78.74	38.42	78.89	N18°13'14" W
5	380.00	38.8813	246.20	127.04	240.88	N05°45'37" E
6	140.00	17.3868	243.05	124.71	238.97	N05°25'14" E
7	1,653.66	00.9807	610.03	40.02	608.03	N80°05'37" E
8	211.37.33	00.4906	301.88	150.94	301.88	S08°20'26" W



**Preliminary Tree Cover Tabulation \***

GRAND SITE AREA = (14.88 AC) 653,178 SF  
 SUBTRACTION - ROAD DEDICATION = (2.08 AC) 91,061 SF  
 NET SITE AREA = (12.80 AC) 562,117 SF  
 TREE COVER REQUIRED (10% FOR PDC) = 56,212 SF  
 PRELIMINARY AREA OF EXISTING TREES TO REMAIN = 30,032 SF  
 80.03 @ 1.58' = 12,640 SF = 12,640 AC  
 PRELIMINARY AREA OF PROPOSED LANDSCAPING = 43,182 SF  
 109 TREES @ AVG. 178 SF EA = 19,274 SF  
 127 TREES @ AVG. 158 SF EA = 19,974 SF  
 47 TREES @ AVG. 75 SF EA = 3,525 SF  
 153 TREES @ AVG. 80 SF EA = 12,439 SF  
 TOTAL PRELIMINARY TREE COVER PROPOSED (28.0%) 167,466 SF\*

**Preliminary Parking Lot Landscaping Tabulation \***

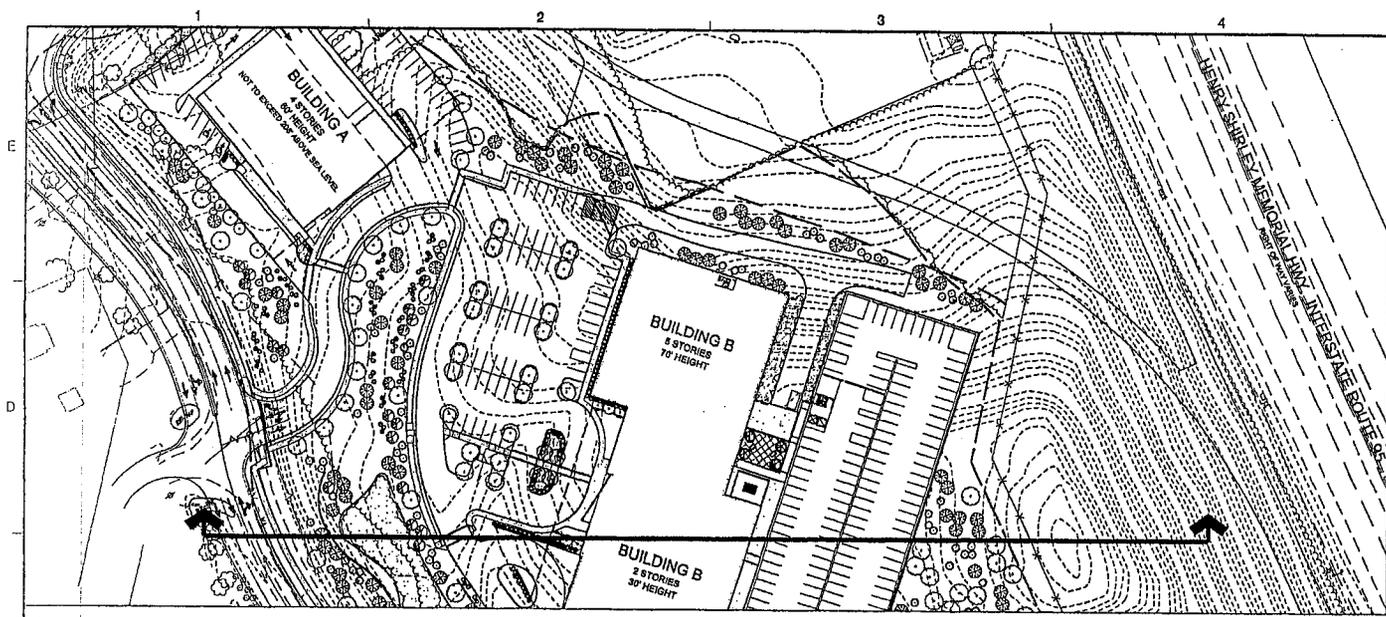
PRELIMINARY PARKING LOT AREA = 148,312 SF  
 PRELIMINARY PARKING LOT LANDSCAPING REQUIRED (10%) = 14,831 SF  
 PRELIMINARY PARKING LOT LANDSCAPING PROPOSED (10%) = 7,416 SF  
 42 PROPOSED TREES @ AVG. 178 SF EA = 7,467 SF  
 7 TREES @ AVG. 75 SF EA = 525 SF  
 \* SEE NOTE # ON SHEET 3

**Note:**  
 THERE IS NO ANGLE OF BULK PLANE REQUIREMENT FOR THE PDC DISTRICT. THE ADJACENT GRAPHIC DEPICTION OF THE PROPOSED BUILDING STRUCTURES AS THEY RELATE TO THE PERMPARK LOT LINES AND THE DESIGN STANDING SET FORTH IN PAR. 1 OF SECT. 16-102 OF THE ZONING ORDINANCE.

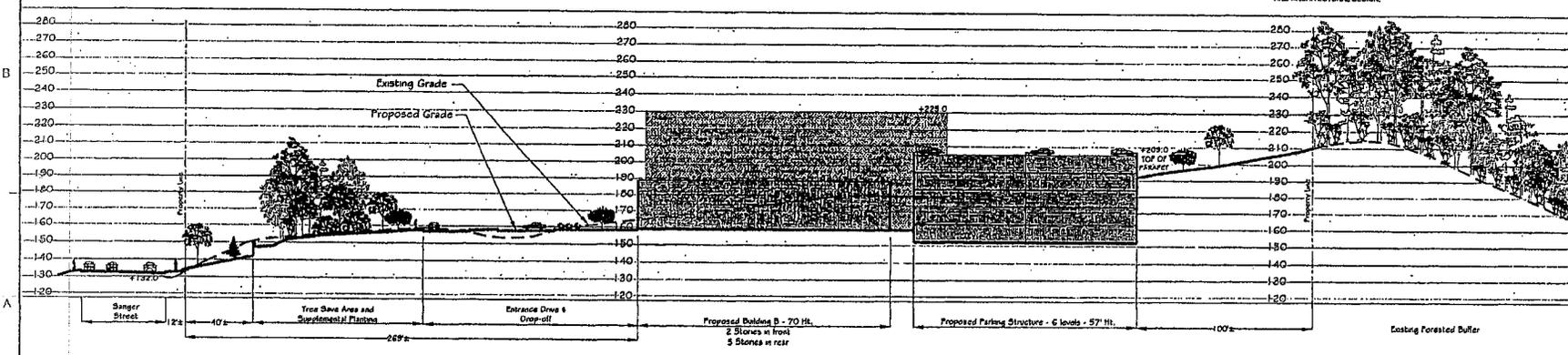
**ANGLE OF BULK PLANE**  
 MINIMUM REQUIRED YARD FOR BUILDINGS WITH 7' HEIGHT - O-3 DISTRICT

FRONT YARD: 1 A 25' WITH A BUILDING HEIGHT OF 7', THE FRONT YARD = 25' BUT NOT LESS THAN 5'.  
 SIDE YARD: 1 B NO REQUIREMENT.  
 REAR YARD: 1 C 25' WITH A BUILDING HEIGHT OF 7', THE REAR YARD = 25' BUT NOT LESS THAN 5'.



