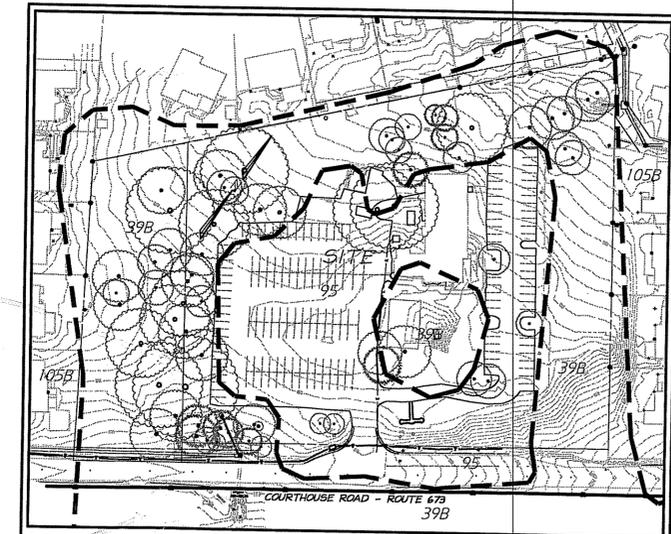
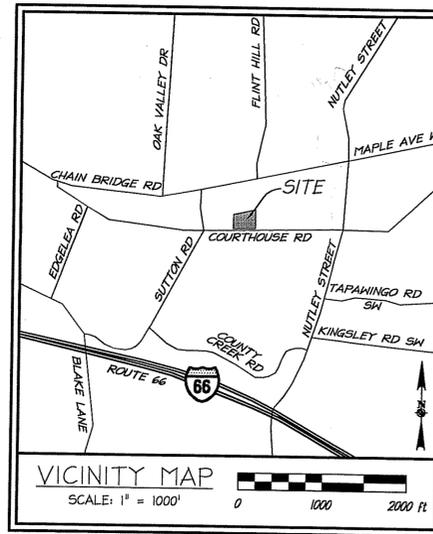


# CONCEPTUAL DEVELOPMENT PLAN FINAL DEVELOPMENT PLAN VIENNA MOOSE LODGE

DATE	REVISION
10/11/2011	COUNTY COMMENTS
3/09/2012	COUNTY COMMENTS
5/18/2012	COORDINATION COMMENTS
8/01/2012	COUNTY COMMENTS
10/12/2012	COUNTY COMMENTS
1/15/2013	COUNTY COMMENTS
3/29/2013	COUNTY COMMENTS
4/19/2013	COUNTY COMMENTS

### SHEET INDEX

1. COVER SHEET
2. NOTES & TABULATIONS
3. EXISTING CONDITIONS PLAN
4. EXISTING VEGETATION MAP
5. TREE PRESERVATION PLAN.
6. TREE PRESERVATION NOTES AND DETAILS
7. CONCEPTUAL DEVELOPMENT PLAN / FINAL DEVELOPMENT PLAN
8. SIGHT DISTANCE PROFILE
9. LANDSCAPE PLAN
10. BMP AND SWM COMPUTATIONS
11. OVERALL DRAINAGE DIVIDES MAP AND ADEQUATE OUTFALL ANALYSIS
- 12-13. ARCHITECTURAL ELEVATIONS
- 14-16. RESIDENTIAL CROSS SECTIONS
17. DETAILS



### SOILS OVERLAY INFORMATION

SOIL NUMBER, NAME, HYDROLOGIC GROUP	SOILS DESCRIPTIONS
39B, GLENELG SILT LOAM, B	This Piedmont soil occurs extensively on hilltops and slopes underlain by micaceous schist and phyllite. Silts and clays overlie silty and sandy decomposed rock. Depth to hard bedrock ranges from 5 to 100 feet. Permeability is generally adequate for all purposes. Foundation support for small buildings (three stories or less) is typically suitable. Because of a high mica content, the soil tends to "fluff" up when disturbed and is difficult to compact, requiring engineering designs for use as structural fill. This soil is suitable for septic drainfields and infiltration trenches. Glenelg is highly susceptible to erosion.
95, URBAN LAND, NA	This unit consists entirely of man-made surfaces such as pavement, concrete or rooftop. Urban land is impervious and will not infiltrate stormwater. All precipitation landing on Urban Land will be converted to runoff. Urban Land units lie atop development disturbed soils. Ratings for this unit are not provided.
105B, WHEATON - GLENELG COMPLEX, D	This complex is a mixture of the development-disturbed Wheaton soil and the natural Glenelg soil. The complex occurs in upland areas of the Piedmont with micaceous schist and phyllite bedrock that have been developed but retain a good portion of undisturbed soil. Wheaton soil will be clustered around foundations, streets, sidewalks, playing fields and other graded areas. Glenelg soil will be found under older vegetation in ungraded back and front yards and common areas. For a description of the two soils that make up this map unit, please see (102) Wheaton and (39) Glenelg.

DATE OF FIRST SUBMISSION: May 19, 2011  
 DATE OF SECOND SUBMISSION: June 23, 2011  
 DATE OF THIRD SUBMISSION: September 2, 2011  
 DATE OF FOURTH SUBMISSION: October 11, 2011  
 DATE OF FIFTH SUBMISSION: March 09, 2012  
 DATE OF SIXTH SUBMISSION: May 18, 2012  
 DATE OF SEVENTH SUBMISSION: AUG. 1, 2012  
 DATE OF EIGHTH SUBMISSION: OCT. 12, 2012  
 DATE OF NINTH SUBMISSION: FEB. 4, 2013  
 DATE OF TENTH SUBMISSION: APRIL 1, 2013  
 DATE OF ELEVENTH SUBMISSION: APRIL 19, 2013



**APPLICANT**  
**CHRISTOPHER LAND, LLC**  
 10461 WHITE GRANITE DRIVE, SUITE 103  
 OAKTON, VA 22124  
 ph: 703-352-5950

**CO-APPLICANT**  
**VIENNA LODGE NO. 1896, LOYAL ORDER OF MOOSE, INC.**  
 9616 COURTHOUSE ROAD  
 VIENNA, VA 22181

RZ 2011-PR-018

Application No. RZ/FDP 2011-PR-018 Staff Mavland  
 APPROVED DEVELOPMENT PLAN  
 (DP) (GDP) (CDD) (FDP) (PRC) (CP)

See PROFFERS Dated 6/5/2013  
 Date of (BOS) (PC) (BZA) Approval 7/9/2013  
 Sheet 1 of 17

FDP Conds Dated 4/22/2013 Date of (PC) 4/25/2013

**ZONING NOTES**

- THE SUBJECT PROPERTY IS IDENTIFIED ON FAIRFAX COUNTY ASSESSMENT MAP 48-1 ((1)), PARCELS 62 AND 64.
- THE EXISTING ZONING OF THE SUBJECT PROPERTY IS R-1 (RESIDENTIAL 1 DU/AC).
- THE TOTAL GROSS SITE AREA OF THE PROPERTY IS 249,256 SQUARE FEET OR +/- 5.72 ACRES. THE REAL ESTATE DIVISION OF THE FAIRFAX COUNTY DEPARTMENT OF TAX ADMINISTRATION LISTS THE AREA OF THIS PROPERTY WITHIN THEIR TAX RECORDS AS 5.717 ACRES.
- THE OWNER OF THE PROPERTY IS VIENNA LODGE NO. 1096, LOYAL ORDER OF MOOSE, INC.
- THE APPLICANT FOR THIS APPLICATION IS CHRISTOPHER LAND, LLC. THE CO-APPLICANT FOR THIS APPLICATION IS VIENNA LODGE NO. 1096, LOYAL ORDER OF MOOSE, INC.
- THE EXISTING PROPERTY USE IS A PRIVATE CLUB (MOOSE LODGE) WITH ASSOCIATED SURFACE PARKING. FOR THIS PROPOSED CDPTOR LAND USE APPLICATION, THE ENTIRE PROPERTY (+/- 5.72 ACRES) WILL BE REZONED TO PDH-3 (3 DWELLING UNITS PER ACRE). AS PART OF THE PDH-3 REZONING, THE EXISTING MOOSE LODGE BUILDING WILL REMAIN AS A PRIVATE CLUB WITH THE ONLY SITE CHANGES BEING SOME RELOCATED SURFACE PARKING AROUND THE EXISTING BUILDING. THE GROSS AREA FOR THE LODGE PORTION, REFERRED TO AS THE 'MOOSE LODGE LANDBAY A' FROM HERE ON IN, IS COMPRISED OF 112,581 SQUARE FEET OR +/- 2.58 ACRES. THE OTHER SECTION OF THE PROPERTY, REFERRED TO AS THE 'HOUSING LANDBAY B' FROM HERE ON IN, WILL INCLUDE 8 (EIGHT) PROPOSED SINGLE-FAMILY DETACHED DWELLING UNITS, COMPRISING NET AREA OF 136,675 SQUARE FEET OR 3.14 ACRES.
- THE BOUNDARY SURVEY IS BASED ON A FIELD SURVEY PERFORMED BY URBAN, LTD., DATED OCTOBER 14, 2010.
- TOPOGRAPHIC INFORMATION IS FROM A FIELD RUN TOPOGRAPHIC SURVEY BY URBAN, LTD, DATED OCTOBER 14, 2010. THE CONTOUR INTERVAL IS TWO (2) FEET. DATUM IS NAVD83.
- THE PROPERTY SHOWN HEREON IS LOCATED ON F.E.M.A. MAP COMMUNITY PANEL NUMBER 51069C045E DATED SEPTEMBER 17, 2010, DESIGNATED AS ZONE X, AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN.
- NO TITLE REPORT FURNISHED.
- THE SUBJECT PROPERTY IS LOCATED IN PROVIDENCE DISTRICT AND THE ACCOTINK CREEK WATERSHED OF FAIRFAX COUNTY, VA. REFER TO SHEETS 10 AND 11 FOR INFORMATION AND NARRATIVES FOR STORM WATER MANAGEMENT (SWM), BEST MANAGEMENT PRACTICES (BMP) AND STORM DRAIN OUTFALL.
- THE SUBJECT PROPERTY IS SERVED BY FAIRFAX COUNTY PUBLIC SEWER AND FAIRFAX WATER. TO THE BEST KNOWLEDGE OF THE ENGINEER AND DEVELOPER, THERE ARE NO EXISTING GRAVES OR BURIAL SITES LOCATED ON THE PROPERTY, AND THERE ARE NO KNOWN HAZARDOUS OR TOXIC SUBSTANCES ON THE PROPERTY.
- THERE IS NO EVIDENCE OF EXISTING UTILITY EASEMENTS HAVING A WIDTH OF 25 FEET OR MORE ON THE PROPERTY.
- NO ADVERSE EFFECTS TO ADJACENT NEIGHBORING PROPERTIES ARE ANTICIPATED WITH THIS PROJECT. THIS DEVELOPMENT PROPOSAL IS COMPATIBLE WITH THE EXISTING DEVELOPMENT IN THE VICINITY OF THIS SITE.
- OTHER THAN THE EXISTING VEGETATION ON SITE THERE ARE NO SCENIC ASSETS OR NATURAL FEATURES DESERVING OF PROTECTION AND PRESERVATION ON THE SUBJECT PROPERTY.
- TO THE BEST KNOWLEDGE OF THE ENGINEER AND DEVELOPER, THIS CONCEPTUAL DEVELOPMENT PLAN/FINAL DEVELOPMENT PLAN CONFORMS TO ALL APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED STANDARDS, INCLUDING THE ADOPTED COMPREHENSIVE PLAN FOR THE COUNTY, UNLESS OTHERWISE SPECIFICALLY NOTED.
- THE COUNTYWIDE TRAILS PLAN DOES NOT REQUIRE ANY PLANNED TRAILS ALONG THIS PROPERTY.
- THE PUBLIC IMPROVEMENTS ANTICIPATED WITH THIS PROJECT INCLUDED WITH A SWIMBMP POND ON SITE AND NEW CURB AND GUTTER ALONG NORTHERN SIDE OF COURTHOUSE ROAD AS SHOWN ON SHEET 7 OF THIS PLAN SET.
- THE ON-SITE AMENITIES PROVIDED WITH THIS PLAN INCLUDE A TRAIL AND PAVILION AS SHOWN ON SHEET 7 OF THIS PLAN SET.
- NOTWITHSTANDING THE IMPROVEMENTS AND TABULATIONS SHOWN ON THIS PLAN, THE APPLICANT RESERVES THE RIGHT TO MAKE MODIFICATIONS TO THE FINAL DESIGN TO COMPLY WITH FINAL ENGINEERING AND NEW CRITERIA AND REGULATIONS WHICH MAY BE ADOPTED BY FAIRFAX COUNTY SUBSEQUENT TO THE SUBMISSION OF THIS APPLICATION, PROVIDED THAT SUCH MODIFICATIONS ARE CONSISTENT WITH THE APPROVED CONCEPTUAL DEVELOPMENT PLAN/FINAL DEVELOPMENT PLAN.
- THE BUILDING FOOTPRINT AND SITE IMPROVEMENTS SHOWN HEREIN ARE PRELIMINARY. FINAL BUILDING FOOTPRINT AND SITE IMPROVEMENTS WILL BE CONFIGURED AT THE TIME OF SITE PLAN APPROVAL, SUBJECT TO MARKET CONDITIONS, BUT SHALL BE IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED CONCEPTUAL DEVELOPMENT PLAN/FINAL DEVELOPMENT PLAN.
- THE LIMITS OF CLEARING AND GRADING ARE SHOWN ON PLAN SHEET 7 OF THIS SET. THE FINAL BUILDING LOCATION AND FOOTPRINT WILL ADHERE TO THESE LIMITS OF CLEARING AND GRADING.
- ARCHITECTURAL ELEVATIONS INCLUDED WITH THIS APPLICATION ARE CONCEPTUAL ILLUSTRATIONS ONLY, INTENDED TO SHOW THE GENERAL INTENT AND CHARACTER OF THE PROPOSED DEVELOPMENT.
- CONSTRUCTION OF THE PROPOSED DEVELOPMENT WILL COMMENCE AS SOON AS NECESSARY APPROVALS ARE OBTAINED, SUBJECT TO MARKET CONDITIONS AND DISCRETION OF THE OWNER. PROPOSED SIGNAGE WILL CONFORM TO ARTICLE 12 OF THE ZONING ORDINANCE.

**WAIVERS AND MODIFICATIONS**

- A MODIFICATION IS BEING REQUESTED FOR THE 35 FEET TRANSITIONAL SCREENING REQUIREMENT (ZONING ORDINANCE 13-308.3.B.) BETWEEN A PRIVATE CLUB USE (EXISTING MOOSE LODGE) AND THE 8 PROPOSED SINGLE FAMILY DETACHED UNITS IN THE CENTER OF THE PROPERTY. AS PER ZONING ORDINANCE SECTION 13-305.2, IN ORDER TO PRESERVE MORE TREES ALONG THE WESTERN BOUNDARY OF THE PROPERTY AND THE ADJACENT NEIGHBORS PROPERTIES, THE PROPOSED HOUSING DEVELOPMENT SHIFTED EASTWARD TOWARDS LANDBAY A. THIS, IN COMBINATION WITH THE RELOCATION OF SOME OF THE EXISTING EXISTING PARKING ON SITE TO REASONABLY ACCOMMODATE THE PARKING REQUIREMENTS FOR THE MOOSE LODGE, THERE IS REDUCED AREA BETWEEN THE TWO USES AT THE CENTER AT THE PROPERTY, AND THEREFORE THE NEED TO MODIFY THE WIDTH OF THE TRANSITIONAL SCREENING REQUIRED. THE TRANSITIONAL SCREENING BETWEEN THE TWO USES WILL CONSIST OF A 13 FOOT PLANTED TRANSITIONAL SCREENING BUFFER. THE 7 FOOT HIGH BRICK WALL REQUIRED WILL BE LOCATED BETWEEN THE REAR YARD AND THE PARKING LOT FOR THE MOOSE LODGE AT 5 FOOT OFF THE EDGE OF THE PARKING LOT.
- A MODIFICATION IS BEING REQUESTED FOR THE TRANSITIONAL SCREENING 2 AND BARRIER REQUIREMENTS ALONG THE EASTERN PROPERTY BOUNDARY BETWEEN A PRIVATE CLUB USE (THE MOOSE LODGE) AND THE ADJACENT EXISTING SINGLE FAMILY DETACHED HOUSES (ZONING ORDINANCE 13-308.3.B.) SINCE WE ARE PRESERVING EXISTING FOREST THAT CONSISTS MOSTLY OF DECIDUOUS TREES. WE ARE UNABLE TO PROVIDE THE REQUIRED AMOUNT OF EVERGREEN TREES AND SHRUBS. WE ARE PROVIDING SUPPLEMENTAL EVERGREEN PLANTINGS IN FOREST OPENINGS WHERE EXISTING TREE ROOTS WOULD NOT BE COMPROMISED ALONG THE PARKING LOT TO FULFILL THE BUFFER INTENT. A MODIFICATION OF THE BARRIER REQUIREMENT IS BEING REQUESTED IN THE SOUTHERN PORTION OF THE EASTERN TRANSITIONAL SCREENING 2 BUFFER IN ORDER TO AVOID DISTURBING EXISTING TREES TO BE PRESERVED. THE PROPOSED 6' WOOD SCREENING FENCE IS LOCATED ALONG THE EASTERN EDGE OF THE REBUILT PARKING LOT ON LANDBAY A (THE MOOSE LODGE) TO FULFILL THE BARRIER INTENT.
- A WAIVER IS BEING REQUESTED FOR PROVIDING A SIDEWALK ALONG THE NORTH SIDE OF COURTHOUSE ROAD (EAST OF THE PROPERTY ENTRANCE) ADJACENT TO THE SUBJECT PROPERTY LINE (ZONING ORDINANCE 17-201.1 AND 17-201.2 AND PUBLIC FACILITIES MANUAL 8-1010).
- A MODIFICATION IS BEING REQUESTED FOR THE TRANSITIONAL SCREENING REQUIREMENT ALONG THE COMMON PROPERTY LINE FOR LANDBAY A AND LANDBAY B IN THE NORTHEAST AREA OF THE SITE (ZONING ORDINANCE 13-308.B.). SINCE THE SWIMBMP POND AND PROPOSED UTILITY LINES ARE LOCATED IN THIS AREA, WHICH IS REQUIRED AS PART OF THIS DEVELOPMENT, THERE IS NOT ADEQUATE SPACE FOR A BUFFER NOR IS THERE A NEED FOR A BUFFER SINCE NO UNITS ARE PROPOSED IN THIS PORTION OF PARCEL B. HOWEVER, THE ADJACENT HOMES TO THE NORTH OF THIS PROPERTY ARE A LOCATED A GOOD DISTANCE FROM THIS COMMON LANDBAY LINE. THE EXISTING FENCE AND THE PROPOSED FENCE ALONG THE PARKING LOT AND PLANTINGS SHOULD MINIMIZE ANY POTENTIAL IMPACT CONCERNS (ZONING ORDINANCE SECTION 13-305.3).