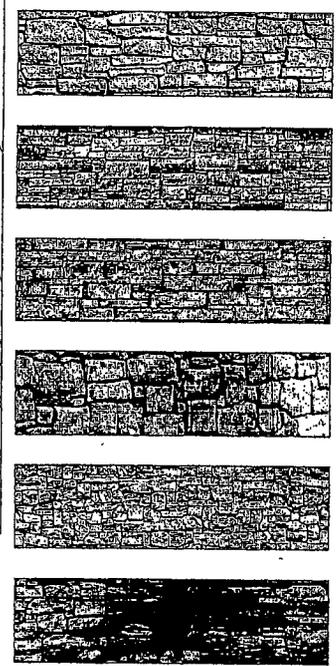


SECTION KEY MAP



SECTION

RETAINING WALL FACE OPTIONS



**NOTES:**  
THE EXAMPLES OF POSSIBLE RETAINING WALL FACE TREATMENTS AND THE CROSS SECTION PRESENTED ON THIS SHEET ARE BASED ON PRELIMINARY ENGINEERING AND ARCHITECTURAL DESIGN. THEY ARE INCLUDED TO ILLUSTRATE THE GENERAL CHARACTER AND MARKING OF THE PROPOSED DEVELOPMENT PROGRAM WHICH WILL BE REFINED AND SUBJECT TO MINOR MODIFICATION WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN.



Dewberry & Davis L.L.O.  
4401 AMBASSADOR BLVD.  
FAIRFAX, VA 22031  
PHONE: 703.241.1100  
FAX: 703.241.0171  
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Francis Cauffman

Inova Lorton HealthPlex  
A Service of Inova Mount Vernon Hospital  
CONCEPTUAL DEVELOPMENT PLAN  
FINAL DEVELOPMENT PLAN  
MOUNT VERNON DISTRICT  
FAIRFAX COUNTY, VIRGINIA



KEY PLAN

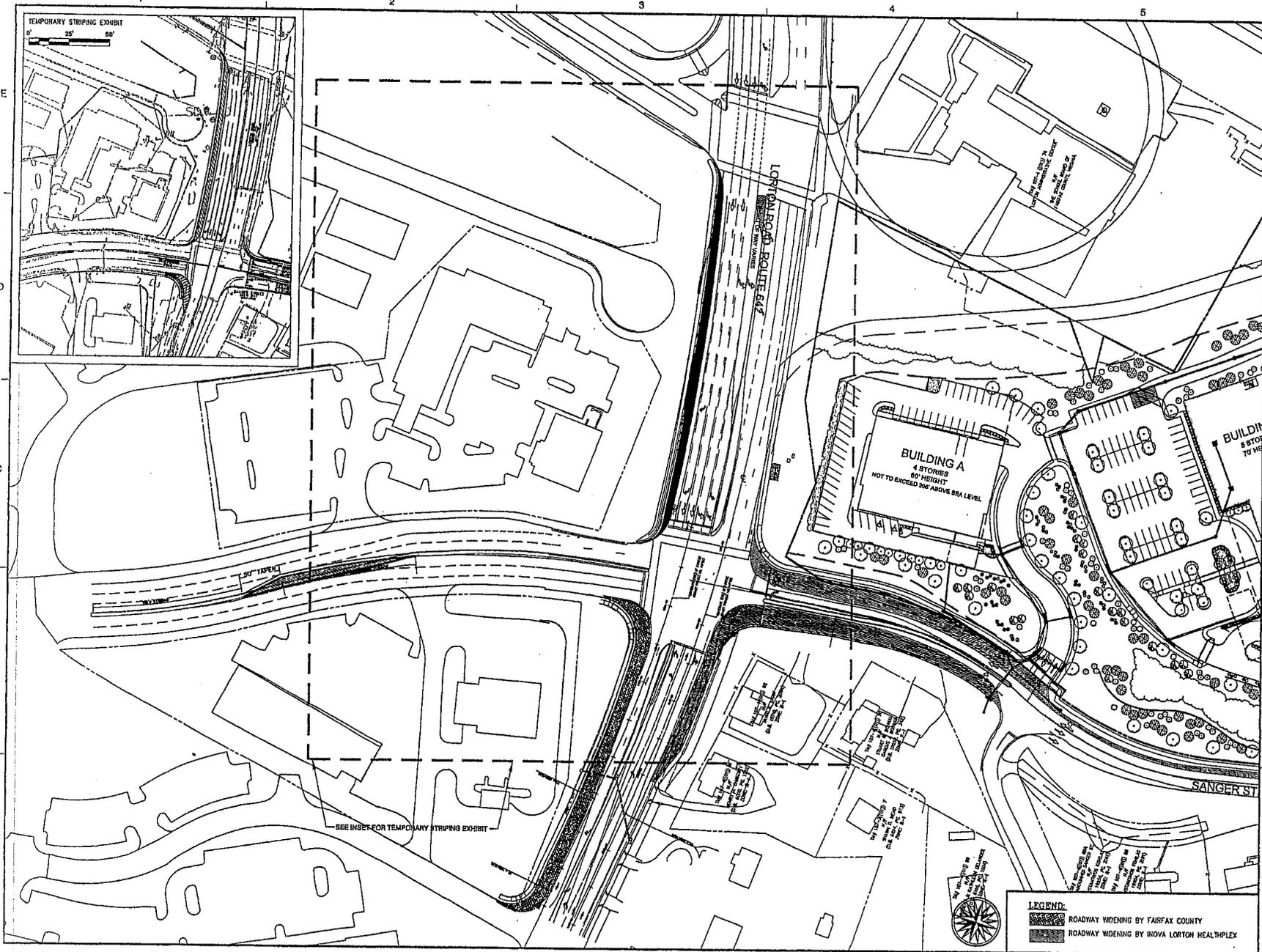
SCALE

No.	DATE	BY	Description
3	08.30.10	ARC	
2	08.03.10	ARC	
1	05.18.10	ARC	New Sheet

REVISIONS  
DRAWN BY: ARC  
APPROVED BY: PBY  
CHECKED BY: PBY  
DATE: October 20, 2009

TITLE  
INOVA LORTON HEALTHPLEX  
Section and Retaining Wall Details

PROJECT NO.



TEMPORARY STRIPING EXHIBIT  
0' 25' 50'

**BUILDING A**  
4 STORIES  
60' HEIGHT  
NOT TO EXCEED 200' ABOVE SEA LEVEL

**BUILDING**  
5 STORIES  
70' HEIGHT

SEE INSET FOR TEMPORARY STRIPING EXHIBIT

**LEGEND:**  
 ROADWAY WIDENING BY FAIRFAX COUNTY  
 ROADWAY WIDENING BY INOVA LORTON HEALTHPLEX



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Inova Lorton HealthPlex  
A Service of Inova Mount Vernon Hospital  
CONCEPTUAL DEVELOPMENT PLAN /  
FINAL DEVELOPMENT PLAN  
MOUNT VERNON DISTRICT  
FAIRFAX COUNTY, VIRGINIA



KEY PLAN

SCALE

0' 50' 100'

No.	DATE	BY	Description
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2	06.03.10	ARC	
1	05.10.10	ARC	New Sheet