DATE	REVISION
9/02/2011	COUNTY COMMENTS
10/11/2011	COUNTY COMMENTS
3/09/2012	COUNTY COMMENTS
5/18/2012	COORDINATION REVISIONS
8/01/2012	COUNTY COMMENTS
10/12/2012	COUNTY COMMENTS
1/15/2013	COUNTY COMMENTS
3/29/2013	COUNTY COMMENTS
4/19/2013	COUNTY COMMENTS

**ZONING TABULATION**

TOTAL GROSS SITE AREA OF SUBJECT PROPERTY: 249,256 SQUARE FEET OR +/- 5.72 ACRES  
 TOTAL AREA OF SUBJECT PROPERTY TO BE REZONED TO PDH-3: 249,256 SQUARE FEET OR +/- 5.72 ACRES  
 TOTAL GROSS SITE AREA OF PDH-3 MOOSE LODGE LANDBAY A: 112,581 SQUARE FEET OR +/- 2.58 ACRES  
 TOTAL GROSS SITE AREA OF PDH-3 HOUSING LANDBAY B: 136,675 SQUARE FEET OR +/- 3.14 ACRES  
 STREET DEDICATION ALONG OLD COURTHOUSE ROAD OF PDH-3 HOUSING LANDBAY B: 2,855 SQUARE FEET OR +/- 0.06 ACRES  
 NET SITE AREA OF PDH-3 HOUSING LANDBAY B: 133,820 SQUARE FEET OR +/- 3.07 ACRES

**PDH-3 ZONING REGULATION REQUIREMENTS**

**LOT SIZE REQUIREMENTS:**  
 MINIMUM DISTRICT SIZE: 2 ACRES OR LARGER  
 MINIMUM LOT AREA: NO REQUIREMENT FOR SINGLE FAMILY DETACHED  
 MINIMUM LOT WIDTH: NO REQUIREMENT

**MAXIMUM DENSITY:** 3 DU/AC  
**OPEN SPACE:** 20% OF THE GROSS AREA  
**TREE COVER:** 25% OF THE GROSS SITE AREA

**BULK REGULATION REQUIREMENTS:**  
 THE MAXIMUM BUILDING HEIGHT, MINIMUM YARD REQUIREMENTS AND MAXIMUM FLOOR AREA RATIO SHALL BE CONTROLLED BY STANDARDS IN PART I, ARTICLE 16. SPECIFICALLY, AT ALL PERIPHERAL BOUNDARIES OF PDH-3, THE BULK REGULATIONS AND LANDSCAPING AND SCREENING PROVISIONS SHALL GENERALLY CONFORM TO THOSE OF THE CONVENTIONAL R-3 DISTRICT.

**CONVENTIONAL R-3 DISTRICT**  
 MAXIMUM BUILDING HEIGHT: 35 FEET (SINGLE FAMILY DWELLINGS)  
 MINIMUM YARD REQUIREMENTS: 30 FEET FRONT YARD  
 12 FEET SIDE YARD  
 25 FEET REAR YARD

**PDH-3 PROPOSED OVERALL DEVELOPMENT TABULATIONS**

FOR TOTAL AREA OF SUBJECT PROPERTY: 249,256 SF OR +/- 5.72 AC  
 EXISTING MOOSE LODGE BUILDING TO REMAIN WITH PARKING RELOCATED AND 8 SINGLE-FAMILY DETACHED DWELLING UNITS

DEVELOPMENT STANDARDS	DEVELOPMENT TABULATIONS
DISTRICT SIZE	249,256 SF (+/- 5.72 AC)
MAXIMUM BUILDING HEIGHT	MOOSE LODGE: EXISTING ONE STORY HOUSING: 35'
MINIMUM SETBACKS AT PERIPHERAL BOUNDARIES OF PDH-3 DISTRICT	25 FEET, UNLESS OTHERWISE NOTED ON PLAN SHEET 7
MAXIMUM GROSS FLOOR AREA (GFA) MAXIMUM FLOOR AREA RATIO (FAR)	MOOSE LODGE: 7,155 SF 7,155 SF / 249,256 SF = 0.03 FAR
DENSITY	HOUSING: 8 UNITS / +/- 5.72 AC = +/- 1.40 DU/AC
OPEN SPACE	+/- 108,023 SF (+/- 43 %)
TREE COVER	+/- 90,542 SF (+/- 36 %)
INTERIOR PARKING LOT LANDSCAPING	+/- 2,025 SF (+/- 5 %)

**PARKING AND LOADING TABULATIONS  
MOOSE LODGE**

**PARKING SPACES REQUIRED:** 1 SPACE PER 3 MEMBERS BASED ON MAXIMUM ANTICIPATED MEMBERSHIP  
 NUMBER OF ACTIVE MEMBERS: 360  
 TOTAL PARKING SPACES REQUIRED: 120

**PARKING SPACES PROVIDED:** 120 (INCLUDES 5 ACCESSIBLE SPACES)

**LOADING SPACES REQUIRED:** PRIVATE CLUB USE NOT LISTED IN SECTION II-203 OF ZONING ORDINANCE, BUT USE SIMILAR TO 'STANDARD B' WHICH REQUIRES 1 SPACE FOR THE FIRST 10,000 SF OF GFA PLUS 1 SPACE FOR EACH ADDITIONAL 15,000 SF OF GFA  
 TOTAL LOADING SPACES REQUIRED: 1

**LOADING SPACES PROVIDED:** 1

**PARKING AND LOADING TABULATIONS  
HOUSING**

**PARKING SPACES REQUIRED:** 3 SPACES PER UNIT PER LOTS WITH FRONTAGE ON A PRIVATE STREET, PROVIDED THAT ONLY 1 SUCH SPACE MUST HAVE CONVENIENT ACCESS TO A STREET  
 TOTAL PARKING SPACES REQUIRED: 24

**PARKING SPACES PROVIDED:** 32 (2 DRIVEWAY AND 2 GARAGE SPACES PER UNIT) ALSO INCLUDES 4 DESIGNATED SPACES ON PRIVATE STREET  
 TOTAL PARKING SPACES PROVIDED: 36

**PDH-3 PROPOSED MOOSE LODGE LANDBAY A DEVELOPMENT TABULATIONS**

FOR TOTAL AREA OF PDH-3 MOOSE LODGE LANDBAY A: 112,581 SF OR +/- 2.58 AC  
 EXISTING MOOSE LODGE BUILDING TO REMAIN WITH PARKING RELOCATED

DEVELOPMENT STANDARDS	DEVELOPMENT TABULATIONS
DISTRICT SIZE	112,581 SF (+/- 2.58 AC)
MAXIMUM BUILDING HEIGHT	ONE STORY (EXISTING BUILDING)
MINIMUM SETBACKS AT PERIPHERAL BOUNDARIES OF PDH-3 DISTRICT	25 FEET, UNLESS OTHERWISE NOTED ON PLAN SHEET 7
MAXIMUM GROSS FLOOR AREA (GFA) MAXIMUM FLOOR AREA RATIO (FAR)	7,155 SF (EXISTING BUILDING) 7,155 SF / 112,581 SF = 0.06 FAR
OPEN SPACE	+/- 64,438 SF (+/- 57 %)
TREE COVER	+/- 49,852 SF (+/- 44 %)
INTERIOR PARKING LOT LANDSCAPING	+/- 2,025 SF (+/- 5 %)

**PARKING AND LOADING TABULATIONS**

**PARKING SPACES REQUIRED:** 1 SPACE PER 3 MEMBERS BASED ON MAXIMUM ANTICIPATED MEMBERSHIP  
 NUMBER OF CURRENT MEMBERS: 360  
 TOTAL PARKING SPACES REQUIRED: 120

**PARKING SPACES PROVIDED:** 120 (INCLUDES 5 ACCESSIBLE SPACES)

**LOADING SPACES REQUIRED:** PRIVATE CLUB USE NOT LISTED IN SECTION II-203 OF ZONING ORDINANCE, BUT USE SIMILAR TO 'STANDARD B' WHICH REQUIRES 1 SPACE FOR THE FIRST 10,000 SF OF GFA PLUS 1 SPACE FOR EACH ADDITIONAL 15,000 SF OF GFA  
 TOTAL LOADING SPACES REQUIRED: 1

**LOADING SPACES PROVIDED:** 1

**PDH-3 PROPOSED HOUSING LANDBAY B DEVELOPMENT TABULATIONS**

FOR GROSS SITE AREA OF PDH-3 HOUSING LANDBAY B: 136,675 SF OR +/- 3.14 AC  
 STREET DEDICATION ALONG OLD COURTHOUSE ROAD: 2,855 SF OR +/- 0.06 AC  
 NET SITE AREA: 136,675 SF OR +/- 3.14 AC  
 FOR 8 SINGLE-FAMILY DETACHED DWELLING UNITS

DEVELOPMENT STANDARDS	DEVELOPMENT TABULATIONS
DISTRICT SIZE	136,675 SF (+/- 3.14 AC)
MAXIMUM BUILDING HEIGHT	35'
MINIMUM SETBACKS AT PERIPHERAL BOUNDARIES OF PDH-3 DISTRICT	25 FEET, UNLESS OTHERWISE NOTED ON PLAN SHEET 7
DENSITY	8 UNITS / +/- 3.14 AC = +/- 2.55 DU/AC
OPEN SPACE	+/- 43,585 SF (+/- 32 %)
TREE COVER	+/- 40,690 SF (+/- 30 %)

LOT	AREA (SF)
LOT 1	11,388 SF
LOT 2	8,807 SF
LOT 3	8,647 SF
LOT 4	13,995 SF
LOT 5	13,402 SF
LOT 6	8,466 SF
LOT 7	7,212 SF
LOT 8	7,212 SF
HOA PARCELS	57,541 SF

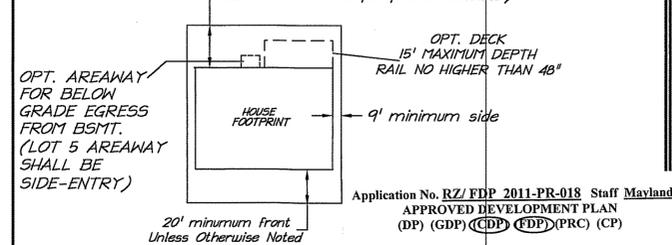
**PARKING AND LOADING TABULATIONS**

**PARKING SPACES REQUIRED:** 3 SPACES PER UNIT FOR LOTS WITH FRONTAGE ON A PRIVATE STREET, PROVIDED THAT ONLY 1 SUCH SPACE MUST HAVE CONVENIENT ACCESS TO A STREET  
 TOTAL PARKING SPACES REQUIRED: 24

**PARKING SPACES PROVIDED:** 32 (2 DRIVEWAY AND 2 GARAGE SPACES PER UNIT) ALSO INCLUDES 4 DESIGNATED SPACES ON PRIVATE STREET  
 TOTAL PARKING SPACES PROVIDED: 36

**TYPICAL RESIDENTIAL LOT LAYOUT**

\*\* REFER TO PROFFERS FOR DETAILS FOR EACH RESIDENTIAL LOT



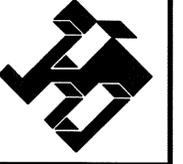
Application No. RZ/FDP 2011-PR-018 Staff Mayland  
 APPROVED DEVELOPMENT PLAN  
 (DP) (GDP) (GDP) (FDP) (PRC) (CP)

See PROFFERS Dated 6/5/2013  
 Date of (BOS) (PC) (BZA) Approval 7/9/2013  
 Sheet 2 of 17

FDP Conds Dated 4/22/2013. Date of (PC) 4/25/2013

**christopher consultants**  
 engineering · surveying · land planning

9900 main street (fourth floor) Fairfax va. 22031-3907  
 703.273.6920 fax 703.273.7656



COMMONWEALTH OF VIRGINIA  
 JOHN C. LEVTOV  
 Lic. No. 33635  
 4/13/13  
 PROFESSIONAL ENGINEER

**NOTES & TABULATIONS**

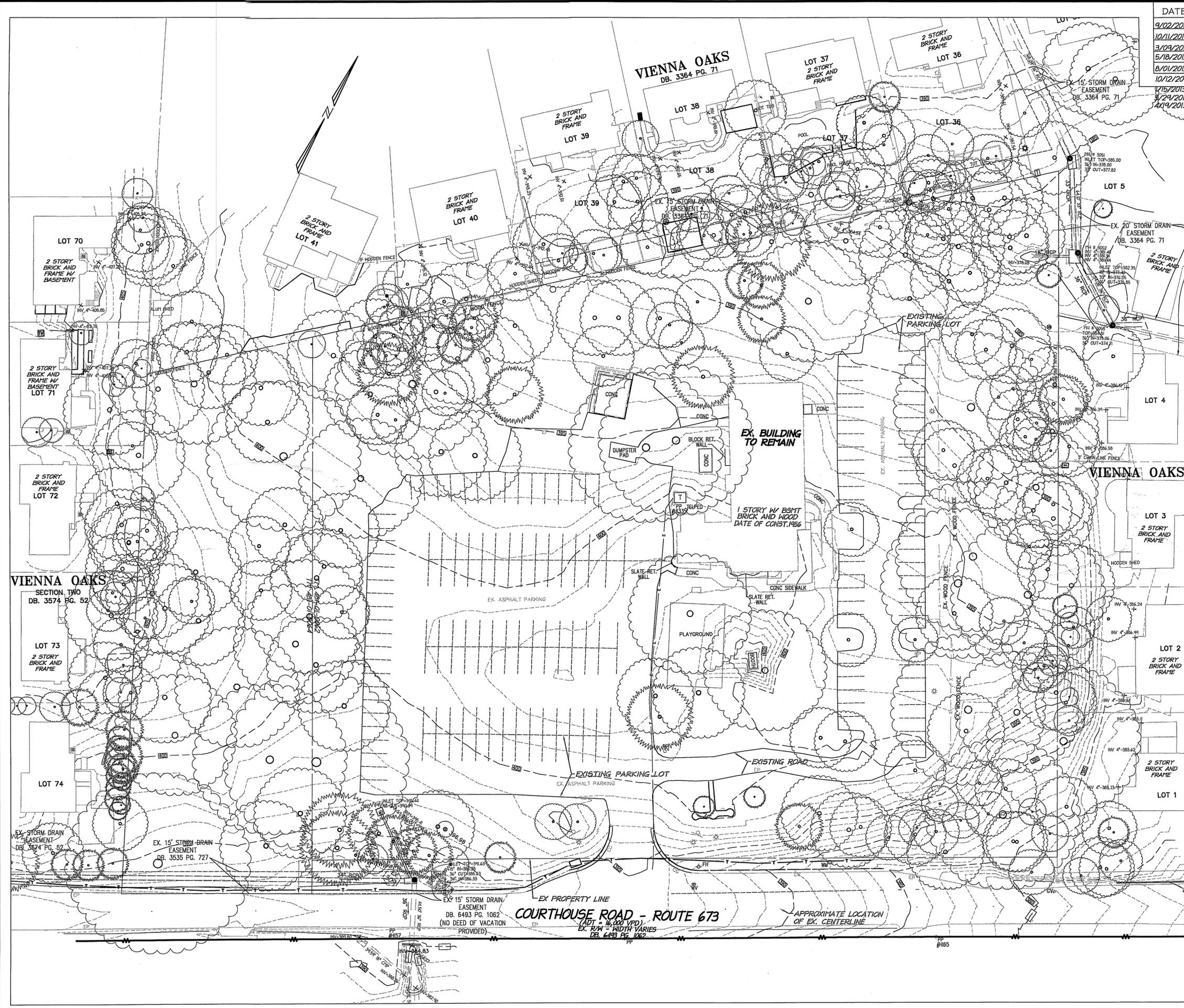
**CONCEPTUAL DEVELOPMENT PLAN  
FINAL DEVELOPMENT PLAN  
VIENNA MOOSE LODGE  
FAIRFAX COUNTY, VIRGINIA**

PROJECT NO:	11-21-01
SCALE:	AS SHOWN
DATE:	04-19-2013
DESIGN:	JL/JR
DRAWN:	JR
CHECKED:	
SHEET No.	