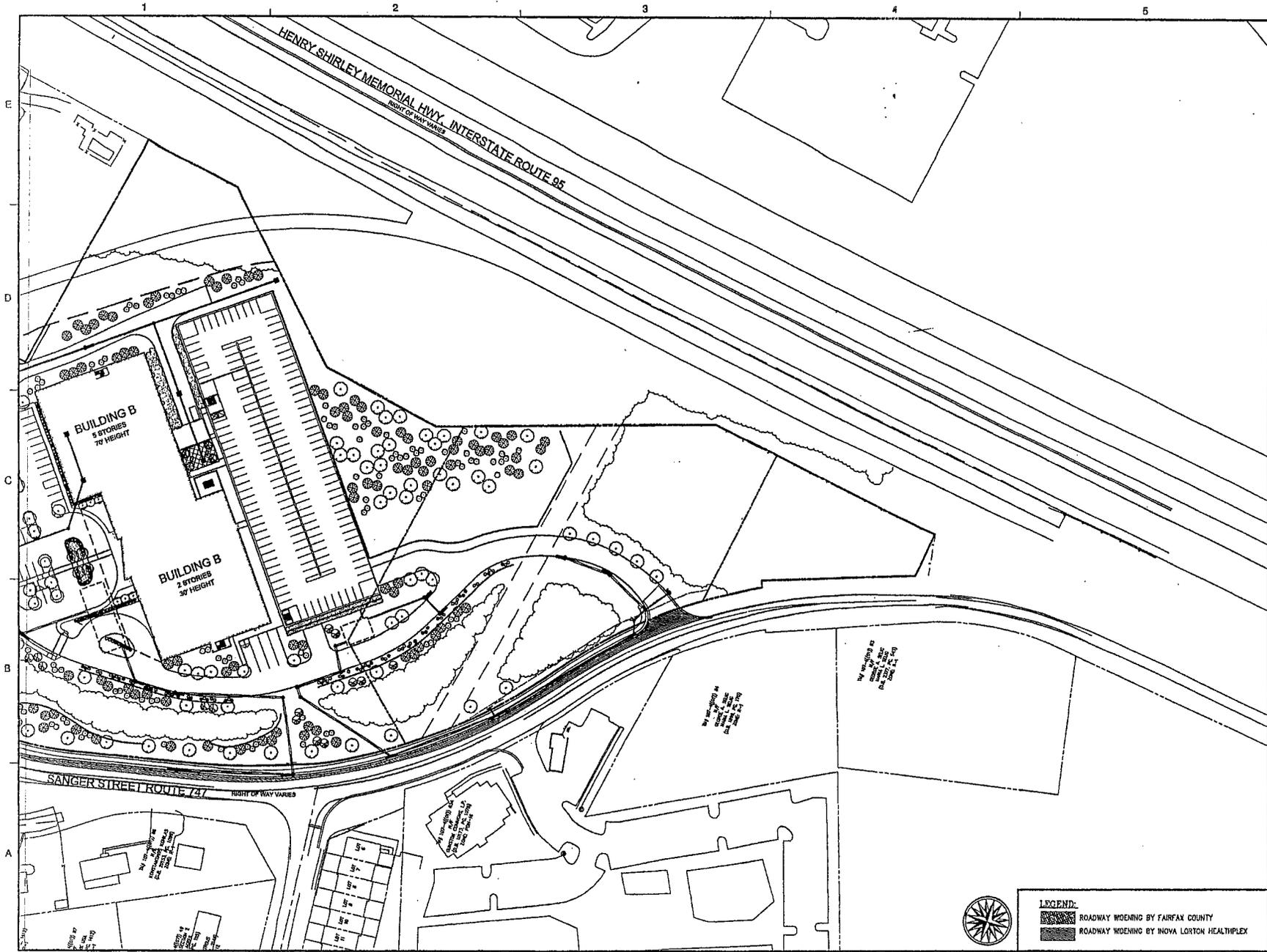
REVISIONS:  
 DRAWN BY: ARC  
 APPROVED BY: \_\_\_\_\_  
 CHECKED BY: POY  
 DATE: October 20, 2009

TITLE  
**INOVA LORTON HEALTHPLEX**  
 Road Improvement Plan - North

PROJECT NO.

**5**

SHEET NO. 5 of 10  
M-10780



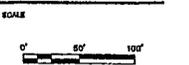
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Francis Cauffman

**Inova Lorton HealthPlex**  
 A Service of Inova Mount Vernon Hospital  
 CONCEPTUAL DEVELOPMENT PLAN  
 FINAL DEVELOPMENT PLAN  
 MOUNT VERNON DISTRICT  
 FAIRFAX COUNTY, VIRGINIA



KEY PLAN



No.	DATE	BY	Description
3	08.30.10	ABC	
2	08.03.10	ABC	
1	02.10.10	ABC	New Sheet

DRAWN BY: ABC  
 APPROVED BY: PWT  
 CHECKED BY: PWT  
 DATE: October 20, 2009

TITLE  
**INOVA LORTON HEALTHPLEX**  
 Road Improvement Plan - South

PROJECT NO.

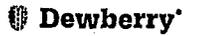
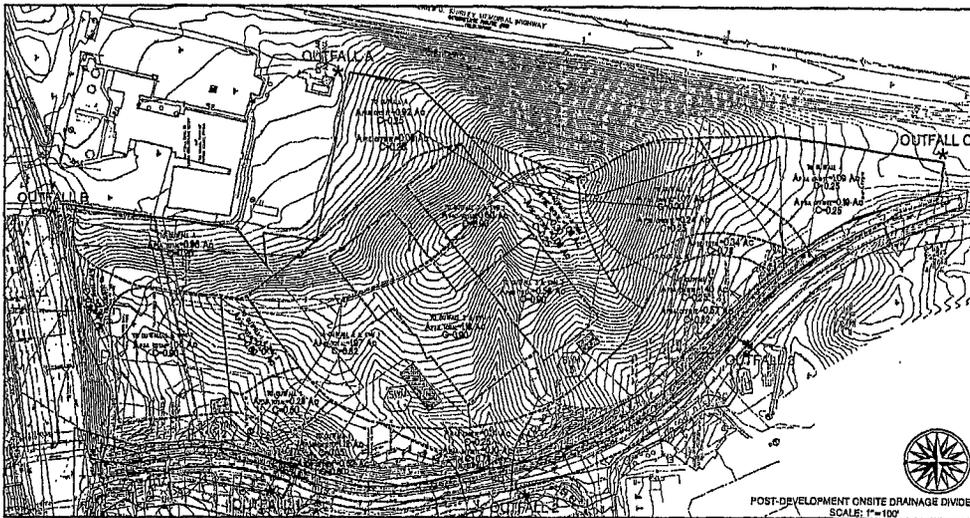
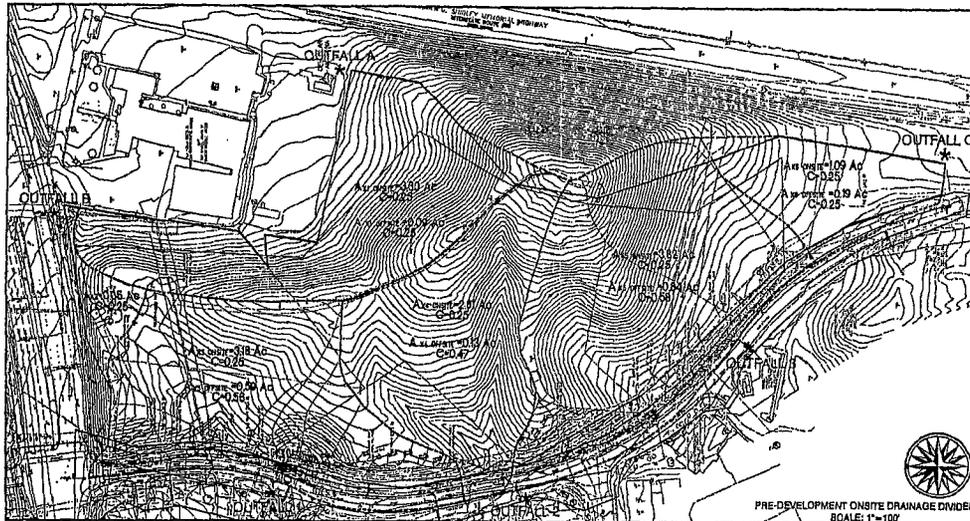
6  
 SHEET NO. 6 OF 10  
 M-10760

**DRAINAGE DIVIDE DATA**

OUTFALL A	EXISTING		UNCONTROLLED FLOW		CONTROLLED FLOW	
	(10Y)	(10Y)	(10Y)	(10Y)	(10Y)	(10Y)
EXISTING	3.3	0.28	8.45	7.27	4.41	0.16
PIA (cfs)	0.09	0.28	8.45	7.27	0.12	0.18
TOTAL	3.39	0.56	16.90	14.54	4.53	0.34
PROPOSED						
PIA	1.01	0.25	8.45	7.27	1.33	1.83
PIB (cfs)	0.82	0.28	8.45	7.27	1.58	1.57
PIA (cfs)	0.08	0.3	8.45	7.27	0.13	0.17
TOTAL	2.91	0.83	16.90	14.54	3.04	3.57
OUTFALL B	EXISTING		UNCONTROLLED FLOW		CONTROLLED FLOW	
	(10Y)	(10Y)	(10Y)	(10Y)	(10Y)	(10Y)
EXISTING	0.35	0.28	8.45	7.27	0.44	0.84
TOTAL	0.35	0.28	8.45	7.27	0.44	0.84
PROPOSED						
P2	0.3	0.28	8.45	7.27	0.41	0.85
TOTAL	0.3	0.28	8.45	7.27	0.41	0.85
OUTFALL C	EXISTING		UNCONTROLLED FLOW		CONTROLLED FLOW	
	(10Y)	(10Y)	(10Y)	(10Y)	(10Y)	(10Y)
EXISTING	1.08	0.28	8.45	7.27	1.74	2.33
PIA (cfs)	0.19	0.28	8.45	7.27	0.28	0.35
TOTAL	1.27	0.56	16.90	14.54	2.02	2.68
PROPOSED						
PIA	1.09	0.25	8.45	7.27	1.74	2.33
PIB (cfs)	0.19	0.28	8.45	7.27	0.28	0.35
TOTAL	1.28	0.53	16.90	14.54	2.02	2.68
OUTFALL 1	EXISTING		UNCONTROLLED FLOW		CONTROLLED FLOW	
	(10Y)	(10Y)	(10Y)	(10Y)	(10Y)	(10Y)
EXISTING	3.77	0.28	8.45	7.27	1.8	2.4
PIA (cfs)	0.88	0.28	8.45	7.27	0.84	1.26
TOTAL	4.65	0.56	16.90	14.54	2.64	3.66
PROPOSED						
PIA	1.12	0.38	8.45	7.27	2.16	2.88
PIB (cfs)	0.62	0.4	8.45	7.27	2.17	3.02
PIA (cfs)	1.08	0.3	8.45	7.27	0.2	0.8
PIB (cfs)	0.33	0.88	8.45	7.27	1.24	1.64
PIA (cfs)	0.28	0.5	8.45	7.27	0.16	1.02
TOTAL	3.31	1.91	16.90	14.54	3.84	6.36
OUTFALL 2	EXISTING		UNCONTROLLED FLOW		CONTROLLED FLOW	
	(10Y)	(10Y)	(10Y)	(10Y)	(10Y)	(10Y)
EXISTING	2.94	0.28	8.45	7.27	4.01	5.34
PIA (cfs)	0.19	0.27	8.45	7.27	0.33	0.44
TOTAL	3.13	0.55	16.90	14.54	4.34	5.78
PROPOSED						
PIA	1.81	0.28	8.45	7.27	0.42	0.58
PIA (cfs)	0.1	0.78	8.45	7.27	0.43	0.57
PIB (cfs)	1.21	0.9	8.45	7.27	0.94	1.22
PIA (cfs)	0.8	0.9	8.45	7.27	2.94	3.82
PIA (cfs)	1.87	0.82	8.45	7.27	1.8	2.4
TOTAL	4.39	1.78	16.90	14.54	6.53	8.71
OUTFALL 3	EXISTING		UNCONTROLLED FLOW		CONTROLLED FLOW	
	(10Y)	(10Y)	(10Y)	(10Y)	(10Y)	(10Y)
EXISTING	4.66	0.28	8.45	7.27	6.35	8.47
PIA (cfs)	0.84	0.58	8.45	7.27	2.86	3.84
TOTAL	5.5	0.86	16.90	14.54	9.21	12.31
PROPOSED						
PIA	1.43	0.25	8.45	7.27	1.86	2.4
PIA (cfs)	0.87	0.42	8.45	7.27	2.58	3.4
PIB (cfs)	0.66	0.8	8.45	7.27	2.75	3.68
PIA (cfs)	1.08	0.3	8.45	7.27	1.77	2.38
PIA (cfs)	0.08	0.35	8.45	7.27	0.17	0.16
PIA (cfs)	1.1	0.3	8.45	7.27	1.8	2.4
PIA (cfs)	0.24	0.35	8.45	7.27	0.33	0.44
PIA (cfs)	0.34	0.78	8.45	7.27	1.45	1.83
TOTAL	5.4	1.03	16.90	14.54	12.71	16.88

**DETENTION SUMMARY (ONSITE AREAS ONLY)**

STORM	EX SITE Q (cfs)	PROP SITE Q UNCONTROLLED (cfs)	PROP SITE Q CONTROLLED (cfs)
2 YR	22.21	41.86	18.7
10 YR	28.63	55.65	24.2



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Inova Lorton HealthPlex  
 A Division of Inova Mount Vernon Hospital  
 CONCEPTUAL DEVELOPMENT PLAN /  
 FINAL DEVELOPMENT PLAN  
 STORMWATER MANAGEMENT PLAN  
 PREPARED BY:  
 DEWBERRY & DAVIS LLC  
 FORT WORTH, TEXAS



KEY PLAN

SCALE

AS NOTED

NO.	DATE	BY	DESCRIPTION
1	04/20/10	PCJ	
2	05/10/10	PCJ	
3	06/02/10	PCJ	
4	06/20/10	PCJ	

APPROVED BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 DATE: MARCH 11, 2010  
 TITLE: INOVA LORTON HEALTHPLEX  
 Conceptual Development Plan /  
 Final Development Plan  
 Stormwater Management  
 PROJECT NO. \_\_\_\_\_

**BMP FACILITY DESIGN FORMAT**

PLAN NAME: INOVA LORTON DATE: 03-05-10

**WATER QUALITY CONTROL NARRATIVE:** Best Management Practices (BMP) will be met by providing these facilities and their associated SWP. These facilities will be integrated into the detention facilities and are proposed as providing a 50% efficiency in phosphorus removal. Conservation easements are shown between the phosphorus removal easements. Additional VADSW BMPs such as tree filters and quality control ponds which are utilized for smaller areas may also be utilized to meet the phosphorus removal requirements. Detention facilities include phosphorus removal. Phosphorus removal is shown in terms of the additional requirement as 60% for the overall site.