DATE	REVISION
9/22/2011	COUNTY COMMENTS
10/11/2011	COUNTY COMMENTS
3/09/2012	COUNTY COMMENTS
5/18/2012	COORDINATION REVISIONS
8/01/2012	COUNTY COMMENTS
10/12/2012	COUNTY COMMENTS
12/15/2013	COUNTY COMMENTS
3/24/2013	COUNTY COMMENTS
4/19/2013	COUNTY COMMENTS

**LEGEND**

- x - EXISTING FENCE
- - - EXISTING CONTOUR
- == == EXISTING CURB & GUTTER
- == == EXISTING STORM DRAIN PIPE
- - - EXISTING SANITARY PIPE
- ○ EXISTING TREES



**christopher consultants**  
 engineering · surveying · land planning  
 9500 main street (fourth floor) Fairfax, VA 22031-9907  
 703.273.6620 fax 703.723.7656

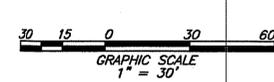


COMMONWEALTH OF VIRGINIA  
 JOHN C. LEVTOV  
 Lic. No. 33635  
 4/13/13  
 PROFESSIONAL ENGINEER

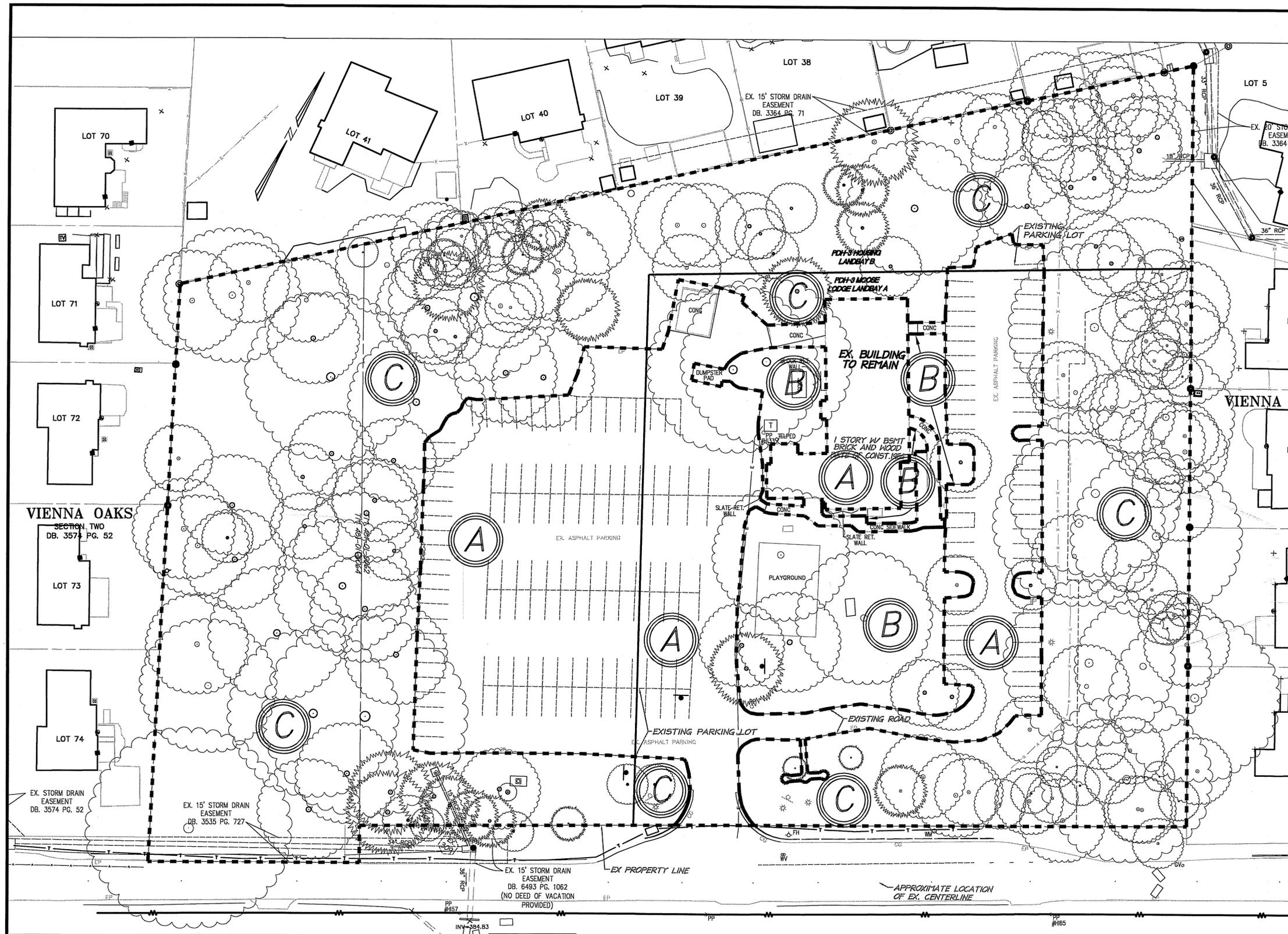
EXISTING CONDITIONS

CONCEPTUAL DEVELOPMENT PLAN  
 FINAL DEVELOPMENT PLAN  
**VIENNA MOOSE LODGE**  
 FAIRFAX COUNTY, VIRGINIA

PROJECT No. 11-21-01  
 SCALE: 1"=30'  
 DATE: 04-19-2013  
 DESIGN: J/M  
 DRAWN: J/M  
 CHECKED:  
 SHEET No. **3** OF **17**  
 C-6016



Application No. RZ/FDP 2011-PR-018 Staff Mavland  
 APPROVED DEVELOPMENT PLAN  
 (DP) (GDP) (CDD) (FDP) (PRC) (CP)  
 See PROFFERS Dated 6/5/2013  
 Date of (BOS) (PC) (BZA) Approval 7/9/2013  
 Sheet 3 of 17  
 FDP Conds Dated 4/22/2013 Date of (PC) 4/25/2013



DATE	REVISION
9/02/2011	COUNTY COMMENTS
10/11/2011	COUNTY COMMENTS
3/09/2012	COUNTY COMMENTS
5/18/2012	COORDINATION REVISIONS
8/01/2012	COUNTY COMMENTS
10/12/2012	COUNTY COMMENTS
1/15/2013	COUNTY COMMENTS
3/29/2013	COUNTY COMMENTS
4/19/2013	COUNTY COMMENTS

**LEGEND**

- X - EXISTING FENCE
- - - EXISTING CONTOUR
- ==== EXISTING CURB & GUTTER
- EXISTING STORM DRAIN PIPE
- - - EXISTING SANITARY PIPE
- EXISTING TREES
- (A) LIMITS OF EVM DESIGNATION

TOTAL AREA OF SUBJECT PROPERTY	249,256 SF	± 5.72 AC
PDH-3 MOOSE LODGE LANDBAY A	12,581 SF	± 2.58 AC
PDH-3 HOUSING LANDBAY B	36,675 SF	± 3.14 AC

**TREE PRESERVATION TARGET CALCULATIONS AND STATEMENT FOR PDH-3 OVERALL AREA OF SUBJECT PROPERTY**

A) PRE-DEVELOPMENT AREA OF EXISTING ON-SITE TREE CANOPY =	±169,762 SF
B) PERCENTAGE OF GROSS SITE AREA COVERED BY EXISTING TREE CANOPY =	±68 %
C) PERCENTAGE OF 10-YEAR TREE CANOPY REQUIRED FOR SITE = (25% OF GROSS SITE AREA)	62,314 SF
D) PERCENTAGE OF THE 10-YEAR TREE CANOPY REQUIREMENT THAT SHOULD BE MET THROUGH TREE PRESERVATION (68% OF 62,314 SF) =	42,374 SF
E) PROPOSED CANOPY REQUIREMENT THAT WILL BE MET THROUGH TREE PRESERVATION =	79,392 SF

**TREE PRESERVATION TARGET CALCULATIONS AND STATEMENT FOR PDH-3 MOOSE LODGE LANDBAY A**

A) PRE-DEVELOPMENT AREA OF EXISTING ON-SITE TREE CANOPY =	±70,446 SF
B) PERCENTAGE OF GROSS SITE AREA COVERED BY EXISTING TREE CANOPY =	±63 %
C) PERCENTAGE OF 10-YEAR TREE CANOPY REQUIRED FOR SITE = (25% OF GROSS SITE AREA)	28,145 SF
D) PERCENTAGE OF THE 10-YEAR TREE CANOPY REQUIREMENT THAT SHOULD BE MET THROUGH TREE PRESERVATION (63% OF 28,145 SF) =	17,732 SF
E) PROPOSED CANOPY REQUIREMENT THAT WILL BE MET THROUGH TREE PRESERVATION =	42,952 SF

**TREE PRESERVATION TARGET CALCULATIONS AND STATEMENT FOR PDH-3 HOUSING LANDBAY B**

A) PRE-DEVELOPMENT AREA OF EXISTING ON-SITE TREE CANOPY =	±99,314 SF
B) PERCENTAGE OF GROSS SITE AREA COVERED BY EXISTING TREE CANOPY =	±73 %
C) PERCENTAGE OF 10-YEAR TREE CANOPY REQUIRED FOR SITE = (25% OF GROSS SITE AREA)	34,169 SF
D) PERCENTAGE OF THE 10-YEAR TREE CANOPY REQUIREMENT THAT SHOULD BE MET THROUGH TREE PRESERVATION (73% OF 34,169 SF) =	24,944 SF
E) PROPOSED CANOPY REQUIREMENT THAT WILL BE MET THROUGH TREE PRESERVATION =	36,440 SF

NOTE: PROPOSED TREE PRESERVATION IS SHOWN GRAPHICALLY ON SHEETS 5 & 10 OF THIS PLAN SET.

**EVM DESIGNATION COVER TYPE SUMMARY TABLE FOR PDH-3 MOOSE LODGE LANDBAY A**

AREA	COVER TYPE	PRIMARY TREE SPECIES	SUCCESSIONAL STAGE	ACREAGE	DESCRIPTION
A	DEVELOPED LAND	PIN OAK, RED MAPLE, AMERICAN ELM AND WHITE PINE	MATURE	+/- 1.05	LODGE & PARKING AREA WITH MATURE TREES IN GOOD HEALTH.
B	MAINTAINED GRASSLANDS	WHITE OAK, AMERICAN BEECH, AND EASTERN HEMLOCK	MATURE	+/- 0.46	MOWED LAWN AREA AT ENTRANCE WITH GOOD HEALTH TREES.
C	UPLAND FOREST	TULIP POPLAR, WHITE OAK, WHITE PINE, AMERICAN BEECH, RED MAPLE AND AMERICAN ELM	MATURE	+/- 1.05	MIX OF DECIDUOUS AND EVERGREEN TREES ALONG PROPERTY BOUNDARY WITH GOOD HEALTH.
TOTAL SITE ACREAGE: +/- 2.58 ACRES					

**EVM DESIGNATION COVER TYPE SUMMARY TABLE FOR PDH-3 HOUSING LANDBAY B**

AREA	COVER TYPE	PRIMARY TREE SPECIES	SUCCESSIONAL STAGE	ACREAGE	DESCRIPTION
A	DEVELOPED LAND	BREADFORD PEAR, AMERICAN ELM, RED MAPLE AND WHITE OAK	MATURE	+/- 0.71	PARKING AREA WITH MATURE TREES IN GOOD HEALTH.
C	UPLAND FOREST	TULIP POPLAR, RED MAPLE, WHITE OAK, AND AMERICAN BEECH	MATURE	+/- 2.43	MIX OF DECIDUOUS AND EVERGREEN TREES ALONG PROPERTY BOUNDARY WITH GOOD HEALTH.
TOTAL SITE ACREAGE: +/- 3.14 ACRES					

**christopher consultants**  
 engineering · surveying · land planning  
 9800 main street (fourth floor) Fairfax va. 22031-3807  
 703.273.6920 fax 703.273.7636



COMMONWEALTH OF VIRGINIA  
 JOHN C. LEVTOV  
 Lic. No. 33635  
 4/19/13  
 PROFESSIONAL ENGINEER

EXISTING VEGETATION MAP

CONCEPTUAL DEVELOPMENT PLAN  
 FINAL DEVELOPMENT PLAN  
**VIENNA MOOSE LODGE**  
 FAIRFAX COUNTY, VIRGINIA

PROJECT No: 11-21-01  
 SCALE: 1"=30'  
 DATE: 04-19-2013  
 DESIGN: JMT  
 DRAWN: JMT  
 CHECKED:  
 SHEET No.

Application No. RZ/ FDF 2011-PR-018 Staff Mayland  
 APPROVED DEVELOPMENT PLAN  
 (DP) (GDP) (CDD) (FDP) (PRC) (CP)  
 See PROFFERS Dated 6/5/2013  
 Date of (BOS) (PC) (BZA) Approval 7/9/2013  
 Sheet 4 of 17  
 FDP Conds Dated 4/22/2013. Date of (PC) 4/25/2013

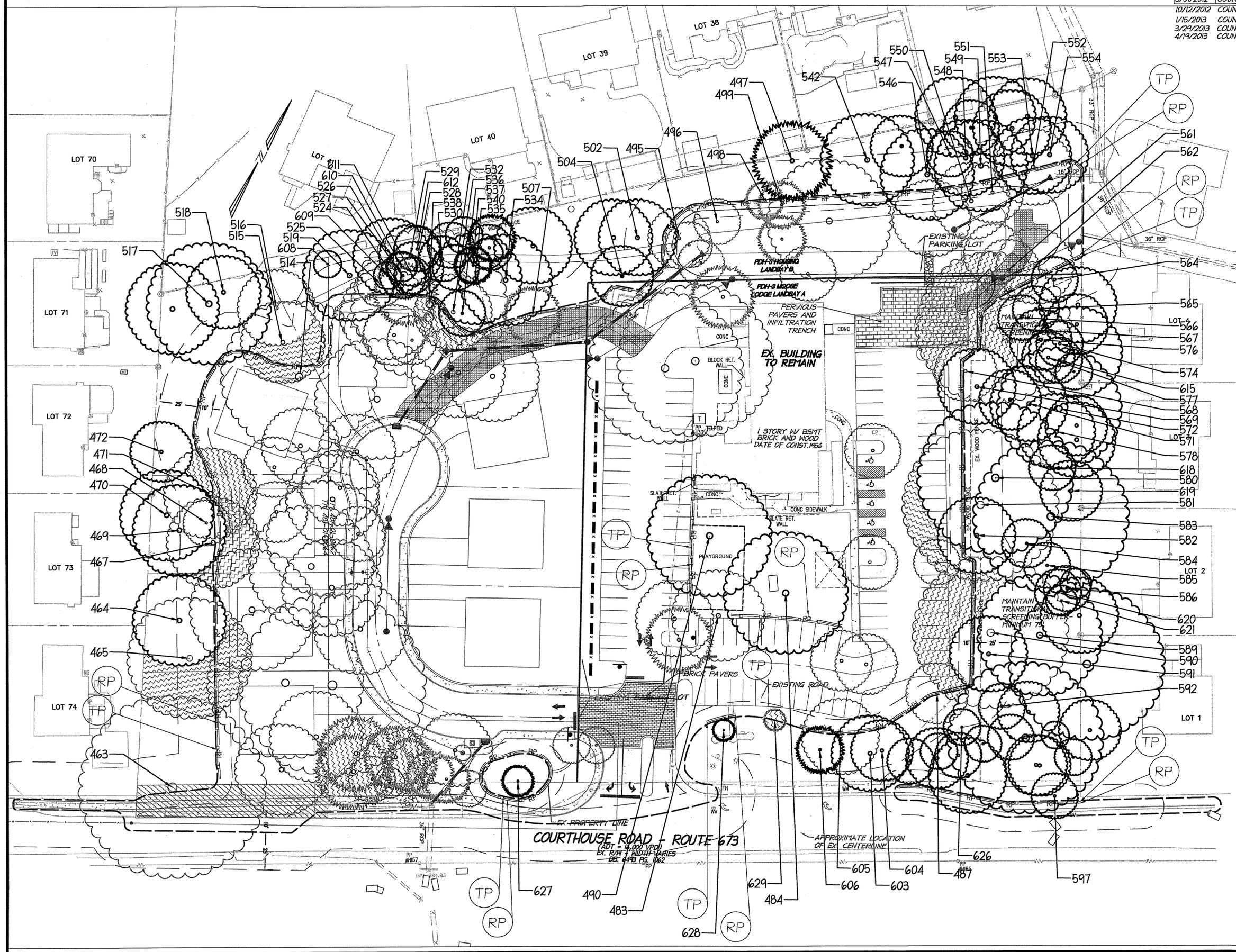
DATE	REVISION
9/02/2011	COUNTY COMMENTS
10/11/2011	COUNTY COMMENTS
3/09/2012	COUNTY COMMENTS
5/18/2012	COORDINATION REVISIONS
8/01/2012	COUNTY COMMENTS
10/12/2012	COUNTY COMMENTS
1/15/2013	COUNTY COMMENTS
3/29/2013	COUNTY COMMENTS
4/19/2013	COUNTY COMMENTS

**LEGEND**

- X- EXISTING FENCE
- - - EXISTING CONTOUR
- ==== EXISTING CURB & GUTTER
- ==== EXISTING STORM DRAIN PIPE
- EXISTING SANITARY PIPE
- EXISTING TREES TO BE REMOVED
- EXISTING TREES TO REMAIN
- - - PROPOSED LIMITS CLEARING AND GRADING
- TREE PROTECTION FENCE (TP)
- ROOT PRUNING (RP)
- TREE TO BE SAVED IF POSSIBLE. NO PRESERVATION CREDIT TAKEN. SEE NOTE 2 BELOW.

**NOTE:**

- SEE SHEET 6 FOR TREE PRESERVATION NOTES & DETAILS AND FOR TREE PRESERVATION CHART.
- TREE TO BE SAVED IF POSSIBLE. PROJECT ARBORIST SHALL IN ACCORDANCE WITH THE PROFFERS EVALUATE AT THE TIME OF CLEARING AND DURING CONSTRUCTION WHAT MEASURES SHALL BE UTILIZED TO PROTECT.
- THE USE OF EQUIPMENT IN THE TREE PRESERVATION AREAS FOR BOTH INSTALLATIONS AND REMOVALS SHALL BE LIMITED TO HAND OPERATED EQUIPMENT SUCH AS CHAINSAWS, WHEEL BARROWS, RAKES AND SHOVELS. ANY WORK THAT REQUIRES THE USE OF MOTORIZED EQUIPMENT SHALL NOT OCCUR UNLESS PRE-APPROVED BY UFMD.