**WATERBOD DATA**  
**PART I - LIST ALL OF THE SUBAREA AND C/F FACTORS USED IN THE BMP COMPUTATIONS.**

SUBAREA DESIGNATION & DESCRIPTION	C/F	ACRES
1. P1A	.25	.92
2. P1B	.25	.92
3. P2A	.25	.90
4. P2B (to SWM 2)	.25	1.05
5. P2B	.25	1.13
6. P3C (to SWM 2)	.25	.23
7. P3D	.25	.31
8. P4A	.25	.50
9. P4B (to SWM 1)	.25	1.97
10. P4C (to SWM 1)	.25	1.40
11. P4D (to SWM 1)	.25	1.40
12. P5A	.25	.50
13. P5B (to SWM 3)	.25	1.08
14. P5C (to SWM 2)	.25	1.07
15. P5D	.25	.34
16. P5E	.25	.34
17. P5A	.25	1.09
<b>Total</b>		<b>14.85</b>

**PART II - COMPUTE THE WEIGHTED AVERAGE C/F FACTOR FOR THE SITE**

AREA OF SITE	SUBAREA DESIGNATION	C/F	X'	ACRES	W. PRODUCT
1.	P1A	.25	.92	.92	.23
2.	P1B	.25	.92	.92	.23
3.	P2A	.25	.90	.90	.23
4.	P2B	.25	1.05	1.05	.26
5.	P2B	.25	1.13	1.13	.28
6.	P3C	.25	.23	.23	.06
7.	P3D	.25	.31	.31	.08
8.	P4A	.25	.50	.50	.13
9.	P4B	.25	1.97	1.97	.50
10.	P4C	.25	1.40	1.40	.35
11.	P4D	.25	1.40	1.40	.35
12.	P5A	.25	.50	.50	.13
13.	P5B	.25	1.08	1.08	.27
14.	P5C	.25	1.07	1.07	.27
15.	P5D	.25	.34	.34	.09
16.	P5E	.25	.34	.34	.09
17.	P5A	.25	1.09	1.09	.27
<b>Total</b>				<b>7.58</b>	

WEIGHTED AVERAGE C/F FACTOR 7.58/14.85 = .51

**PART III - COMPUTE THE TOTAL PHOSPHORUS REMOVAL FOR THE SITE**

SUBAREA DESIGNATION	BMP TYPE	REMOVAL EFF. %	AREA RATIO	C/F FACTOR RATIO	PRODUCT
1.	P1A	50%	.075	1.78	6.31
2.	P1B	50%	.075	1.33	1.83
3.	P2A	50%	.068	1.78	7.18
4.	P2B	50%	.061	1.78	3.06
5.	P2B	50%	.068	1.58	10.66
6.	P3C	50%	.076	.87	2.11
7.	P3D	50%	.088	1.73	2.09
8.	P4A (to S Area)	100%	.088	1.00	5.5
<b>TOTAL</b>					<b>40.1</b>

Note: - BP designates Stormwater  
CF designates Conservation Easement

**Existing Conditions:**  
The 14.85 acre site is heavily wooded with mature trees and with no standing structures. The highest part of the site is located on the western border and slopes steeply in all directions from that point. In existing conditions, the majority of the site drains to Range Street, where the runoff is conveyed to Olive Run by three existing outfalls, Outfalls 1, 2 and 3. Outfall 1 and 2 drain into the main channel of Olive Run, while Outfall 3 drains into the Olive Run Floodplain to the west of the site. To the north, west, Outfalls A and B, about 500 feet from the existing grass ditches. To the south, at Outfall C, the site slopes down into a paved ditch that runs along P&W. The paved ditch discharges into an unnamed tributary to Olive Run.

**Proposed Conditions:**  
**Outfall 1 (Sheet Pile):**  
There is a decrease in the runoff to this outfall in the proposed conditions because the drainage area is reduced. The area draining to this outfall is unaltered by the proposed development therefore no SWP controls are proposed.

**Outfall 2 (Sheet Pile):**  
There is a decrease in the runoff to this outfall in the proposed conditions because the drainage area is reduced. The area draining to this outfall is unaltered by the proposed development therefore no SWP controls are proposed.

**Outfall 3 (Sheet Pile):**  
The drainage area to this outfall is 3.21 acres. The proposed stormwater/detention facility (SWM 3) will provide detention and BMP for this drainage area. The runoff from the drainage area is reduced in the outfall by a proposed storm sewer and then across Range Street through an existing 18" pipe. The runoff is discharged on the west side of Range Street where it is conveyed by a 31" culvert into a defined ditch which carries the flow approximately 750 feet to the Olive Run Floodplain.

The proposed conditions show a reduction of 0.19 cfs and 0.47 cfs in the 5- and 10-year peak discharges to the outfall after detention, respectively. The capacity of the 18" pipe under Range Street, the 21" culvert and the defined channel to carry this flow is a point where the drainage area is 100 times the drainage area to this outfall of area. To prevent this area from becoming a flood hazard, the defined channel is designed into the Olive Run Floodplain with flood engineering. The area upstream will be approximately channel capacity and flow velocity to determine adequacy of the channel.

**Outfall 4 (Sheet Pile):**  
The drainage area to this outfall is 4.19 acres. The proposed stormwater/detention facility (SWM 4) will provide detention and BMP for this drainage area. The peak discharge to this outfall with proposed conditions will be reduced below the existing peak discharge to this outfall. The runoff is conveyed in the west side of Range Street by an existing 18" culvert and then discharged into a well-defined channel that carries the runoff approximately 450 feet to the Olive Run Floodplain. The proposed conditions show a decrease of 0.36 cfs and 0.89 cfs in the 5- and 10-year peak discharges, respectively. To determine outfall adequacy, the capacity of the 18" culvert, the capacity and velocity of the runoff in the well-defined channel will be compared with that required to a point where the drainage area is 100 times area.

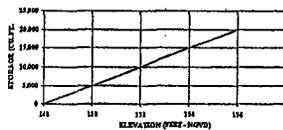
**Outfall 5 (Sheet Pile):**  
The drainage area to this outfall is 5.40 acres. The proposed stormwater/detention facility (SWM 5) will provide detention and BMP for this drainage area. The peak discharge with proposed conditions will be reduced below the existing peak discharge. The proposed conditions show a decrease of 0.12 cfs and 0.29 cfs in the 5- and 10- year peak discharges, respectively. The runoff is routed through an existing storm sewer system and discharged into the Olive Run Floodplain. The proposed conditions show a decrease of 0.12 cfs and 0.29 cfs in the 5- and 10-year peak discharges, respectively. To determine outfall adequacy, the capacity of the 18" culvert, the capacity and velocity of the runoff in the well-defined channel will be compared with that required to a point where the drainage area is 100 times 5.40 acres with flood engineering.

**Outfall 6 (Sheet Pile):**  
The drainage area to this outfall is 1.24 acres. The 5- and 10-year peak discharge with proposed conditions will remain at the existing peak discharge levels. The sheet flow from the drainage area discharges into a paved ditch that conveys the runoff to an unnamed tributary to Olive Run. This outfall is not impacted as the drainage area will remain unaltered by the proposed development. No SWP facilities are proposed.

NOTE: RATIONAL FORMULA C/F FACTORS ARE TAKEN FROM THE GENERAL ZONING VALUES LISTED IN PPM CHART 6B-19.

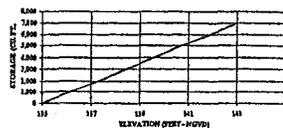
**VAULT 1 (84'x30'x8')**

**ELEVATION VS STORAGE**



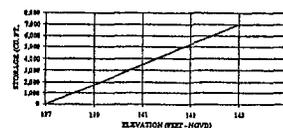
**VAULT 2 (35'x25'x8')**

**ELEVATION VS STORAGE**



**VAULT 3 (35'x25'x8')**

**ELEVATION VS STORAGE**



PROJECT: Inova Lorton SWM 1  
COMPUTED BY: BM

SCALE = 1/8" = 1' ELEV INTERVAL: 1'

STAGE VS STORAGE										
ELEV. FT.	AREA SQ. FT.	AREA SQ. FT.	AREA SQ. FT.	N	VOL. CU. YD.	TOT VOL. CU. YD.				
116.00	6.25	2500								
119.00	6.25	2500			5600	5600	0.11670	185.0		
122.00	6.25	2500			8000	14000	0.23957	379.0		
125.00	6.25	2500			9600	15000	0.24439	431.0		
126.00	6.25	2500			9200	20000	0.45914	746.0		

PROJECT: Inova Lorton SWM 1  
COMPUTED BY: BM

SCALE = 1/8" = 1' ELEV INTERVAL: 1'

STAGE VS STORAGE										
ELEV. FT.	AREA SQ. FT.	AREA SQ. FT.	AREA SQ. FT.	N	VOL. CU. YD.	TOT VOL. CU. YD.				
125.00	6.25	275								
127.00	6.25	275			3750	3750	0.04017	64.0		
129.00	6.25	275			5750	3800	0.20079	128.0		
131.00	6.25	275			5500	5500	0.11853	174.0		
132.00	6.25	275			5750	7000	0.11672	192.0		

PROJECT: Inova Lorton SWM 2  
COMPUTED BY: BM

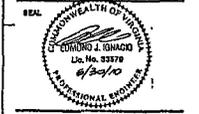
SCALE = 1/8" = 1' ELEV INTERVAL: 1'

STAGE VS STORAGE										
ELEV. FT.	AREA SQ. FT.	AREA SQ. FT.	AREA SQ. FT.	N	VOL. CU. YD.	TOT VOL. CU. YD.				
127.00	6.25	275								
129.00	6.25	275			3750	3750	0.04017	64.0		
131.00	6.25	275			5750	3800	0.20079	128.0		
133.00	6.25	275			5500	5500	0.11853	174.0		
134.00	6.25	275			5750	7000	0.11672	192.0		



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Inova Lorton HealthPlex  
A Service of Inova Health System  
CONCEPTUAL DEVELOPMENT PLAN /  
FINAL DEVELOPMENT PLAN  
FARMAN COUNTY, VIRGINIA



SCALE: N/A

NO.	DATE	BY	DESCRIPTION
4	05/30/10	PC	
3	04/03/10	PC	
2	05/10/10	PC	
1	04/07/10	PC	

DATE: MARCH 11, 2010

INNOVATION HEALTHPLEX  
Conceptual Development Plan /  
Final Development Plan  
STORMWATER MANAGEMENT  
PROJECT NO.

Inova Lorton HealthPlex  
 A Service of Inova Mount Vernon Hospital  
 CONCEPTUAL DEVELOPMENT PLAN /  
 FINAL DEVELOPMENT PLAN  
 MOUNT VERNON DISTRICT  
 PRINCE GEORGE COUNTY, VIRGINIA



NET PLAN

SCALE

N/A

No.	DATE	BY	Description
4	06/30/10	PCC	
3	05/11/10	PCC	
2	05/10/10	PCC	
1	04/07/10	PCC	

REVISIONS

DRAWN BY \_\_\_\_\_

APPROVED BY \_\_\_\_\_

CHECKED BY \_\_\_\_\_

DATE: MARCH 11, 2010

TITLE  
**INOVA LORTON HEALTHPLEX**  
 Conceptual Development Plan /  
 Final Development Plan  
 VAULT ROUTINGS

PROJECT NO.

**SWM 3-2 YR**

Modified Puls Routing

Inflow Hydrograph: X:\DATA\1006-9-1\VT113C\SWM10-03-1\SWM3-2.IYD  
 Storage/Elevation Curve: X:\DATA\1006-9-1\VT113C\SWM10-03-1\SWM3.E3  
 Discharge/Elevation Curve: X:\DATA\1006-9-1\VT113C\SWM10-03-1\SWM3.E0

Basin Bypass Capacity = 0.0 cfs  
 Starting Pool Elevation = 137.00 feet  
 Time Interval = .0833 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.000	137.00	0.00	0.00
0.08	4.70	4.70	0.015	137.75	0.31	0.31
0.17	3.00	3.00	0.039	138.92	0.35	0.35
0.25	2.30	2.30	0.062	139.61	0.44	0.44
0.33	1.80	1.80	0.082	140.06	0.70	0.70
0.42	1.50	1.50	0.098	140.38	0.74	0.74
0.50	1.30	1.30	0.110	140.63	0.76	0.76
0.58	1.10	1.10	0.117	140.75	0.78	0.78
0.67	1.00	1.00	0.117	140.84	0.79	0.79
0.75	0.90	0.90	0.118	140.90	0.79	0.79
0.83	0.85	0.85	0.119	140.92	0.80	0.80
0.92	0.80	0.80	0.119	140.93	0.80	0.80
1.00	0.78	0.78	0.119	140.91	0.80	0.80
1.08	0.64	0.64	0.119	140.91	0.80	0.80
1.17	0.58	0.58	0.119	140.85	0.79	0.79
1.25	0.48	0.48	0.119	140.77	0.78	0.78
1.33	0.42	0.42	0.119	140.67	0.76	0.76
1.42	0.37	0.37	0.119	140.54	0.75	0.75
1.50	0.33	0.33	0.119	140.31	0.73	0.73
1.58	0.27	0.27	0.119	140.16	0.71	0.71
1.67	0.22	0.22	0.119	140.01	0.69	0.69
1.75	0.16	0.16	0.119	139.84	0.67	0.67
1.83	0.10	0.10	0.119	139.66	0.65	0.65
1.92	0.05	0.05	0.119	139.47	0.62	0.62
2.00	0.00	0.00	0.119	139.27	0.60	0.60

Total Routing Mass Balance Discrepancy is 1.24%

**SWM 2-2 YR**

Modified Puls Routing

Inflow Hydrograph: X:\DATA\1006-9-1\VT113C\SWM10-03-1\SWM2-2.IYD  
 Storage/Elevation Curve: X:\DATA\1006-9-1\VT113C\SWM10-03-1\SWM2.E3  
 Discharge/Elevation Curve: X:\DATA\1006-9-1\VT113C\SWM10-03-1\SWM2.E0

Basin Bypass Capacity = 0.0 cfs  
 Starting Pool Elevation = 135.00 feet  
 Time Interval = .0833 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.000	135.00	0.00	0.00
0.08	4.44	4.44	0.020	135.98	0.59	0.59
0.17	4.20	4.20	0.050	137.48	1.19	1.19
0.25	3.10	3.10	0.066	138.29	1.39	1.39
0.33	2.50	2.50	0.076	138.76	1.49	1.49
0.42	2.00	2.00	0.081	139.01	1.54	1.54
0.50	1.70	1.70	0.083	139.11	1.55	1.55
0.58	1.50	1.50	0.083	139.16	1.55	1.55
0.67	1.30	1.30	0.082	139.07	1.53	1.53
0.75	1.20	1.20	0.080	138.97	1.53	1.53
0.83	1.10	1.10	0.079	138.84	1.51	1.51
0.92	1.00	1.00	0.074	138.69	1.47	1.47
1.00	0.90	0.90	0.071	138.53	1.44	1.44
1.08	0.80	0.80	0.067	138.35	1.39	1.39
1.17	0.70	0.70	0.063	138.11	1.33	1.33
1.25	0.70	0.70	0.058	137.90	1.29	1.29
1.33	0.60	0.60	0.054	137.69	1.24	1.24
1.42	0.50	0.50	0.050	137.46	1.18	1.18
1.50	0.44	0.44	0.045	137.23	1.12	1.12
1.58	0.40	0.40	0.040	137.00	1.06	1.06
1.67	0.30	0.30	0.036	136.77	0.98	0.98
1.75	0.20	0.20	0.031	136.53	0.90	0.90
1.83	0.10	0.10	0.026	136.29	0.81	0.81
1.92	0.10	0.10	0.021	136.06	0.72	0.72