**christopher consultants**  
 engineering · surveying · land planning  
 9800 main street (fourth floor) · Fairfax, VA · 22031-3907  
 703.273.6620 · fax 703.273.7636

COMMONWEALTH OF VIRGINIA  
 JOHN C. LEVTOV  
 Lic. No. 33635  
 4/19/13  
 PROFESSIONAL ENGINEER

**TREE PRESERVATION PLAN**

**CONCEPTUAL DEVELOPMENT PLAN  
 FINAL DEVELOPMENT PLAN  
 VIENNA MOOSE LODGE  
 FAIRFAX COUNTY, VIRGINIA**

PROJECT NO:	11-21-01
SCALE:	1"=30'
DATE:	04-19-2013
DESIGN:	JM
DRAWN:	JM
CHECKED:	
SHEET No.	5 of 17

Application No. RZ/FDP 2011-PR-018 Staff Mayland  
 APPROVED DEVELOPMENT PLAN  
 (DP) (GDP) (CDP) (FDP) (PRC) (CP)  
 See PROFFERS Dated 6/5/2013  
 Date of (BOS) (PC) (BZA) Approval 7/9/2013  
 Sheet 5 of 17  
 FDP Conds Dated 4/22/2013 Date of (PC) 4/25/2013

P:\Projects\11-21-01\11-21-01-Tree Preservation C-6016.dwg, 4/22/2013 11:02:39 AM, jshahanev, 11, christopher consultants, ltr

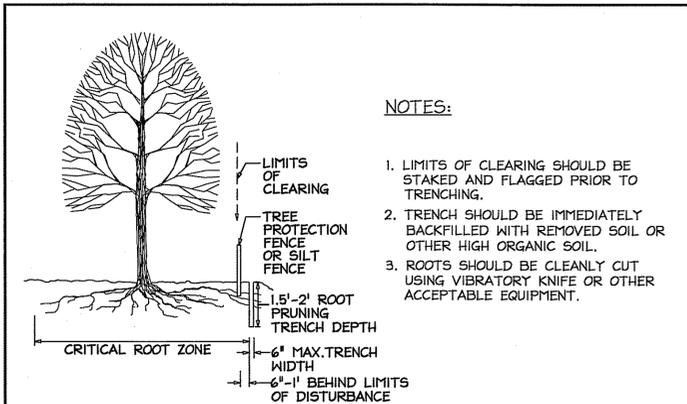
**TREE PRESERVATION SCHEDULE**

TREE#	BOTANICAL NAME	COMMON NAME	CROWN RADIUS (FEET)	ISA CONDITION RATING	TRUNK DIAMETER (INCHES)	PRES. STATUS (*)	COMMENTS
463	ULMUS AMERICANA	AMERICAN ELM	60	68.75	24	R	
464	QUERCUS RUBRA	RED OAK	30	87.5	28	S	
465	QUERCUS ALBA	WHITE OAK	40	84.38	30	SIP	croched trunks at 19 from ground level
467	LIRIODENDRON TULPIFERA	TULIP POPLAR	30	93.75	30	SIP	
468	ACER RUBRUM	RED MAPLE	15	81.25	15	S	
469	LIRIODENDRON TULPIFERA	TULIP POPLAR	30	93.75	26	S	
470	LIRIODENDRON TULPIFERA	TULIP POPLAR	30	93.75	30	S	
471	LIRIODENDRON TULPIFERA	TULIP POPLAR	30	84.38	36	SIP	
472	LIRIODENDRON TULPIFERA	TULIP POPLAR	20	75	27	S	
483	FAGUS GRANDIFOLIA	AMERICAN BEECH	30	93.75	26	R	exposed roots
484	QUERCUS ALBA	WHITE OAK	40	93.75	30	S	
487	ACER RUBRUM	RED MAPLE	20	87.5	20	R	parking lot tree
490	QUERCUS ALBA	WHITE OAK	40	84.38	44	S	
495	QUERCUS RUBRA	RED OAK	20	81.25	24	R	
496	FAGUS GRANDIFOLIA	AMERICAN BEECH	15	81.25	13	R	snagged top
497	PINUS STROBUS	WHITE PINE	25	81.25	23	S	
498	PINUS STROBUS	WHITE PINE	12	81.25	12	R	
499	PINUS STROBUS	WHITE PINE	15	62.5	12	R	croch in trunk at 10' from ground
502	ULMUS AMERICANA	AMERICAN ELM	25	90.63	20	S	
504	FAGUS GRANDIFOLIA	AMERICAN BEECH	20	90.63	18	S	
507	PINUS STROBUS	WHITE PINE	18	84.38	14	R	
514	QUERCUS ALBA	WHITE OAK	50	84.38	42	R	poison ivy, broken lower scaffold branches
515	ACER RUBRUM	RED MAPLE	27	90.63	24	SIP	
516	LIRIODENDRON TULPIFERA	TULIP POPLAR	25	21.88	40	R	hollow trunk from roots up
517	LIRIODENDRON TULPIFERA	TULIP POPLAR	40	81.25	38	S	
518	LIRIODENDRON TULPIFERA	TULIP POPLAR	24	90.63	24	S	
519	LIRIODENDRON TULPIFERA	TULIP POPLAR	30	96.88	24	S	poison ivy
524	PINUS STROBUS	WHITE PINE	20	62.5	20	R	no scaffold branches, top heavy, poison ivy
525	LIRIODENDRON TULPIFERA	TULIP POPLAR	15	18.75	14	R	dead tree
526	LIRIODENDRON TULPIFERA	TULIP POPLAR	25	90.63	24	S	poison ivy
527	LIRIODENDRON TULPIFERA	TULIP POPLAR	15	93.75	12	S	
528	LIRIODENDRON TULPIFERA	TULIP POPLAR	18	90.63	16	S	
529	LIRIODENDRON TULPIFERA	TULIP POPLAR	20	78.13	18	S	
530	LIRIODENDRON TULPIFERA	TULIP POPLAR	15	78.13	12	S	bark peeled on lower trunk
532	LIRIODENDRON TULPIFERA	TULIP POPLAR	15	87.5	18	S	
534	LIRIODENDRON TULPIFERA	TULIP POPLAR	30	87.5	25	S	some dead branches, good tree growth
535	LIRIODENDRON TULPIFERA	TULIP POPLAR	30	87.5	21	S	
536	LIRIODENDRON TULPIFERA	TULIP POPLAR	25	81.25	18	SIP	
537	ACER RUBRUM	RED MAPLE	15	84.38	13	S	
538	LIRIODENDRON TULPIFERA	TULIP POPLAR	50	81.25	34	R	
540	PINUS STROBUS	WHITE PINE	12	25	12	S	no scaffold branches, long and skinny
542	FAGUS GRANDIFOLIA	AMERICAN BEECH	30	96.88	26	SIP	croch 12' up; near offsite storm work
546	FAGUS GRANDIFOLIA	AMERICAN BEECH	30	96.88	21	S	croch 10' up
547	LIRIODENDRON TULPIFERA	TULIP POPLAR	15	78.13	12	S	no scaffold branches
548	LIRIODENDRON TULPIFERA	TULIP POPLAR	25	90.63	22	S	healed cut in trunk 3' long
549	ACER RUBRUM	RED MAPLE	30	90.63	32	S	2 trunks joined
550	ULMUS AMERICANA	AMERICAN ELM	25	59.38	16	R	
551	ACER RUBRUM	RED MAPLE	20	71.88	15	R	2 trunks separate
552	ACER RUBRUM	RED MAPLE	25	78.13	18	R	leaning over swale
553	ACER RUBRUM	RED MAPLE	25	84.38	13	S	lean a bit
554	ULMUS AMERICANA	AMERICAN ELM	25	84.38	24	S	
561	LIRIODENDRON TULPIFERA	TULIP POPLAR	20	90.63	19	R	
562	ULMUS AMERICANA	AMERICAN ELM	25	65.63	24	R	bark peeling off near base, not healthy
564	LIRIODENDRON TULPIFERA	TULIP POPLAR	15	75	12	S	
565	LIRIODENDRON TULPIFERA	TULIP POPLAR	15	84.38	17	S	
566	LIRIODENDRON TULPIFERA	TULIP POPLAR	15	84.38	14	S	
567	QUERCUS ALBA	WHITE OAK	50	71.88	36	SIP	
568	LIRIODENDRON TULPIFERA	TULIP POPLAR	20	78.13	18	R	
569	LIRIODENDRON TULPIFERA	TULIP POPLAR	25	81.25	24	S	
571	QUERCUS ALBA	WHITE OAK	25	75	23	S	
572	QUERCUS ALBA	WHITE OAK	40	78.13	36	S	dead branches
574	LIRIODENDRON TULPIFERA	TULIP POPLAR	15	81.25	12	S	
576	QUERCUS ALBA	WHITE OAK	20	71.88	30	S	
577	LIRIODENDRON TULPIFERA	TULIP POPLAR	17	87.5	14	S	
578	ACER RUBRUM	RED MAPLE	25	81.25	12	S	leaning
580	QUERCUS ALBA	WHITE OAK	50	71.88	42	S	
581	LIRIODENDRON TULPIFERA	TULIP POPLAR	50	81.25	48	SIP	
582	PRUNUS SEROTINA	BLACK CHERRY	25	71.88	12	S	ivy on tree trunk
583	QUERCUS ALBA	WHITE OAK	50	87.5	32	S	
584	ACER RUBRUM	RED MAPLE	16	71.88	14	S	ivy on tree trunk
585	LIRIODENDRON TULPIFERA	TULIP POPLAR	15	78.13	16	S	
586	LIRIODENDRON TULPIFERA	TULIP POPLAR	15	87.5	18	S	
589	LIRIODENDRON TULPIFERA	TULIP POPLAR	40	81.25	34	S	ivy on tree trunk
590	QUERCUS ALBA	WHITE OAK	50	78.13	42	SIP	ivy on tree trunk
591	QUERCUS ALBA	WHITE OAK	25	71.88	24	S	ivy on tree trunk
592	ACER RUBRUM	RED MAPLE	15	75	13	S	ivy on tree trunk
597	CARYA OVEALIS	SWEET PIGNUT HICKORY	15	75	15	S	poison ivy
603	AILANTHUS ALTISSIMA	TREE OF HEAVEN	25	71.88	12	S	ivy on tree trunk
604	LIRIODENDRON TULPIFERA	TULIP POPLAR	20	84.38	18	S	
605	PRUNUS SEROTINA	BLACK CHERRY	25	90.63	15	R	exposed roots, double trunk
606	PINUS VIRGINIANA	VIRGINIA PINE	15	71.88	12	S	
608	ILEX OPACA	AMERICAN HOLLY	9	90.63	7	S	
609	LIRIODENDRON TULPIFERA	TULIP POPLAR	9	93.75	7	S	
610	FAGUS GRANDIFOLIA	AMERICAN BEECH	10	93.75	8	S	low scaffold branch, croched trunk at 4'
611	LIRIODENDRON TULPIFERA	TULIP POPLAR	12	71.88	9	S	closed seam in lower trunk
612	LIRIODENDRON TULPIFERA	TULIP POPLAR	15	87.5	11	S	twist in trunk at 30 from ground
615	ACER RUBRUM	RED MAPLE	15	71.88	7	S	
618	LIRIODENDRON TULPIFERA	TULIP POPLAR	15	75	9	S	
619	ACER RUBRUM	RED MAPLE	20	75	7	S	some dead branches
620	LIRIODENDRON TULPIFERA	TULIP POPLAR	15	81.25	9	S	ivy
621	LIRIODENDRON TULPIFERA	TULIP POPLAR	10	90.63	8	S	
626	LIRIODENDRON TULPIFERA	TULIP POPLAR	12	87.5	7	S	
627	ILEX OPACA	AMERICAN HOLLY	10	90.63	10	S	
628	PICEA ABIES	NORWAY SPRUCE	7	87.5	6	S	
629	PICEA ABIES	NORWAY SPRUCE	7	84.38	7	SIP	

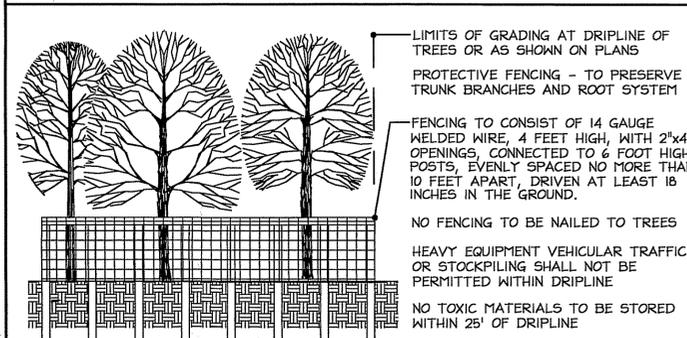
\* PRESERVATION STATUS:

- R = REMOVE
- S = SAVE
- SIP = SAVE IF POSSIBLE

(TREE TO BE SAVED IF POSSIBLE. PROJECT ARBORIST SHALL EVALUATE AT THE TIME OF CLEARING AND DURING CONSTRUCTION WHAT MEASURES SHALL BE UTILIZED TO PROTECT)



(1) ROOT PRUNING



(2) TREE PROTECTION FENCING

**TREE PROTECTION AREA-  
DO NOT ENTER  
OFF LIMITS TO CONSTRUCTION  
EQUIPMENT, MATERIALS AND WORKERS**

**ÁREA DE PROTECCIÓN DE  
ÁRBOLES-NO ENTRAR  
PROHIBIDO EL INGRESO DE EQUIPO,  
MATERIALES Y EMPLEADOS DE CONSTRUCCIÓN**

1. BILINGUAL SIGNS SHALL BE POSTED AND MAINTAINED AT THE LIMITS OF CLEARING AT A MINIMUM OF 50-FOOT INTERVALS.
2. SIGNS SHALL BE POSTED THROUGHOUT ALL PHASES OF CONSTRUCTION
3. SIGNS SHALL BE ATTACHED TO THE TREE PROTECTION FENCING AND SHALL NOT BE NAILED OR IN ANY MANNER ATTACHED TO THE TREES OF VEGETATION TO BE PRESERVED.

**TREE PROTECTION FENCING SIGNAGE**

CRITICAL ROOT ZONE WAS DETERMINED BY USING THIS FORMULA:  
1 FOOT OF CRITICAL ROOT ZONE RADIUS  
FOR EACH  
1 INCH OF TRUNK DIAMETER

**GENERAL NOTES:**

1. IN LIEU OF MORE STRENUOUS SPECIFICATIONS, ALL LANDSCAPE RELATED WORK SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE CURRENT AND MOST UP-TO-DATE EDITION (AT TIME OF CONSTRUCTION) OF 'LANDSCAPE SPECIFICATION GUIDELINES' AS PRODUCED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF MARYLAND, DISTRICT OF COLUMBIA AND VIRGINIA, GAITHERSBURG, MARYLAND.
2. CONTRACTOR IS RESPONSIBLE FOR CONTACTING MISS UTILITY PRIOR TO BEGINNING ANY WORK.
3. ALL WORK PERFORMED SHALL MEET OR EXCEED THE MOST RECENT INDUSTRY STANDARDS, AS PUBLISHED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA), AMERICAN NATIONAL ARBORIST ASSOCIATION (NAA). IN THE EVENT CULTURAL TREATMENTS PRESCRIBED ARE NOT COVERED BY AN EXISTING STANDARD, ALL WORK PERFORMED SHALL MEET OR EXCEED STANDARDS APPROVED BY THE URBAN FORESTRY MANAGEMENT DIVISION.
4. ALL CONSTRUCTION ACTIVITY BEYOND THE LIMITS OF CLEARING AND GRADING SHOWN ON THE SITE PLAN AND THE TREE PRESERVATION PLAN SHALL BE PROHIBITED UNLESS PREVIOUSLY APPROVED BY THE URBAN FORESTRY BRANCH.
5. THE REQUIREMENTS OF THE FAIRFAX COUNTY PUBLIC FACILITIES MANUAL, ARTICLE 12, VEGETATION PRESERVATION AND PLANTING, SHALL BE FOLLOWED.

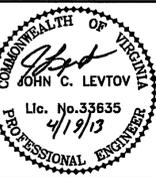
**TREE PRESERVATION NARRATIVE**

1. CLEARING LIMITS SHALL BE CLEARLY MARKED IN THE FIELD WITH FLAGGING PRIOR TO BEGINNING OF ANY CLEARING AND GRADING OPERATIONS AND COORDINATED WITH THE URBAN FORESTRY DIVISION.
2. ALL FENCING AND ROOT PRUNING SHALL BE COMPLETE PRIOR TO ANY CLEARING AND GRADING OPERATIONS.
3. TREE PROTECTION FENCING MATERIAL SHALL BE FOUR (4) FOOT TALL WOOD, PLASTIC, CORD OR WIRE ATTACHED TO SIX (6) FOOT, TWO-INCH (2") STEEL U-CHANNEL ANCHOR POSTS DRIVEN EIGHTEEN (18) INCHES INTO THE GROUND AT A MAXIMUM SIX (6) FOOT SPACING OR EQUIVALENT APPROVED BY THE URBAN FORESTRY DIVISION. FENCING SHALL BE INSTALLED AT THE LIMITS OF CLEARING AND GRADING AS ADJUSTED PRIOR TO ANY CLEARING AND GRADING OPERATIONS.
4. ROOT PRUNING SHALL BE COMPLETED AT THE LIMITS OF DISTURBANCE AS SHOWN ON TREE PRESERVATION PLAN PRIOR TO CONSTRUCTION. ROOT PRUNING SHALL BE TO THE DEPTH OF EIGHTEEN (18) TO TWENTY-FOUR (24) INCHES AND SHALL BE ACCOMPLISHED BY USING A TRENCHER, VIBRATING PLOW OR BY HAND. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH REMOVED SOIL.
5. BILINGUAL SIGNS SHALL BE INSTALLED EVERY THIRTY (30) FEET ON FENCING WHICH INDICATE "TREE PRESERVATION AREA - KEEP OUT".
6. WHEN EXCAVATING ALL TREE ROOTS GREATER THAN 1 INCH IN DIAMETER THAT ARE EXPOSED AND/OR DAMAGED SHALL BE TRIMMED CLEANLY, AND COVERED WITH ORGANIC MULCH, TOPSOIL, OR OTHER SUITABLE MATERIAL TO PREVENT THE EXPOSED ROOTS FROM DRYING OUT.
7. DURING CLEARING AND GRADING OPERATIONS AND THROUGHOUT CONSTRUCTION, NO ACTIVITY SHALL BE PERMITTED IN TREE SAVE AREAS WITHOUT AUTHORIZATION FROM OWNER, ARBORIST/FORESTER, AND URBAN FORESTRY DIVISION. PRECLUDED ACTIVITIES INCLUDE:
  - \* FELLING OF TREES INTO PRESERVATION AREAS OR OPERATION OF HEAVY MACHINERY IN SAVE AREAS TO FELL TREES ON THE PERIMETER OF PRESERVATION AREAS.
  - \* OPERATION OF HEAVY EQUIPMENT OR MACHINERY OF ANY KIND IN PRESERVATION AREAS FOR ANY PURPOSE INCLUDING REMOVAL OF TREES ADJACENT TO SAVE AREAS.
  - \* PLACEMENT OF EXCESS SOIL, FILL, OR MATERIALS OF ANY KIND IN PRESERVATION AREAS.
  - \* PLACEMENT OF ANY CONSTRUCTION MATERIALS OF ANY KIND IN PRESERVATION AREAS.
  - \* PARKING OR STORING EQUIPMENT OR VEHICLES IN PRESERVATION AREAS.
  - \* DUMPING CHEMICALS OR CONCRETE WASHOUT IN PRESERVATION AREAS.
  - \* BURNING OF ANY MATERIAL OR DEBRIS IN PRESERVATION AREAS OR WITHIN 200 FEET OF PRESERVATION AREAS.
  - \* TRENCHING, GRADING, EXCAVATING FOR ANY PURPOSE IN PRESERVATION AREAS.
  - \* INSTALLATION OF LANDSCAPING, IRRIGATION, TURF, DRAINAGE SYSTEMS, ETC.
8. DEAD TREES IF MARKED ON PLAN SHALL BE REMOVED. ALL EXISTING TRASH AND/OR DEBRIS ON SITE SHALL BE REMOVED AT THE TIME OF DISTURBANCE. INDIVIDUAL TREES AND FORESTED AREAS DESIGNATED TO BE PRESERVED SHALL BE PROTECTED AND MANAGED THAT ENSURES TREE SURVIVAL DURING ALL PHASES OF DEMOLITION, CLEARING AND GRADING, AND CONSTRUCTION. IN ADDITION TO PROTECTING TREES, ALL UNDERSTORY PLANTS, LEAF LITTER AND SOIL CONDITIONS FOUND IN FORESTED AREAS DESIGNATED TO BE LEFT PRESERVED SHALL BE PROTECTED.
9. TREES TO REMAIN LOCATED ALONG THE LIMITS OF CLEARING SHALL BE PRUNED DURING CLEARING OPERATIONS TO AVOID MECHANICAL DAMAGE. THIS SHOULD BE ADMINSTRATED UNDER THE SUPERVISION OF THE PROJECT ARBORIST. ANY DAMAGE INFLICTED TO THE ABOVE OR BELOW-GROUND PORTIONS OF THE TREES SHOWN TO BE PRESERVED SHALL BE REPAIRED IMMEDIATELY.
10. ALL PRUNING SHALL CONFORM TO ANSI A300-2001 PRUNING STANDARDS. DISEASED LIMBS SHALL BE REMOVED OR TREATED AT THE DISCRETION OF THE ARBORIST. WHILE PRUNING, THE ARBORIST SHALL MAKE NOTE OF ANY CONDITIONS WHICH AFFECT THE HEALTH OR CONDITION OF THE TREE AND RECOMMEND CORRECTIVE TREATMENT FOR THESE CONDITIONS. VINE REMOVAL SHALL BE INCLUDED IN ALL PRUNING ACTIVITIES. UNDER NO CIRCUMSTANCES SHALL THE INTERIOR OF TREES BE STRIPPED OF FOLIAGE, SUCKERS, EPICORMIC BRANCHING, OR OTHER LIVE GROWTH. INTERIOR GROWTH MAY BE THINNED AS NECESSARY TO REMOVE BRANCHES DAMAGED DURING OPERATIONS. DEBRIS FROM PRUNING SHALL BE CHIPPED AND DEPOSITED INTO THE TREE SAVE AREA AND SPREAD BY HAND TO A UNIFORM THICKNESS OR BE REMOVED FROM SITE.
11. TREES BEING REMOVED SHALL NOT BE FELLED, PUSHED OR PULLED INTO TREE PRESERVATION AREAS. EQUIPMENT OPERATORS SHALL NOT CLEAN ANY PART OF THEIR EQUIPMENT BY SLAMMING AGAINST THE TRUNKS OF TREES TO BE RETAINED.
12. TREES ON THE EDGE OF THE LIMITS OF CLEARING SHALL BE CUT DOWN BY HAND WITH A CHAIN SAW. REMAINING STUMPS SHALL EITHER BE LEFT IN PLACE OR GROUND DOWN WITH A STUMP GRINDER.
13. PROJECT ARBORIST SHALL MONITOR THE CONSTRUCTION AND TREE PRESERVATION ACTIVITIES TO ENSURE PLAN IMPLEMENTATION.
14. ALL ACTIVITIES IN TREE PRESERVATION ACTIVITY SCHEDULE SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF CERTIFIED ARBORIST.

Application No. RZ/FDP 2011-PR-018 Staff Mayland  
APPROVED DEVELOPMENT PLAN  
(DP) (GDP) (CDD) (FDP) (PRC) (CP)  
See PROFFERS Dated 6/5/2013  
Date of (BOS) (PC) (BZA) Approval 7/9/2013  
Sheet 6 of 17  
FDP Conds Dated 4/22/2013. Date of (PC) 4/25/2013

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT  
FAIRFAX COUNTY AND VIRGINIA DEPARTMENT OF  
TRANSPORTATION STANDARDS AND SPECIFICATIONS

**christopher consultants**  
engineering · surveying · land planning  
9900 main street (fourth floor) Fairfax Va. 22031-3907  
703.273.6620 fax: 703.273.7636



**TREE PRESERVATION  
NOTES & DETAILS**

**CONCEPTUAL DEVELOPMENT PLAN  
FINAL DEVELOPMENT PLAN**

**VIENNA MOOSE LODGE**

FAIRFAX COUNTY, VIRGINIA

PROJECT No. II-21-01

SCALE: AS NOTED

DATE: 04-19-2013

DESIGN: JY  
DRAWN: JY  
CHECKED:

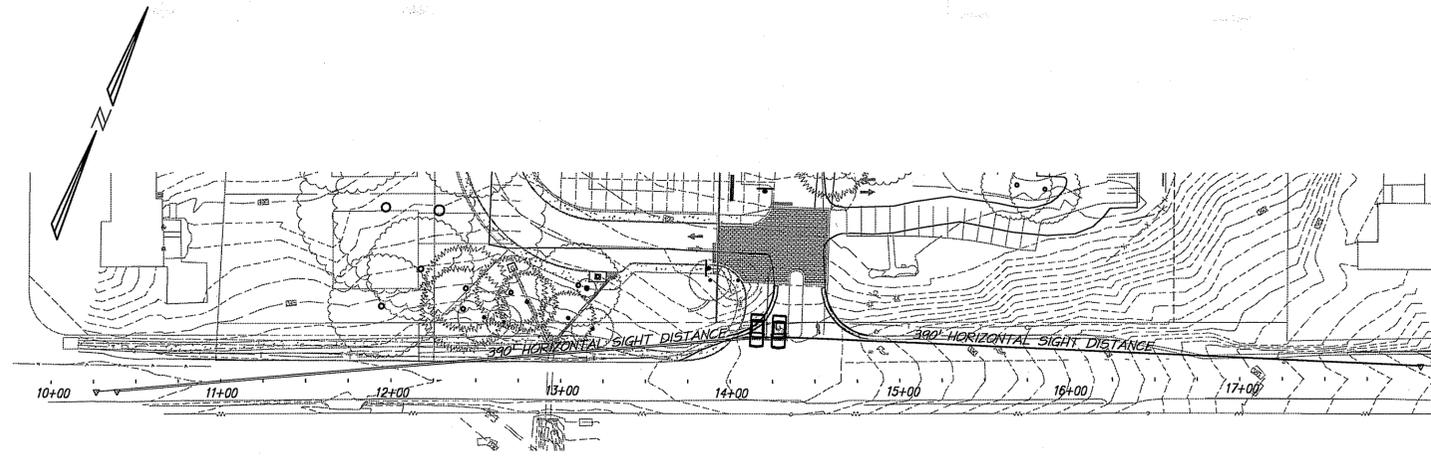
SHEET No.

6 of 17

C-6016

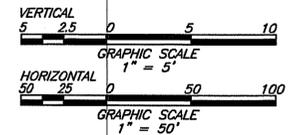


DATE	REVISION
9/02/2011	COUNTY COMMENTS
10/11/2011	COUNTY COMMENTS
3/09/2012	COUNTY COMMENTS
5/16/2012	COORDINATION REVISIONS
8/01/2012	COUNTY COMMENTS
10/12/2012	COUNTY COMMENTS
1/15/2013	COUNTY COMMENTS
4/19/2013	COUNTY COMMENTS

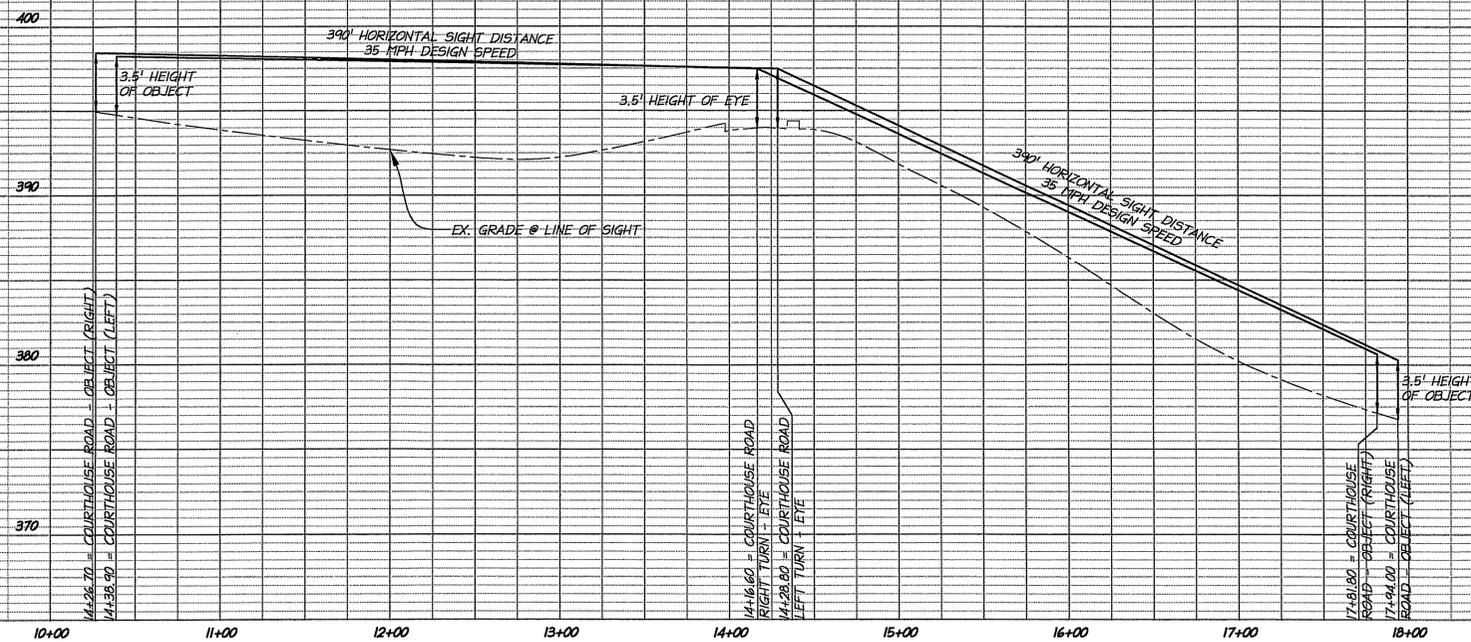


POSTED SPEED= 30 MPH  
DESIGN SPEED= 35 MPH

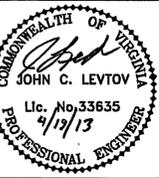
AADT= 16,000 VPD



LINE OF SIGHT AT COURTHOUSE ROAD ENTRANCE



**christopher consultants**  
engineering · surveying · land planning  
9900 main street (fourth floor) · fairfax va. 22031-3907  
703.273.6620 · fax 703.273.7636



SIGHT DISTANCE  
PROFILE

CONCEPTUAL DEVELOPMENT PLAN  
FINAL DEVELOPMENT PLAN  
**VIENNA MOOSE LODGE**  
FAIRFAX COUNTY, VIRGINIA

PROJECT NO: 11-21-01  
SCALE:  
HORIZ.: 1"=50'  
VERT.: 1"=5'  
DATE: 04-19-2013  
DESIGN: EG  
DRAWN: EG  
CHECKED:  
SHEET No.

Application No. RZ/FDP 2011-PR-018 Staff Mayland  
APPROVED DEVELOPMENT PLAN  
(DP) (GDP) (CDP) (FDP) (PRC) (CP)  
See PROFFERS Dated 6/5/2013  
Date of (BOS) (PC) (BZA) Approval 7/9/2013  
Sheet 8 of 17  
FDP Conds Dated 4/22/2013 Date of (PC) 4/25/2013

P:\Projects\11-21-01-C-6016-Sight Distance Profile-C-6016.dwg 4/22/2013 11:03:12 AM jshelton, li, christopher consultants, llc

FDH-3 Overall Subject Property Area	FDH-3 Housing Landray B	FDH-3 Moose Lodge Landray A
GROSS SITE AREA: 249,256 SF = 5.72 AC NET SITE AREA:	136,676 SF = 3.14 AC 133,820 SF = 3.07 AC	112,581 SF = 2.58 AC
OPEN SPACE REQUIREMENT (20%): 49,851 SF OPEN SPACE PROVIDED (34.6%): 106,023 SF	(20%): 26,764 SF (34.6%): 46,586 SF	(20%): 22,516 SF (34.6%): 64,488 SF
PARKING LOT AREA: 138,390 SF INTERIOR PARKING LOT TREE COVER REQUIRED: (5%): 1,920 SF INTERIOR PARKING LOT TREE COVER PROVIDED: (15%): 2,025 SF	N/A	138,390 SF (5%): 1,920 SF (15%): 2,025 SF
35' WIDE TRANSITIONAL SCREENING 2 BUFFER AT THE EAST PROPERTY. LENGTH AND WIDTH OF TRANSITIONAL YARD AREA REQUIRED: 340' x 35'. LENGTH AND WIDTH OF TRANSITIONAL YARD AREA PROVIDED: 340' x 35' TO 75'. MIXTURE OF EVERGREEN TREES MIN 70% AND DECIDUOUS TREES MAX 30% REQUIRED. MIXTURE OF EVERGREEN TREES 12% AND DECIDUOUS TREES 100% PROVIDED.	N/A	340' x 35' (788 8,925 SF) 340' x 35' TO 75' (1,768 18,925 SF) 70% EVERGREEN AND 30% DECIDUOUS TREES 12% EVERGREEN AND 100% PRESERVED DECIDUOUS TREES MODIFICATION REQUESTED (SEE SHEET 2) 102
3 EVERGREEN SHRUBS / 10 LF REQUIREMENT: 102 3 EVERGREEN SHRUBS / 10 LF PROVIDED: 31 BARRIER REQUIREMENT: 6' HIGH SOLID WOOD FENCE BARRIER PROVIDED: 6' HIGH WOOD SCREENING FENCE	N/A	31 MODIFICATION REQUESTED (SEE SHEET 2) 6' HIGH SOLID WOOD FENCE 6' HIGH WOOD SCREENING FENCE
35' WIDE TRANSITIONAL SCREENING 2 BUFFER AT THE WEST PROPERTY. LENGTH AND WIDTH OF TRANSITIONAL YARD AREA REQUIRED: 265' x 35'. LENGTH AND WIDTH OF TRANSITIONAL YARD AREA PROVIDED: 265' x 13'. MIXTURE OF EVERGREEN TREES MIN 70% AND DECIDUOUS TREES MAX 30% REQUIRED. MIXTURE OF EVERGREEN TREES 14% AND DECIDUOUS TREES 8% PROVIDED.	N/A	265' x 35' (788 6,966 SF) 265' x 13' MODIFICATION REQUESTED (SEE SHEET 2) 70% EVERGREEN AND 30% DECIDUOUS TREES 14% EVERGREEN AND 8% DECIDUOUS TREES MODIFICATION REQUESTED (SEE SHEET 2) 80
3 EVERGREEN SHRUBS / 10 LF REQUIREMENT: 80 3 EVERGREEN SHRUBS / 10 LF PROVIDED: 35 BARRIER REQUIREMENT: 6' HIGH SOLID WOOD FENCE BARRIER PROVIDED: 7' HIGH BRICK WALL	N/A	80 MODIFICATION REQUESTED (SEE SHEET 2) 6' HIGH SOLID WOOD FENCE 7' HIGH BRICK WALL
10-YEAR TREE COVER TABULATIONS TREE COVER REQUIRED (25%): 42,314 SF TREE PRESERVATION (32%): 79,766 SF	(25%): 34,169 SF (32%): 35,814 SF	(25%): 28,146 SF (32%): 42,962 SF
PROPOSED TREE PLANTING: 3" CALIPER DECIDUOUS CATEGORY IV (250 SF): 2,000 SF 3" CALIPER DECIDUOUS CATEGORY III (175 SF): 1,225 SF 3" CALIPER DECIDUOUS CATEGORY II (125 SF): 1,575 SF 3" CALIPER EVERGREEN CATEGORY II (125 SF): 5,125 SF 3" CALIPER EVERGREEN CATEGORY I (75 SF): 2,475 SF TOTAL PROPOSED TREE PLANTING: 12,200 SF	2 x 250 = 500 1 x 175 = 175 9 x 125 = 1,125 31 x 125 = 3,875 SF 16 x 75 = 1,200 SF 6,875	6 x 250 = 1,500 SF 6 x 175 = 1,050 SF 2 x 125 = 250 SF 10 x 125 = 1,250 SF 17 x 75 = 1,275 SF 5,325 SF
TOTAL TREE COVERAGE PROVIDED (13.6%): 92,966 SF	(13.2%) 42,689 SF	(14.6%) 48,277 SF

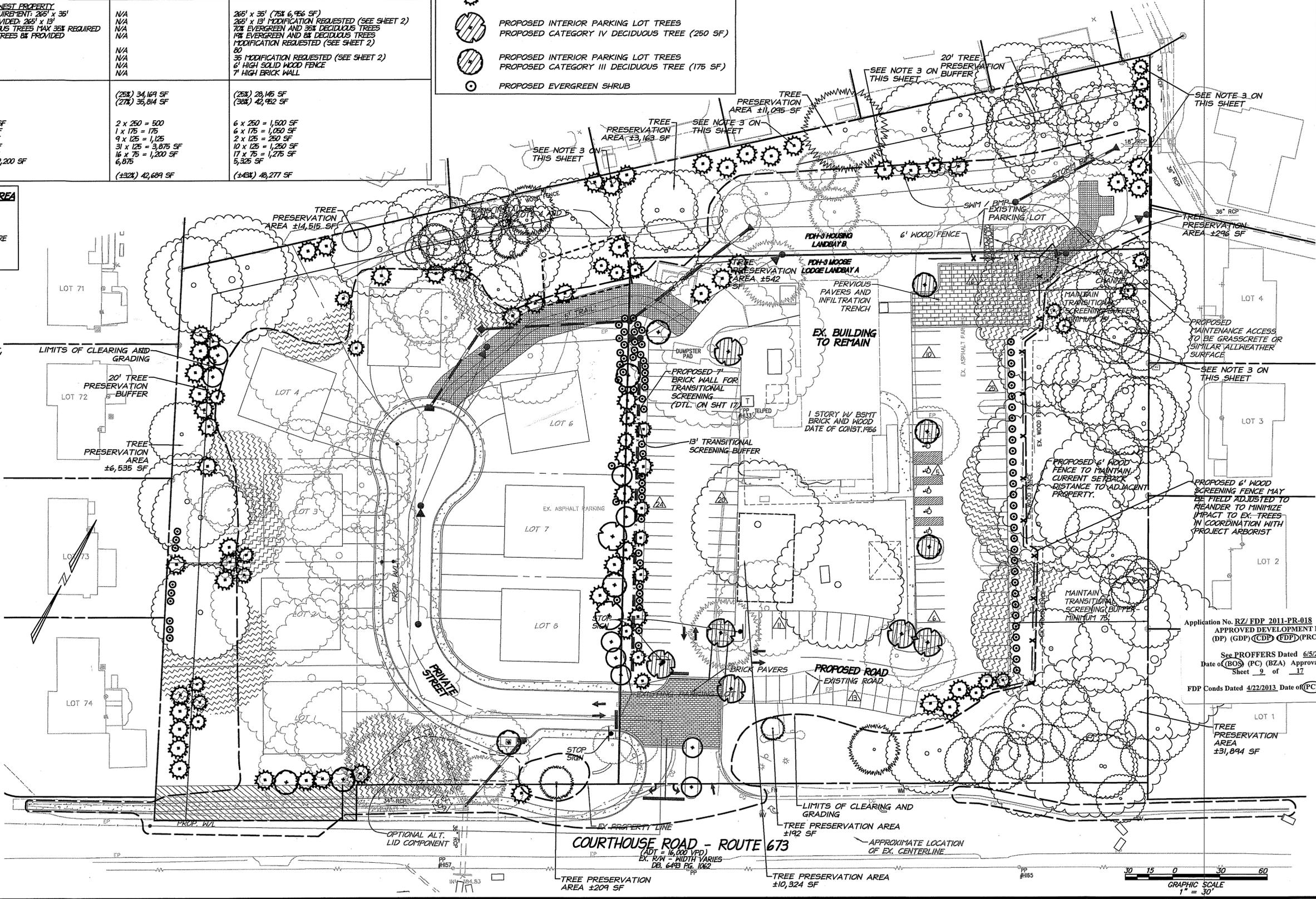
**PROPOSED SPECIES FOR PDH-3 ZONED AREA**  
PROPOSED TREE SPECIES SHALL INCLUDE BUT NOT BE LIMITED TO: RED MAPLE, RED OAK, AMERICAN HOLLY, AMERICAN BEECH, WILLOW OAK, WHITE SPRUCE, AMERICAN ARBOVITAE AND INKBERY. THESE NATIVE SPECIES ARE SUBJECT TO CHANGE BASED ON AVAILABILITY AT THE TIME OF THE SITE PLAN PROCESS AND FINAL ENGINEERING.