Total Routing Mass Balance Discrepancy is 0.97%

**SWM 2-10 YR**

Modified Puls Routing

Inflow Hydrograph: X:\DATA\1006-9-1\VT113C\SWM10-03-1\SWM2-10.IYD  
 Storage/Elevation Curve: X:\DATA\1006-9-1\VT113C\SWM10-03-1\SWM2.E3  
 Discharge/Elevation Curve: X:\DATA\1006-9-1\VT113C\SWM10-03-1\SWM2.E0

Basin Bypass Capacity = 0.0 cfs  
 Starting Pool Elevation = 135.00 feet  
 Time Interval = .0833 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.000	135.00	0.00	0.00
0.08	8.59	8.59	0.027	136.33	0.83	0.83
0.17	5.50	5.50	0.068	138.36	1.40	1.40
0.25	4.10	4.10	0.090	139.49	1.63	1.63
0.33	3.20	3.20	0.104	140.16	1.76	1.76
0.42	2.70	2.70	0.112	140.58	1.83	1.83
0.50	2.30	2.30	0.117	140.80	1.87	1.87
0.58	2.00	2.00	0.119	140.88	1.89	1.89
0.67	1.70	1.70	0.118	140.83	1.89	1.89
0.75	1.40	1.40	0.117	140.60	1.83	1.83
0.83	1.40	1.40	0.114	140.68	1.85	1.85
0.92	1.30	1.30	0.111	140.51	1.82	1.83
1.00	1.20	1.20	0.107	140.32	1.79	1.79
1.08	1.10	1.10	0.103	140.11	1.75	1.75
1.17	1.00	1.00	0.099	139.87	1.71	1.71
1.25	0.90	0.90	0.093	139.62	1.66	1.66
1.33	0.80	0.80	0.088	139.35	1.61	1.61
1.42	0.70	0.70	0.082	139.07	1.55	1.55
1.50	0.60	0.60	0.076	138.77	1.49	1.49
1.58	0.50	0.50	0.070	138.46	1.43	1.43
1.67	0.40	0.40	0.063	138.14	1.35	1.35
1.75	0.30	0.30	0.057	137.81	1.27	1.27
1.83	0.20	0.20	0.050	137.47	1.19	1.19
1.92	0.10	0.10	0.043	137.13	1.09	1.09

Total Routing Mass Balance Discrepancy is 1.14%

**SWM 3-10 YR**

Modified Puls Routing

Inflow Hydrograph: X:\DATA\1006-9-1\VT113C\SWM10-03-1\SWM3-10.IYD  
 Storage/Elevation Curve: X:\DATA\1006-9-1\VT113C\SWM10-03-1\SWM3.E3  
 Discharge/Elevation Curve: X:\DATA\1006-9-1\VT113C\SWM10-03-1\SWM3.E0

Basin Bypass Capacity = 0.0 cfs  
 Starting Pool Elevation = 137.00 feet  
 Time Interval = .0833 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.000	137.00	0.00	0.00
0.08	4.30	4.30	0.020	138.01	0.38	0.38
0.17	4.00	4.00	0.052	139.60	0.64	0.64
0.25	3.00	3.00	0.072	140.56	0.76	0.76
0.33	2.40	2.40	0.085	141.21	0.83	0.83
0.42	2.00	2.00	0.094	141.67	0.87	0.87
0.50	1.70	1.70	0.101	142.00	0.91	0.91
0.58	1.40	1.40	0.105	142.22	0.93	0.93
0.67	1.30	1.30	0.108	142.35	0.94	0.94
0.75	1.10	1.10	0.110	142.45	0.95	0.95
0.83	1.00	1.00	0.110	142.48	0.95	0.95
0.92	0.90	0.90	0.110	142.48	0.95	0.95
1.00	0.85	0.85	0.110	142.45	0.95	0.95
1.08	0.78	0.78	0.109	142.41	0.94	0.94
1.17	0.71	0.71	0.108	142.35	0.94	0.94
1.25	0.64	0.64	0.106	142.28	0.93	0.93
1.33	0.57	0.57	0.104	142.15	0.92	0.92
1.42	0.50	0.50	0.101	142.02	0.91	0.91
1.50	0.43	0.43	0.098	141.87	0.89	0.89
1.58	0.35	0.35	0.095	141.70	0.88	0.88
1.67	0.28	0.28	0.091	141.51	0.86	0.86
1.75	0.21	0.21	0.086	141.30	0.84	0.84
1.83	0.17	0.17	0.082	141.05	0.81	0.81
1.92	0.05	0.05	0.076	140.80	0.78	0.78
2.00	0.00	0.00	0.071	140.53	0.76	0.76

Total Routing Mass Balance Discrepancy is 1.25%

**NARRATIVE**  
 THESE ROUTINGS DEMONSTRATE THE ABILITY TO ACHIEVE THE REQUIRED DETENTION WITHIN THE DESIGN VAULT STORAGE.

**SWM 1-2 YR**

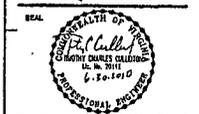
Modified Puls Routing

Inflow Hydrograph: X:\DATA\1006-9-1\VT113C\SWM10-03-1\SWM1-2.IYD  
 Storage/Elevation Curve: X:\DATA\1006-9-1\VT113C\SWM10-03-1\SWM1.E3  
 Discharge/Elevation Curve: X:\DATA\1006-9-1\VT113C\SWM10-03-1\SWM1.E0

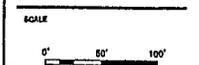
Basin Bypass Capacity = 0.0 cfs  
 Starting Pool Elevation = 148.00 feet  
 Time Interval = .0833 hours

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.000	148.00	0.00	0.00
0.08	17.70	17.70	0.057	148.99	1.19	1.19
0.17	11.40	11.40	0.145	150.54	2.15	2.15
0.25	8.50	8.50	0.198	151.45	2.56	2.56
0.33	6.70	6.70	0.232	152.04	2.79	2.79
0.42	5.60	5.60	0.254	152.45	2.99	2.99
0.50	4.80	4.80	0.270	152.70	3.03	3.03
0.58	4.20	4.20	0.280	152.87	3.08	3.08
0.67	3.60	3.60	0.285	152.97	3.12	3.12
0.75	3.20	3.20	0.287	153.00	3.12	3.12
0.83	2.90	2.90	0.286	153.09	3.13	3.13
0.92	2.70	2.70	0.284	153.05	3.11	3.11
1.00	2.40	2.40	0.280	153.09	3.09	3.09
1.08	2.20	2.20	0.275	153.00	3.06	3.06
1.17	2.00	2.00	0.269	152.68	3.02	3.02
1.25	1.80	1.80	0.261	152.55	2.97	2.97
1.33	1.60	1.60	0.253	152.40	2.92	2.92
1.42	1.40	1.40	0.245	152.23	2.86	2.86
1.50	1.20	1.20	0.235	152.05	2.79	2.79
1.58	1.00	1.00	0.221	151.85	2.72	2.72
1.67	0.80	0.80	0.209	151.64	2.63	2.63
1.75	0.60	0.60	0.196	151.41	2.54	2.54
1.83	0.40	0.40	0.182	151.17	2.44	2.44
1.92	0.10	0.10	0.167	150.92	2.33	2.33