**NOTE:**  
1. SEE SHEET 5 AND 6 FOR TREE PRESERVATION NOTES, DETAILS AND TREE PRESERVATION CHART.  
2. SEE SHEET 2 FOR WAIVER AND MODIFICATION REQUEST OF TRANSITIONAL SCREENING AND BARRIERS.  
3. DUE TO THE DENSITY OF THE EXISTING FOREST, SUPPLEMENTAL EVERGREEN SCREENING AT THE PERIMETER OF THE PROPERTY TO BE FIELD LOCATED AT THE TIME OF CONSTRUCTION IN COORDINATION WITH UFMID, ADJACENT OWNER AND THE BUILDER. PROPOSED PLANTING SHALL BE DISTRIBUTED IN OPEN FOREST AREAS ONLY AND SHOULD NOT BE PLANTED WHERE EXISTING TREE ROOTS WOULD BE COMPROMISED.

**LEGEND**

- EXISTING TREES TO BE REMOVED
- EXISTING TREES TO BE PRESERVED WITHIN AND OUT OF LIMITS OF CLEARING AND GRADING
- EXISTING TREES TO BE SAVED IF POSSIBLE
- PROPOSED CATEGORY II DECIDUOUS TREE (125 SF)
- PROPOSED CATEGORY II EVERGREEN TREE (125 SF)
- PROPOSED CATEGORY I EVERGREEN TREE (75 SF)
- PROPOSED INTERIOR PARKING LOT TREES  
PROPOSED CATEGORY IV DECIDUOUS TREE (250 SF)
- PROPOSED INTERIOR PARKING LOT TREES  
PROPOSED CATEGORY III DECIDUOUS TREE (175 SF)
- PROPOSED EVERGREEN SHRUB

DATE	REVISION
9/02/2011	COUNTY COMMENTS
10/11/2011	COUNTY COMMENTS
3/09/2012	COUNTY COMMENTS
5/18/2012	COORDINATION REVISIONS
8/01/2012	COUNTY COMMENTS
10/12/2012	COUNTY COMMENTS
1/15/2013	COUNTY COMMENTS
3/24/2013	COUNTY COMMENTS
4/14/2013	COUNTY COMMENTS



**christopher consultants**  
engineering · surveying · land planning  
9900 main street (fourth floor) Fairfax, VA 22031-9907  
9703.273.6920 fax 703.273.7696

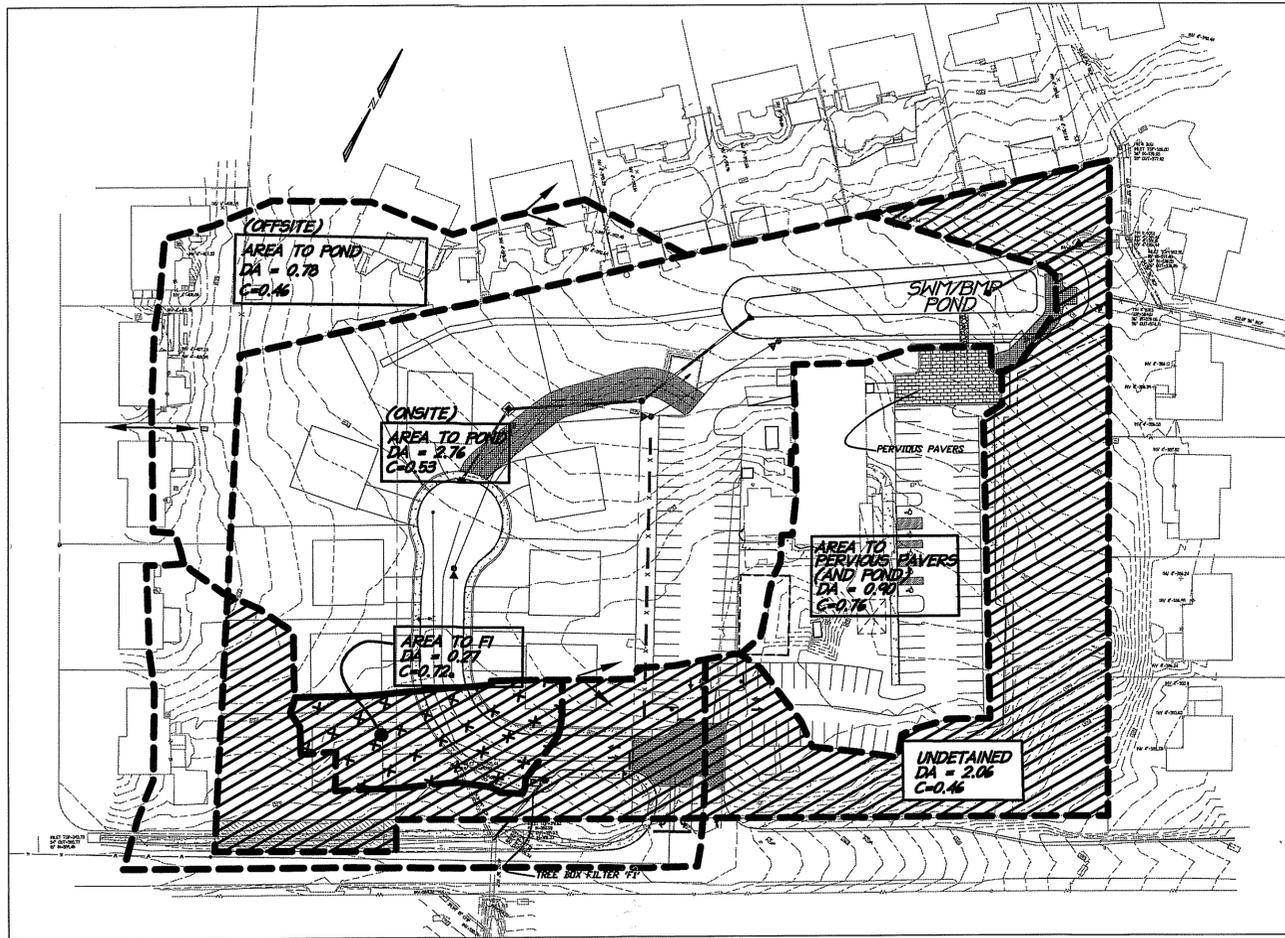
COMMONWEALTH OF VIRGINIA  
JOHN C. LEVTOV  
Lic. No. 33635  
4/11/13  
PROFESSIONAL ENGINEER

**LANDSCAPE PLAN**

**VIENNA MOOSE LODGE**  
FAIRFAX COUNTY, VIRGINIA

Application No. RZ/FDP 2011-PR-018 Staff Mayland  
APPROVED DEVELOPMENT PLAN  
(DP) (GDP) (CDP) (FDP) (PRC) (CP)  
See PROFFERS Dated 6/5/2013  
Date of (BOS) (PC) (BZA) Approval 7/9/2013  
Sheet 9 of 17  
FDP Conds Dated 4/22/2013 Date of (PC) 4/25/2013

PROJECT No: 11-21-01  
SCALE: 1"=30'  
DATE: 04-19-2013  
DESIGN: J-M  
DRAWN: J-M  
CHECKED:  
SHEET No. 9 of 17  
C-6016



SWM / BMP DRAINAGE AREA MAP



**SWM COMPUTATIONS:**

**PRE-DEVELOPMENT SITE CONDITIONS: (WHOLE SITE)**

AREA = 5.72 ACRES  $T_c = 5$  MINUTES  
 $C_2 = \frac{(1.77)(0.90) + (3.95)(0.20)}{5.72} = 0.42$   
 $C_{10} = \frac{(1.77)(0.90) + (3.95)(0.30)}{5.72} = 0.49$   
 $I_2 = 5.45$  IN/HR.  $I_{10} = 7.27$  IN/HR.  
 $Q_2 = (0.42)(5.45)(5.72) = 13.09$  CFS  
 $Q_{10} = (0.49)(7.27)(5.72) = 20.38$  CFS

**POST-DEVELOPMENT SITE CONDITIONS: (UNDETAINED)**

AREA = 2.06 ACRES  $C = 0.46$   
 $I_2 = 5.45$  IN/HR.  $I_{10} = 7.27$  IN/HR.  
 $Q_2 = (0.46)(5.45)(2.06) = 5.16$  CFS  
 $Q_{10} = (0.46)(7.27)(2.06) = 6.89$  CFS

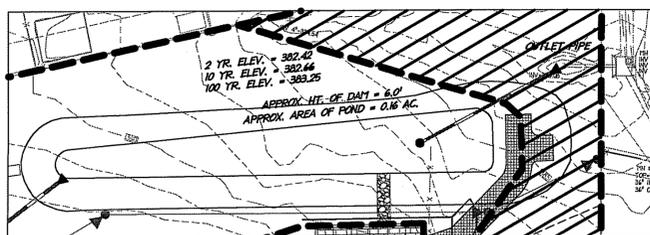
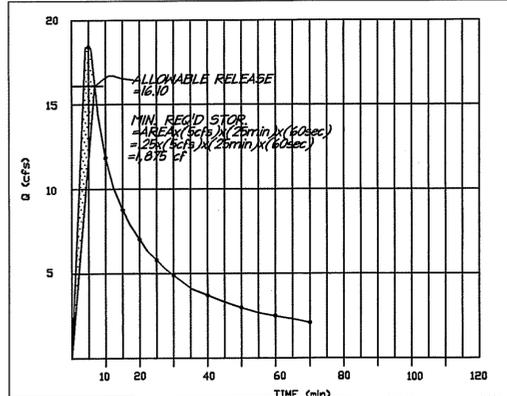
**OFFSITE DRAINING ON-SITE: (TO POND)**

AREA = 0.78 ACRES  $C = 0.46$   
 $I_2 = 5.45$  IN/HR.  $I_{10} = 7.27$  IN/HR.  
 $Q_2 = (0.46)(5.45)(0.78) = 1.96$  CFS  
 $Q_{10} = (0.46)(7.27)(0.78) = 2.61$  CFS

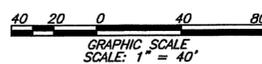
**TOTAL ALLOWED RELEASE FROM DETENTION:**

PREDEVELOPMENT - UNDETAINED + OFFSITE  
 $Q_2 = 13.09 - 5.16 + 1.96 = 9.89$  CFS  
 $Q_{10} = 20.38 - 6.89 + 2.61 = 16.10$  CFS

**POND VOLUME COMPS**  
 BMP VOL =  $(4375 \times C - 875) \times D.A.$   
 $= (4375 \times 0.55 - 875) \times 4.44$   
 $= 7675$  cf  
 MIN. STOR FOR 10 YR = 1,875 cf  
 TOTAL MIN. STOR. NEEDED = 9,450 cf  
 MIN. STOR. AVAILABLE W/ LAYOUT SHOWN = 14,000 cf



POND MAP



**MINIMUM STORMWATER INFORMATION FOR REZONING, SPECIAL EXCEPTION, SPECIAL PERMIT AND DEVELOPMENT PLAN APPLICATIONS**

The following information is required to be shown or provided in all zoning applications, or a waiver request of the submission requirement with justification shall be attached. Note: Waivers will be acted upon separately. Failure to adequately address the required submission information may result in a delay in processing this application.

This information is required under the following Zoning Ordinance paragraphs:  
 Special Permits (8-011 2J & 2L) Special Exceptions (9-011 2J & 2L)  
 Cluster Subdivision (9-015 1G & 1N) Commercial Revitalization Districts (9-622 2A (12) & (14))  
 Development Plans PRC District (16-302 3 & 4L) PRC Plan (16-303 1E & 1O)  
 FDP P Districts (except PRC) (16-502 1F & 1G) Amendments (18-202 10F & 10I)

- 1. Plat is at a minimum scale of 1"=50' (unless it is depicted on one sheet with a minimum scale of 1"=100').
- 2. A graphic depicting the stormwater management facility(ies) and limits of clearing and grading accommodate the stormwater management facility(ies), storm drainage pipe systems and outlet protection, pond spillways, access roads, site outfalls, energy dissipation devices, and stream stabilization measures as shown on Sheet 5.
- 3. Provide:
 

Facility Name/Type & No.	On-site area served (acres)	Off-site area served (acres)	Drainage area (acres)	Footprint area (sf)	Storage Volume (cf)	If pond, dam height (ft)
DRY POND	3.66	0.78	4.44	4,750	14,000	6.0
Totals						
- 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet 7. Pond inlet and outlet pipe systems are shown on Sheet 7.
- 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet 7. Type of maintenance access road surface noted on the plat is GRASSCRE (asphalt, geoblock, gravel, etc.).
- 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet 5&9.
- 7. A 'stormwater management narrative' which contains a description of how detention and best management practices requirements will be met is provided on Sheet 10.
- 8. A description of the existing conditions of each numbered site outfall extended downstream from the site to a point which is at least 100 times the site area or which has a drainage area of at least one square mile (640 acres) is provided on Sheet 11.
- 9. A description of how the outfall requirements, including contributing drainage areas of the Public Facilities Manual will be satisfied is provided on Sheet 11.
- 10. Existing topography with maximum contour intervals of two (2) feet and a note as to whether it is an air survey or field run is provided on Sheets 2 & 3.
- 11. A submission waiver is requested for N/A.
- 12. Stormwater management is not required because N/A.

**SWM NARRATIVE:**

THE PROPOSED PROJECT INVOLVES THE REDEVELOPMENT OF 5.72 ACRES OF LAND IN THE ACCOTINK CREEK WATERSHED. THE SITE CURRENTLY CONSISTS OF A 7,445 SQ. FT. BUILDING AND ASSOCIATED PARKING LOTS FOR THE VIENNA MOOSE LODGE. THE EXISTING BUILDING WILL REMAIN, AND THE EXISTING PARKING LOT TO THE EAST WILL BE REBUILT. THE EXISTING PARKING LOT TO THE WEST WILL BE DEMOLISHED, AND 8 SINGLE FAMILY HOMES WILL BE CONSTRUCTED IN ITS PLACE, ALONG WITH A PRIVATE STREET.

CURRENTLY, A MAJORITY OF STORMWATER FROM THE SITE DRAINS BY WAY OF SHEET FLOW TO A SWALE LOCATED IN THE REAR OF THE PROPERTY, WHICH THEN DRAINS TO AN EXISTING 18" END SECTION LOCATED IN THE NORTHEAST CORNER OF THE PROPERTY. FROM HERE, THE WATER ENTERS A CLOSED STORM PIPE SYSTEM AND TRAVELS APPROXIMATELY 600' BEFORE CROSSING COURTHOUSE ROAD AND OUTFALLS INTO AN EXISTING CHANNEL WHICH FLOWS THROUGH NOTTOWAY PARK. STORMWATER FROM THE FRONT PORTION OF THE PROPERTY SHEET FLOWS TOWARDS COURTHOUSE ROAD AND ENTERS INTO A CLOSED STORM PIPE SYSTEM THAT CROSSES COURTHOUSE ROAD AND OUTFALLS INTO A SEPARATE EXISTING CHANNEL WHICH FLOWS THROUGH NOTTOWAY PARK. THIS CHANNEL CONVERGES WITH THE PREVIOUSLY MENTIONED CHANNEL ON NOTTOWAY PARK PROPERTY APPROXIMATELY 1200' DOWNSTREAM.

STORMWATER MANAGEMENT REQUIREMENTS FOR THIS DEVELOPMENT WILL BE SATISFIED BY PROVIDING AN EXTENDED DETENTION DRY POND WHICH WILL BE LOCATED IN THE NORTHEAST CORNER OF THE PROPERTY. THE POND HAS BEEN PRELIMINARY SIZED TO ACCOMMODATE A DRAINAGE AREA OF 4.44 ACRES (3.66 ACRES ONSITE, 0.78 ACRES OFFSITE). THE POND WILL PROVIDE DETENTION FOR ON-SITE EXCESS RUNOFF FROM THE 2 AND 10 YEAR STORM EVENTS AND WILL ALSO BE DESIGNED TO DETAIN THE BMP VOLUME FOR A MINIMUM OF 48 HOURS. THE POND ITSELF WILL CONSUME APPROXIMATELY 0.26 ACRES OF LAND (OUTER LIMITS) AND WILL HAVE A MINIMUM VOLUME OF 14,000 CUBIC FEET.

**DAM BREACH NARRATIVE**

A DAM BREACH ANALYSIS WILL BE REQUIRED WITH FINAL DESIGN. THE PRELIMINARY ANALYSIS SHOWS THAT A SUNNY DAY DAM FAILURE WOULD RESULT IN NO PROPERTY DAMAGE AS THE ENTIRE VOLUME OF THE FACILITY WILL BE CONTAINED IN THE SWAMP AREA JUST DOWN STREAM FROM THE POND AT THE EXISTING END SECTION. IN THE EVENT OF A FAILURE DURING THE 100 YEAR STORM ASSUMING THE EXISTING PIPE SYSTEM IS FAILING AS WELL, THE BREACH PATH WOULD FOLLOW THE EXISTING STORM PIPE SYSTEM AND EASEMENT BETWEEN LOTS 4 AND 5 DOWN TO WHERE THE FLOW WOULD ENTER LEMONTREE LANE AND THEN FOLLOW THE ROAD DOWN TO OPEN CHANNEL OUTFALLS IN NOTTOWAY PARK.

ANY REMEDIATION MEASURES NEEDED IN THE EXISTING EASEMENT TO KEEP FLOOD LEVELS DOWN BELOW EXISTING 100 YEAR FLOOD LEVELS WILL BE KEPT TO A MINIMUM AND THE GROUND AND LANDSCAPING RESTORED TO THE FULL EXTENT ALLOWABLE.

**COMBINED SPILLWAY JUSTIFICATION**

DUE TO LACK OF SPACE AS WELL AS THE TOPOGRAPHY OF THE LAND, A COMBINED SPILLWAY IS PROPOSED INSTEAD OF A SEPARATE EMERGENCY SPILLWAY.

**SWM MAINTENANCE ACCESS ROAD**

A MAINTENANCE ACCESS ROAD WILL BE PROVIDED FOR THE STORMWATER DETENTION POND. THIS MAINTENANCE ACCESS ROAD WILL BE A PERVIOUS SURFACE SUCH AS GRASSCRETE. THE ACCESS ROAD WILL FOLLOW THE DAM OF THE POND AND WILL BE ACCESSED THROUGH THE PARKING LOT.

DATE	REVISION
9/02/2011	COUNTY COMMENTS
10/11/2011	COUNTY COMMENTS
3/09/2012	COUNTY COMMENTS
5/16/2012	COORDINATION REVISIONS
8/01/2012	COUNTY COMMENTS
10/12/2012	COUNTY COMMENTS
1/15/2013	COUNTY COMMENTS
3/29/2013	COUNTY COMMENTS
7/19/2013	COUNTY COMMENTS

**BMP FACILITY DESIGN CALCULATIONS**

PLAN NAME: VIENNA MOOSE LODGE DATE: 5/5/11  
 PLAN NUMBER: ENGINEER: DAVID MAXWELL, P.E.

**1. WATER QUALITY NARRATIVE:**

BMP - CHESAPEAKE BAY PRESERVATION AREA

**FAIRFAX COUNTY REQUIREMENT:**  
 REQUIRED PHOSPHORUS REMOVAL FOR ACCOTINK CREEK WATERSHED FOR REDEVELOPMENT OF PROPERTY CURRENTLY NOT SERVED BY A BMP: (PER PFM SECTION 6-401.2B)  
 I-pre = 1.77/5.72 = 31%  
 I-post = 2.12/5.72 = 37%

$\% \text{ REMOVAL} = [1 - 0.9^{(I_{pre}/I_{post})}] \times 100$   
 $= [1 - 0.9^{(31/37)}] \times 100 = 24.6\%$

DEVICE EFFICIENCY

DRY POND 40%  
 TREE BOX FILTER 55%  
 PERVIOUS PAVERS 35% (no infiltration)

**2. WATERSHED INFORMATION: SITE AREA = 5.72 ACRES**

**SUBAREA DESIGNATION AND DESCRIPTION "C" ACRES**

**ON-SITE TO POND:**  
 BUILDING/PVTT 0.90 0.92  
 GRASS 0.35 1.84  
 TOTAL: 0.50 2.76

**TO PERM. PAVERS (AND POND):**  
 BUILDING/PVTT 0.90 0.67  
 GRASS 0.35 0.23  
 TOTAL: 0.76 0.90

**TO TREE BOX FL (UNDETAINED):**  
 BUILDING/PVTT 0.90 0.18  
 GRASS 0.35 0.09  
 TOTAL: 0.72 0.27

**UNDETAINED:**  
 BUILDING/PVTT 0.90 0.35  
 WOODED 0.30 1.10  
 GRASS 0.35 0.34  
 TOTAL: 0.43 1.79

**3. WEIGHTED AVERAGE "C" FACTOR FOR THE SITE (POST DEVELOPMENT)**

AREA OF THE SITE 5.72 ACRES  
 SUBAREA DESIGNATION "C" ACRES PRODUCT  
 BUILDING/PVTT 0.90 2.12 1.91  
 WOODED 0.30 1.10 0.33  
 GRASS 0.35 2.50 0.88  
 TOTAL = 3.12  
 AVERAGE "C" FACTOR FOR SITE 3.12/5.72 = 0.55

**4. PHOSPHORUS REMOVAL FOR THE SITE**

SUBAREA	BMP TYPE	REMOVAL EFF.	AREA	"C"	PRODUCT
ONSITE	DRY POND	40%	(2.76/5.72)	(0.53/0.55)	= 18.60
OFFSITE	DRY POND	40%	(0.24/0.76/5.72)	(0.46/0.55)	= 0.30
ONSITE	PAVERS	35%	(0.90/5.72)	(0.76/0.55)	= 7.61
ONSITE	FILTERRA	55%	(0.27/5.72)	(0.72/0.55)	= 3.40
					TOTAL = 29.91

**5. COMPLIANCE WITH PHOSPHORUS REMOVAL REQUIREMENT**

PHOSPHORUS REMOVED IS 29.91%. THIS IS GREATER THAN THE 24.6% REQUIRED THEREFORE, COMPLIANCE IS EXCEEDED.

**CONSERVATION EASEMENT NOTE:**

THE CONSERVATION EASEMENT IS NOT UTILIZED FOR BMP CREDIT. THE EASEMENT CONTAINS 0.31 AC OF NATURAL OPEN SPACE. IF USED FOR BMP CREDIT THE OPEN SPACE EASEMENT WOULD PROVIDE AN ADDITIONAL 5.4% PHOSPHORUS REMOVAL CREDIT FOR A TOTAL REMOVAL AMOUNT OF 35.3%.

**BMP NARRATIVE:**

TO COMPLY WITH COUNTY WATER QUALITY REQUIREMENTS, THIS PROJECT PROPOSES THREE TYPES OF WATER QUALITY TREATMENTS TO ADDRESS THE BMP REQUIREMENTS FOR THE SITE. SOME OF THE RESIDENTIAL DEVELOPMENT WILL DRAIN TO A PROPOSED TREE BOX FILTER. THIS AREA IS CURRENTLY PARTIALLY PAVED AND NOT RECEIVING ANY BMP TREATMENT. A MAJORITY OF THE PROPOSED RESIDENTIAL DEVELOPMENT WILL DRAIN TO A DRY EXTENDED DETENTION POND. A MAJORITY OF THE WESTERN SIDE OF THE RECONFIGURED MOOSE LODGE PARKING LOT AND SOME OF THE EXISTING BUILDING WILL DRAIN TO THE PROPOSED DETENTION POND. THE EASTERN SIDE OF THE RECONFIGURED MOOSE LODGE PARKING LOT AND THE REMAINDER OF THE EXISTING BUILDING WILL DRAIN TO PERVIOUS PAVERS AND THEN THE POND. ALL THESE AREAS AREA CURRENTLY PAVED AND RECEIVING NO WATER QUALITY OR QUANTITY TREATMENT. THE 2.76 AC. SHOWN DRAINING TO THE POND IS ONLY THE PORTION THAT IS TAKING BMP CREDIT FOR THE POND. THE AREAS DRAINING TO THE PERVIOUS PAVERS ALSO DRAIN TO THE POND BUT NO BMP POND CREDIT IS TAKEN SINCE IT RECEIVES OTHER BMP CREDIT. FOR STORMWATER QUALITY REQUIREMENTS, THE POND OUTLET STRUCTURE HAS BEEN DESIGNED TO DETAIN THE BMP STORAGE VOLUME. THIS WILL BE ACCOMPLISHED BY PROVIDING A 2" ORIFICE AT THE BOTTOM OF THE POND RISER STRUCTURE.

**christopher consultants**  
 engineering · surveying · land planning  
 9900 main street (fourth floor) Fairfax Va. 22031-3907  
 703.273.6620 fax: 703.273.7638



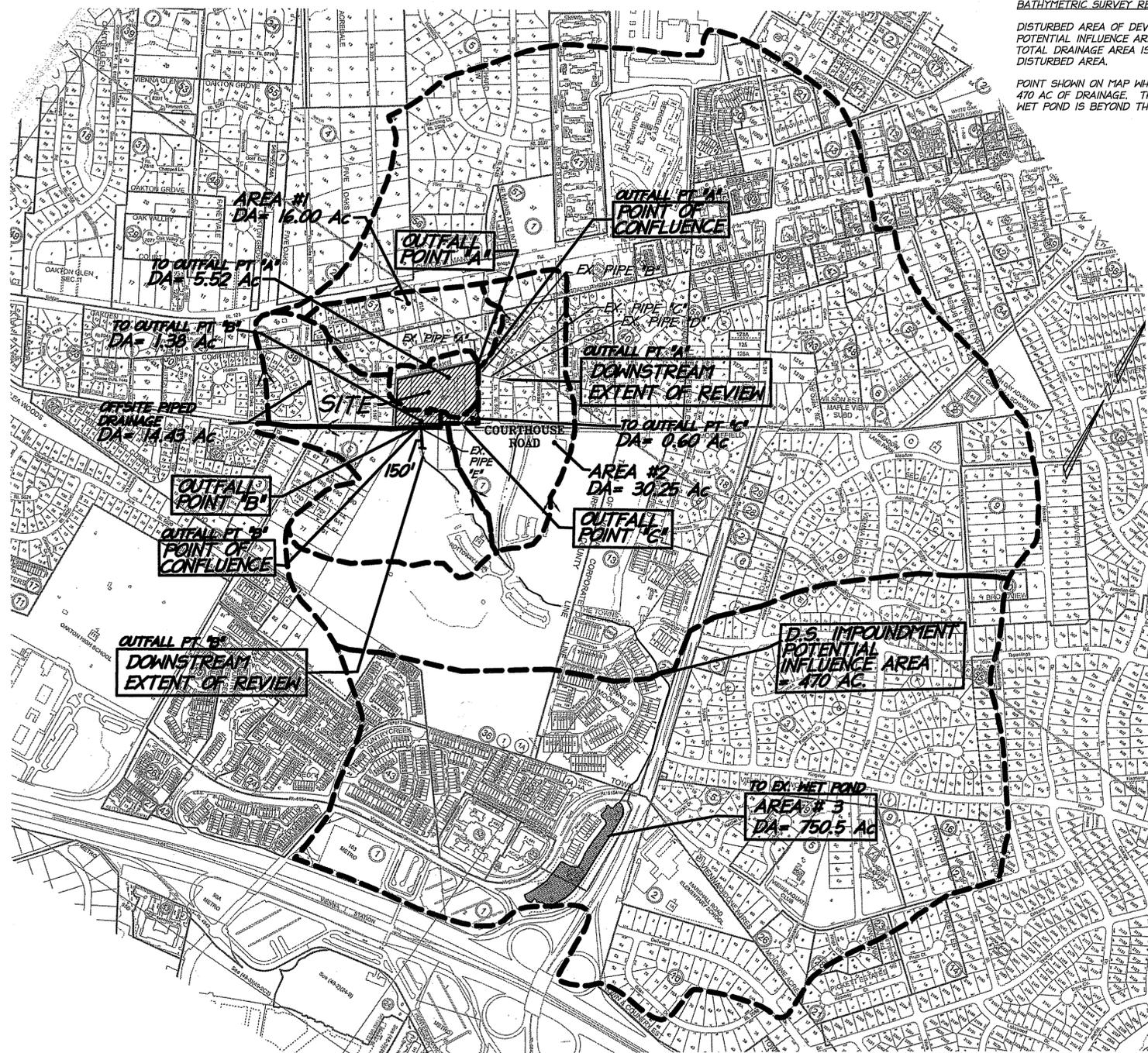
COMMONWEALTH OF VIRGINIA  
 JOHN C. LEVTOV  
 Lic. No. 33635  
 4/19/13  
 PROFESSIONAL ENGINEER

ND SWM TATIONS

Application No. RZ/FDP 2011-PR-018 Staff Mayland  
 APPROVED DEVELOPMENT PLAN  
 (DP) (GDP) (CDP) (FDP) (PRC) (CP)  
 See PROFFERS Dated 6/5/2013  
 Date of (BOS) (PC) (BZA) Approval 7/9/2013  
 Sheet 10 of 17  
 FDP Conds Dated 4/22/2013 Date of (PC) 4/25/2013

CONCEPTUAL DEVELOPMENT PLAN  
 FINAL DEVELOPMENT PLAN  
**VIENNA MOOSE LODGE**  
 FAIRFAX COUNTY, VIRGINIA

PROJECT No: 11-21-01  
 SCALE: 1"=60'  
 DATE: 04-19-2013  
 DESIGN: DM  
 DRAWN: DM  
 CHECKED:  
 SHEET No.



**BATHYMETRIC SURVEY REQUIREMENTS:**  
 DISTURBED AREA OF DEVELOPEMENT = 4.5 AC  
 POTENTIAL INFLUENCE AREA IS A POINT AT WHICH THE TOTAL DRAINAGE AREA IS 100 TIMES GREATER THAN THE DISTURBED AREA.  
 POINT SHOWN ON MAP WHERE THE CHANNEL IS RECEIVING 470 AC OF DRAINAGE. THEREFORE THE DOWNSTREAM WET POND IS BEYOND THE POTENTIAL INFLUENCE AREA.

DATE	REVISION
9/02/2011	COUNTY COMMENTS
10/11/2011	COUNTY COMMENTS
3/09/2012	COUNTY COMMENTS
5/18/2012	COORDINATION REVISIONS
8/01/2012	COUNTY COMMENTS
10/12/2012	COUNTY COMMENTS
1/15/2013	COUNTY COMMENTS
3/24/2013	COUNTY COMMENTS
4/19/2013	COUNTY COMMENTS

**OUTFALL NARRATIVE:**

THE SITE HAS THREE DIFFERENT OUTFALL POINTS, OUTFALL POINTS "A", "B", AND "C". MAJORITY OF THE SITE AREA WILL DRAIN TO A PROPOSED SHM POND LOCATED NEAR THE NORTHEAST PART OF THE PROPERTY. THE POND AND SOME UNCONTROLLED OVERLAND FLOW FROM THE UNDEVELOPED WESTERN SIDE OF THE PROPERTY WILL OUTFALL INTO A RIP-RAP LINED CHANNEL BEFORE ENTERING AN EXISTING 18" END SECTION, AND THIS IS CONSIDERED OUTFALL POINT "A". AN APPROXIMATE 0.88 ACRE OF ON-SITE AREA IN THE SOUTHWEST CORNER OF THE PROPERTY WILL BE BOTH PIPED AND SHEETFLOW TO AN EXISTING PIPE SYSTEM AT COURTHOUSE ROAD, AND THIS IS CONSIDERED OUTFALL POINT "B". FINALLY, THE REMAINING RUNOFF FROM THE SITE LOCATED TOWARDS THE FRONT SOUTHEAST CORNER OF THE PROPERTY LEAVES THE SITE AS UNCONTROLLED SHEETFLOW. THIS AREA IS CONSIDERED OUTFALL POINT "C".

**OUTFALL POINT "A"**

OUTFALL POINT "A" CONSISTS OF A DRAINAGE AREA OF APPROXIMATELY 5.52 ACRES. THERE IS AN EXISTING 18" END SECTION DIRECTING WATER INTO AN 18" CONCRETE PIPE AT THIS POINT, AND THIS EXISTING PIPE RECEIVES RUNOFF FROM MAJORITY OF THE SITE, AS WELL AS SOME RUNOFF FROM THE ADJACENT VIENNA OAKS SUBDIVISION. FROM THIS POINT, THE EXISTING 18" UNDERGROUND PIPE SYSTEM HEADS IN AN EASTERLY DIRECTION TOWARDS THE ADJACENT VIENNA OAKS SUBDIVISION WHERE IT JOINS AN EXISTING 36" PIPE SYSTEM. CONTINUING DOWNSTREAM FROM THIS POINT OF CONFLUENCE, AND FOR A TOTAL DISTANCE OF APPROXIMATELY 200', THE PIPE SYSTEM CROSSES UNDERNEATH LEYONTREE LANE. THIS POINT IS CONSIDERED THE DOWNSTREAM LIMIT OF REVIEW. BEYOND THE DOWNSTREAM LIMIT OF REVIEW, THE PIPE SYSTEM CONTINUES FOR APPROXIMATELY 470' BEFORE OUTFALLING ON THE OTHER SIDE OF COURTHOUSE ROAD INTO AN EXISTING CHANNEL WHICH FLOWS THROUGH NOTTOWAY PARK.

PIPE CAPACITY COMPUTATIONS ARE PROVIDED ON THIS SHEET FOR ALL PIPES (PIPES A-D) FROM THE POINT OF OUTFALL TO THE EXTENT OF REVIEW.

BEYOND EXTENT OF REVIEW: THE OUTFALL EXITS THE PIPE SYSTEM AT AN ENDWALL IN AN EXISTING CHANNEL WITH A CONCRETE APRON BOTTOM AND DENSE VEGETATIVE GROWTH ON THE SIDES. THE CHANNEL TRAVELS UNDER A PEDESTRIAN BRIDGE SHOWING SOME SIGNS OF SCOUR ON THE SIDES. THE CHANNEL THEN CONTINUES SOUTH THROUGH THE EXISTING WOODED AREA TO THE CONFLUENCE WITH OUTFALL B APPROXIMATELY 850' BEYOND THE ENDWALL. THE CHANNEL DOES NOT HAVE WELL DEFINED BED AND BANKS THE ENTIRE LENGTH AND THERE ARE SOME AREAS OF EXISTING EROSION.