Total Routing Mass Balance



KEY PLAN

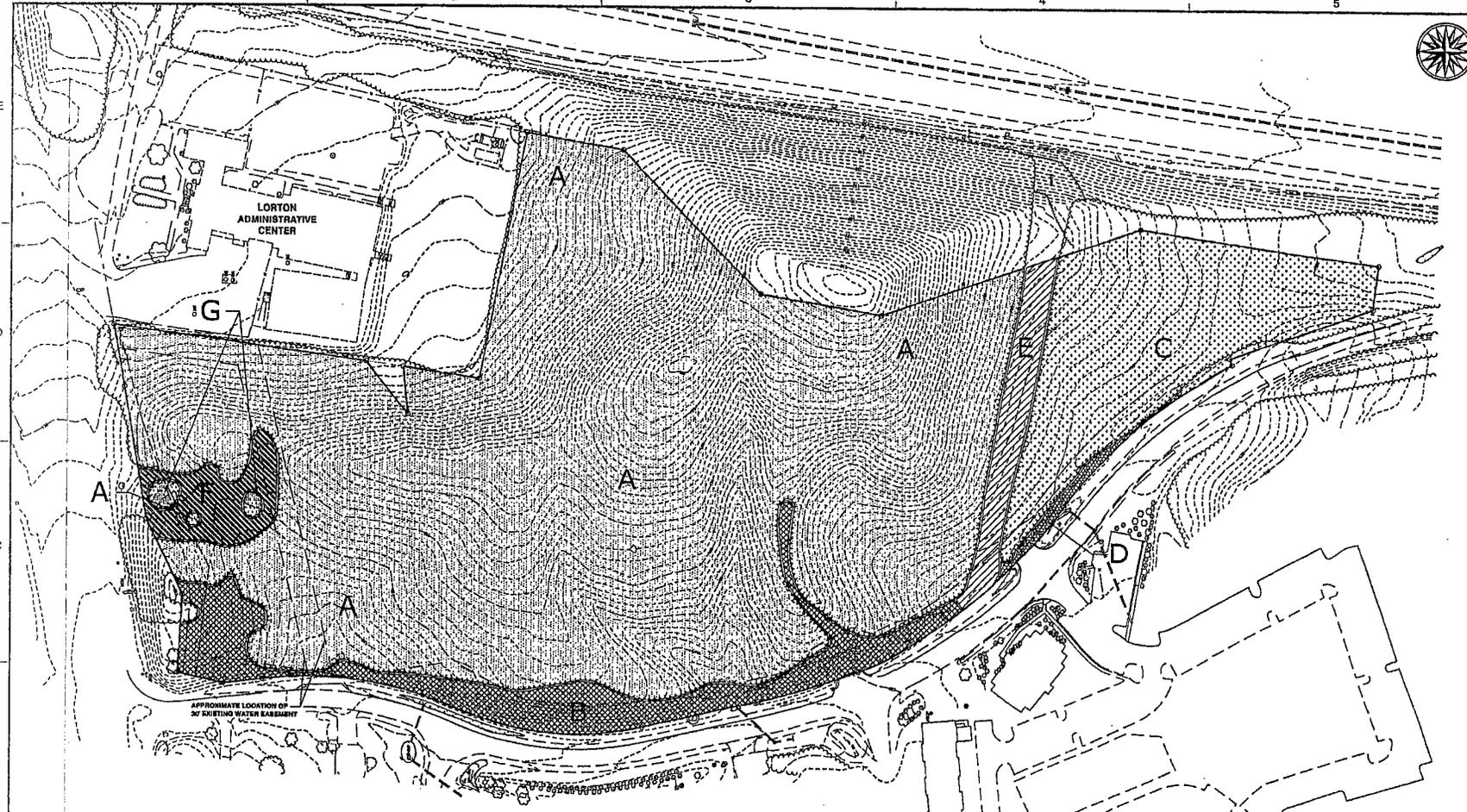


No.	DATE	BY	Description
8	08.30.10	ARC	
5	06.03.10	ARC	
4	05.19.10	ARC	
3	04.07.10	ARC	
2	03.11.10	ARC	
1	11.23.09	ARC	

DRAWN BY: ARC  
 APPROVED BY: FCY  
 CHECKED BY: FCY  
 DATE: October 20, 2009

TITLE: INOVA LORTON HEALTHPLEX Existing Vegetation Map

PROJECT NO.:



**EXISTING VEGETATION INVENTORY**

KEY	COVER TYPE	PRIMARY SPECIES	SUCCESSIONAL STAGES	CONDITION	ACREAGE	COMMENTS
	UPLAND FOREST	OAK, MAPLE	SUB-CLIMAX	FAIR	10.82± AC	WOODED AREA - SIZES RANGE FROM 12' TO 84'; FOREST COVER CONTAINS A NUMBER OF MATURE AMERICAN BEECH AND AMERICAN HOLLY
	MAINTAINED GRASSLANDS	NA	NA	NA	1.18± AC	LAWN AND LANDSCAPED WOODS
	UPLAND FOREST	PINE, YULIP, HICKORY	SUB-CLIMAX	FAIR	1.82± AC	WOODED AREA - SIZES RANGE FROM 8' SPLUNKS TO 24'
	MAINTAINED GRASSLANDS	NA	NA	NA	0.16± AC	LAWN
	MAINTAINED GRASSLANDS	NA	NA	NA	0.46± AC	CLEAN OF PLANT MATERIAL - VAPCO POWERLINE OVERHEAD
	OLD FIELD	NA	NA	NA	0.26± AC	GRASS AREA WITH SPLUNKS
	UPLAND FOREST	MAPLE	SUB-CLIMAX	NA	0.02± AC	3 MAPLE TREES, APPROXIMATELY 24' EACH
				TOTAL	14.55± AC	

**PRELIMINARY TREE PRESERVATION TARGET CALCULATION \***

A	PRE-DEVELOPMENT AREA OF EXISTING TREE CANOPY (FROM EXISTING VEGETATION MAP) =	12.48 AC
B	PERCENTAGE OF GROSS SITE AREA COVERED BY EXISTING TREE CANOPY = (12.48 AC / 14.55 AC)	86.77%
D	PERCENTAGE OF 10-YEAR TREE CANOPY REQUIRED FOR NET SITE AREA = (NET SITE AREA: 14.55 AC - 2.02 AC = 12.53 AC)	10%
D	PERCENTAGE OF THE 10-YEAR CANOPY REQUIREMENT THAT SHOULD BE MET THROUGH TREE PRESERVATION =	86.77%
E	PRELIMINARY PERCENTAGE OF CANOPY REQUIREMENT THAT MAY BE MET THROUGH TREE PRESERVATION (SEE SHEET 2 FOR REFERENCE) 112,640 SF ± = 2.28 AC / 1.26 AC	20%
F	WILL THE TREE PRESERVATION TARGET MINIMUM BE MET?	LIKELY *
G	IF AT TIME OF SITE PLAN PREPARATION IT IS CONCLUSIVELY ESTABLISHED THAT A REQUEST IS NEEDED TO DEVIATE FROM THE TREE PRESERVATION TARGET, A LETTER WILL BE FILED WITH THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS SET FORTH IN SECTS. 12-0907.3 AND 12-0907.4 OF THE PUBLIC FACILITIES MANUAL.	

\* SEE NOTE 6 ON SHEET 3