**EXTENT OF REVIEW FOR OUTFALL "A"**

THE EXTENT OF THE REVIEW FOR OUTFALL POINT "A" WAS DETERMINED USING OPTION A FROM THE COUNTY GUIDELINES FOR ADEQUATE OUTFALL ANALYSIS. OPTION A STATES THE EXTENT OF THE REVIEW IS TO A POINT THAT IS AT LEAST 150' DOWNSTREAM OF A POINT WHERE THE RECEIVING PIPE OR CHANNEL IS JOINED BY ANOTHER THAT HAS A DRAINAGE AREA THAT IS AT LEAST 90% OF THE SIZE OF THE FIRST DRAINAGE AREA AT THE POINT OF CONFLUENCE. AT THE CONFLUENCE POINT LABELED ON THE MAP ON THIS SHEET, THE ADDITIONAL DRAINAGE AREA (AREA #1) IS 16.00 ACRES. THIS IS ALMOST 3 TIMES THE AMOUNT OF THE FIRST DRAINAGE AREA (5.66 ACRES), AND THEREFORE MEETS THE REQUIREMENT OF OPTION 1. FOLLOWING THIS PIPE SYSTEM 3 MORE PIPES DOWN, THE DOWNSTREAM LIMIT OF REVIEW FOR OUTFALL POINT "A" IS THE PIPE THAT RUNS BETWEEN LOTS 10 AND 11 (PIPE D) AND IS LABELED AS SUCH ON THE MAP.

**OUTFALL POINT "B"**

OUTFALL POINT "B" CONSISTS OF A TOTAL DRAINAGE AREA OF APPROXIMATELY 1.38 ACRES LOCATED AT THE SOUTHWEST PORTION OF THE PROPERTY. APPROXIMATELY 0.42 ACRES WILL BE PIPED ONSITE RUNOFF AND 0.46 ACRES ONSITE AND 0.50 ACRES OFFSITE WILL CONTINUE TO DRAIN OVERLAND TO THE FRONTAGE. THERE IS AN EXISTING DITCH ALONG COURTHOUSE ROAD THAT RECEIVES OVERLAND FLOW AND DRAINS TO AN EXISTING INLET IN FRONT OF THE SITE. 14.4 ACRES IS PIPED FROM THE ADJACENT COURTHOUSE OAKS AND VIENNA OAKS SUBDIVISIONS AND TIES IN TO THE 36" PIPE DOWNSTREAM FROM THE SITE WHICH THEN DRAINS BOTH THE SITE AND THE OFFSITE AREAS ACROSS COURTHOUSE ROAD. THE EXISTING 36" PIPE CROSSES UNDER COURTHOUSE ROAD FOR A DISTANCE OF APPROXIMATELY 40' BEFORE OUTFALLING INTO AN EXISTING CHANNEL. THE CHANNEL IS RIPRAP LINED AND STABLE ON THE BOTTOM BUT SHOWS SOME EROSION ON THE SIDES. THIS CHANNEL CONTINUES FOR APPROXIMATELY 1200' THROUGH NOTTOWAY PARK BEFORE JOINING THE OTHER EXISTING CHANNEL MENTIONED IN OUTFALL POINT "A"'S NARRATIVE ABOVE. THE CHANNEL IS IN A FULLY WOODED AREA AND HAS GOOD VEGETATIVE GROWTH ON THE SIDES AND OVERBANKS. THERE ARE SOME LOCATIONS ALONG THE LENGTH THAT SHOW SIGNS OF EROSION ON THE SIDE BANKS.

ALONG THE STORM SYSTEM UP TO THE EXTENT OF REVIEW WE WILL BE DEMONSTRATING THAT WE COMPLY WITH THE DOWNSTREAM DRAINAGE SYSTEM ANALYSIS BY SHOWING ADEQUATE CAPACITY IN THE EXISTING PIPE SYSTEM (PIPE "E", THIS PAGE) AND SHOWING ADEQUATE CAPACITY IN TWO CROSS SECTIONS IN THE CHANNEL FOR 150' BEYOND CONFLUENCE. WE WILL SHOW NO ADVERSE IMPACT AND PROPORTIONAL IMPROVEMENT UTILIZING THE CRITICAL SHEAR STRESS METHOD. THE PROPORTIONAL IMPROVEMENT REQUIRED IS 4.14% AT THE OUTLET OF THE PIPE SYSTEM. INITIAL ANALYSIS BASED ON THE DESIGN IN THE CONCEPTUAL PLAN INDICATES THAT WE MEET THESE REQUIREMENTS SINCE WE HAVE REDUCED THE DRAINAGE AREA TO THIS OUTFALL LEAVING THE SITE. SOILS TESTS WILL BE NEEDED TO VERIFY THE CHARACTERISTICS OF THE SOIL IN THE CHANNEL BANKS. COUNTY SOILS MAPS SHOW THE CHANNEL TO BE IN GLENELG SILT LOAM (39).

IN ADDITION THE APPLICANT HAS PROFFERED FUNDS SPECIFICALLY FOR THE PURPOSE OF STREAM RESTORATION PROJECTS IN NOTTOWAY PARK (PROFFER 35).

**EXTENT OF REVIEW FOR OUTFALL "B"**

THE EXTENT OF THE REVIEW FOR OUTFALL POINT "B" WAS DETERMINED USING OPTION A FROM THE COUNTY GUIDELINES FOR ADEQUATE OUTFALL ANALYSIS. OPTION A STATES THE EXTENT OF THE REVIEW IS TO A POINT THAT IS AT LEAST 150' DOWNSTREAM OF A POINT WHERE THE RECEIVING PIPE OR CHANNEL IS JOINED BY ANOTHER THAT HAS A DRAINAGE AREA THAT IS AT LEAST 90% OF THE SIZE OF THE FIRST DRAINAGE AREA AT THE POINT OF CONFLUENCE. AT THE CONFLUENCE POINT LABELED ON THE MAP ON THIS SHEET, THE INITIAL DRAINAGE AREA IS 1.38 ACRES AND THE ADDITIONAL DRAINAGE AREA IS 14.43 ACRES. THIS IS MORE THAN 90% OF THE FIRST DRAINAGE AREA AND THEREFORE MEETS THE REQUIREMENT OF OPTION A. FROM THIS POINT, AND AT DISTANCE OF 150', IS THE DOWNSTREAM LIMIT OF REVIEW FOR OUTFALL POINT "B" AND IS LABELED AS SUCH ON THE MAP.

**POST-DEVELOPED ANALYSIS AT S.W. CORNER TO OUTFALL POINT "B"**

PRE-DEV DRAINAGE AREA TO EX. STR 309 (LEADS TO PIPE "E")  
 (OVERLAND PLUS ONSITE PIPE: SITE D.A.=1.23AC)  
 D.A. = 1.73 AC, C = 0.50  
 Q2 = 4.74 CFS  
 Q10 = 6.32 CFS  
 POST-DEV DRAINAGE AREA TO EX. STR 309  
 (OVERLAND PLUS ONSITE PIPE: SITE D.A.=0.88AC)  
 D.A. = 1.38 AC, C = 0.56  
 Q2 = 4.21 CFS  
 Q10 = 5.61 CFS

POST DEVELOPED FLOW IS REDUCED AS APPROXIMATELY 0.35 AC OF THE DEVELOPED SITE IS DIVERTED TO THE PROPOSED SHM POND FOR TREATMENT. NOTE THAT THIS AREA INCLUDES THE OFFSITE ROAD AND SIDEWALK AREA.  
 LID COMPONENT:  
 IN ADDITION 0.27 AC OF DEVELOPED AREA WILL DRAIN TO A TREE BOX FILTER TO PROVIDE WATER QUALITY TREATMENT AND TO HELP MITIGATE FLOW VOLUME ON SMALLER STORMS.

**STORM SEWER CAPACITIES (OUTFALL "B")**

EX. PIPE "E" :  
 36" RCP n = 0.013  
 SLOPE = 1.84% CAPACITY = 90.47 CFS  
 DRAIN AREA TO PIPE "E":  
 = 15.8 AC, C=0.55  
 10 YR FLOW: Q10 = 0.55(7.27)15.8 = 63.1 cfs

**OUTFALL POINT "C"**

OUTFALL POINT "C" CONSISTS OF A DRAINAGE AREA OF APPROXIMATELY 0.60 ACRES AND IS LOCATED AT THE FRONT WEST CORNER OF THE PROPERTY. THIS RUNOFF LEAVES THE SITE AS UNCONTROLLED OVERLAND FLOW. THERE ARE NO IMPROVEMENTS BEING DONE WITHIN THE AREA DRAINING TO OUTFALL POINT "C", THEREFORE THE POST DEVELOPMENT CONDITIONS WILL REMAIN THE SAME AS PRE-DEVELOPMENT CONDITIONS. AFTER LEAVING THE SITE AT OUTFALL POINT "C", THE RUNOFF FLOWS TO COURTHOUSE ROAD AND ENTERS A CLOSED PIPE SYSTEM WHERE IT TRAVELS APPROXIMATELY 250' BEFORE OUTFALLING INTO AN EXISTING CHANNEL LABELED AT NOTTOWAY PARK.

**CONCLUSION**

PIPE CAPACITY COMPUTATIONS HAVE BEEN PROVIDED ON THIS SHEET AND IT APPEARS THAT ALL DOWNSTREAM PIPES HAVE SUFFICIENT CAPACITY TO HANDLE THE OUTFALL RUNOFF. CROSS SECTIONS WILL ALSO BE ANALYZED TO CONFIRM THAT 2 YEAR VELOCITIES ARE NON-EROSIVE AND THE FLOW REMAINS WITHIN THE BED AND BANKS OF THE CHANNEL. PROPORTIONAL IMPROVEMENT WILL BE ACHIEVED FOR THE SOUTHWEST OUTFALL.

WITH THIS INFORMATION, IT IS IN THE ENGINEER'S OPINION THAT THE DEVELOPMENT MEETS THE CRITERIA FOR AN ADEQUATE OUTFALL.

**OVERALL DRAINAGE DIVIDE MAP**



**STORM SEWER CAPACITIES (OUTFALL "A")**

EX. PIPE "A" :  
 18" RCP  
 SLOPE = 2.91%  
 n = 0.013  
 CAPACITY = 17.92 CFS  
 EX. PIPE "B" :  
 36" RCP  
 SLOPE = 1.50%  
 n = 0.013  
 CAPACITY = 81.69 CFS  
 EX. PIPE "C" :  
 36" RCP  
 SLOPE = 1.30%  
 n = 0.013  
 CAPACITY = 76.05 CFS  
 EX. PIPE "D" :  
 36" RCP  
 SLOPE = 3.75%  
 n = 0.013  
 CAPACITY = 129.16 CFS

DRAIN AREA TO PIPES "B" AND "C":  
 16.0 AC, C=0.50  
 10 YR FLOW: Q10 = 0.50(7.27)16.0 = 58.16 cfs

DRAIN AREA TO PIPE "D":  
 16.0 + 6.2 = 22.2 AC, C=0.50  
 10 YR FLOW: Q10 = 0.50(7.27)22.2 = 80.70 cfs

**EXISTING OUTFALL CONDITIONS**

OUTFALL POINTS "A" AND "C" DRAIN IN EXISTING STORM PIPES AND OUTFALL IN THE EASTERN CHANNEL AT NOTTOWAY PARK AS SHOWN AND DESCRIBED IN THE OUTFALL NARRATIVE ON THIS PAGE. OUTFALL "B" WILL DRAIN TO THE WESTERN CHANNEL AT NOTTOWAY PARK.

THE EXISTING CHANNELS CONVERGE INTO AN APPROXIMATELY 7' WIDE, 2' DEEP ROCKY BOTTOM CHANNEL WITH SOME EXISTING RIPRAP IN PLACE AND VEGETATED SIDES AND OVERBANKS. THERE ARE SOME SPOTS SHOWING CHANNEL EROSION. THE CHANNEL THEN FLOWS INTO A LARGE ELLIPTICAL CULVERT UNDER THE NOTTOWAY PARK ROAD. THE STREAM THEN CONTINUES EAST IN A CHANNEL APPROXIMATELY 10' WIDE, 3' DEEP WITH A ROCKY SANDY BOTTOM AND APPARENTLY STABLE SIDES AND OVERBANKS THAT ARE VEGETATED. THE CHANNEL CONTINUES ON AND CONVERGES WITH ANOTHER STREAM OF ABOUT THE SAME SIZE AND THEN FLOWS UNDER TAPAWINGO ROAD IN QUAD 5X5' BOX CULVERTS. THE STREAM IS ROCKY BOTTOM ON BOTH THE UPSTREAM AND DOWNSTREAM ENDS AND THE SIDE SLOPES LOOK STABLE. THE STREAM CONVERGES WITH ANOTHER STREAM AS IT REACHES NUTLEY STREET AND FLOWS SOUTH IN A STABLE RIPRAP LINED CHANNEL APPROXIMATELY 15' WIDE AND 4'-5' DEEP WITH THICK VEGETATION ON THE SIDE AND OVERBANKS. THE STREAM THEN FLOWS UNDER VIRGINIA CENTER BLVD IN QUAD BOX CULVERTS INTO THE EXISTING WET POND. THE DRAINAGE AREA FOR THE WET POND IS ROUGHLY 750 ACRES WHICH IS MORE THAN 100 TIMES THE 5.7 ACRES OF THE SUBJECT SITE AND IS THEREFORE THE END OF THE DESCRIPTION OF THE OUTFALL CONDITIONS.

**christopher consultants**  
 engineering · surveying · land planning  
 9600 main street (fourth floor) Fairfax, VA 22031-9907  
 703.275.6620 fax 703.273.7636

**OVERALL DRAINAGE DIVIDES MAP AND ADEQUATE OUTFALL ANALYSIS**

**CONCEPTUAL DEVELOPMENT PLAN FINAL DEVELOPMENT PLAN**

**VIENNA MOOSE LODGE**  
 FAIRFAX COUNTY, VIRGINIA

PROJECT NO: 11-21-01  
 SCALE: 1"=150'  
 DATE: 04-19-2013  
 DESIGN: JY  
 DRAWN: JY  
 CHECKED:  
 SHEET No. **11** OF **17**  
 C-6016

Application No. RZ/FDP 2011-PR-018 Staff Mayland  
 APPROVED DEVELOPMENT PLAN (DP) (GDP) (CDP) (FDP) (PRC) (CP)  
 See PROFFERS Dated 6/5/2013  
 Date of (BOS) (PC) (BZA) Approval 7/9/2013  
 Sheet 11 of 17  
 FDP Conds Dated 4/22/2013 Date of (PC) 4/25/2013

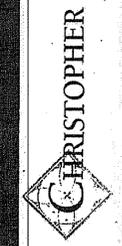
P:\Projects\11-21-01\VIC-01011-Overall drainage divides map and adequate outfall analysis - C-6016.dwg, 4/22/2013 11:03:39 AM, jsharwin, 11, christopher consultants, Inc.

FA-Proposed11-21-01-C-6016.dwg, 4/22/2013 11:03:53 AM, jsharkey, 1:1, christopher consultants, ltd.



Application No. RZ/ FDP, 2011-PR-018 Staff Max/land  
 APPROVED DEVELOPMENT PLAN  
 (DP) (GDP) (CD) (ED) (PRC) (CP)  
 See PROFFERS Dated 6/5/2013  
 Date of (BOS) (PC) (BZA) Approval 7/2/2013  
 Sheet 12 of 17  
 FDP Conds Dated 4/22/2013 Date of (PC) 4/25/2013

VIENNA MOOSE LODGE



Devereaux & Associates

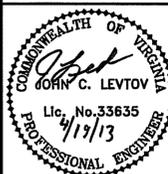
DEVEREAUX & ASSOCIATES P.C. EXPRESSLY RESERVES ITS COMMON LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPRESS WRITTEN PERMISSION AND CONSENT OF DEVEREAUX & ASSOCIATES P.C.

CONCEPTUAL DEVELOPMENT PLAN  
 FINAL DEVELOPMENT PLAN  
**VIENNA MOOSE LODGE**  
 FAIRFAX COUNTY, VIRGINIA

PROJECT NO: 11-21-01  
 SCALE: AS NOTED  
 DATE: 04-19-2013  
 DESIGN: JM  
 DRAWN: JM  
 CHECKED:  
 SHEET No.

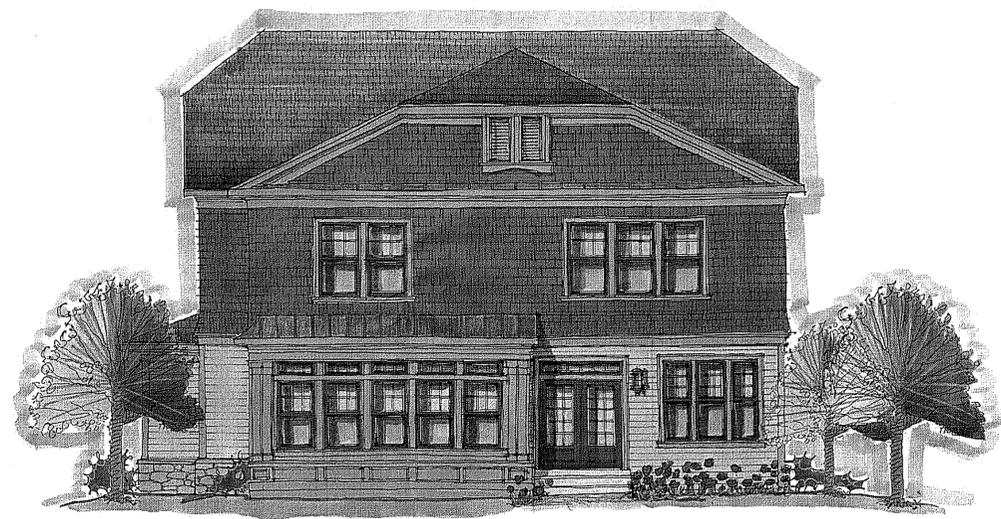
12 OF 17  
 C-6016

ARCHITECTURAL ELEVATION -  
 PROPOSED HOUSING

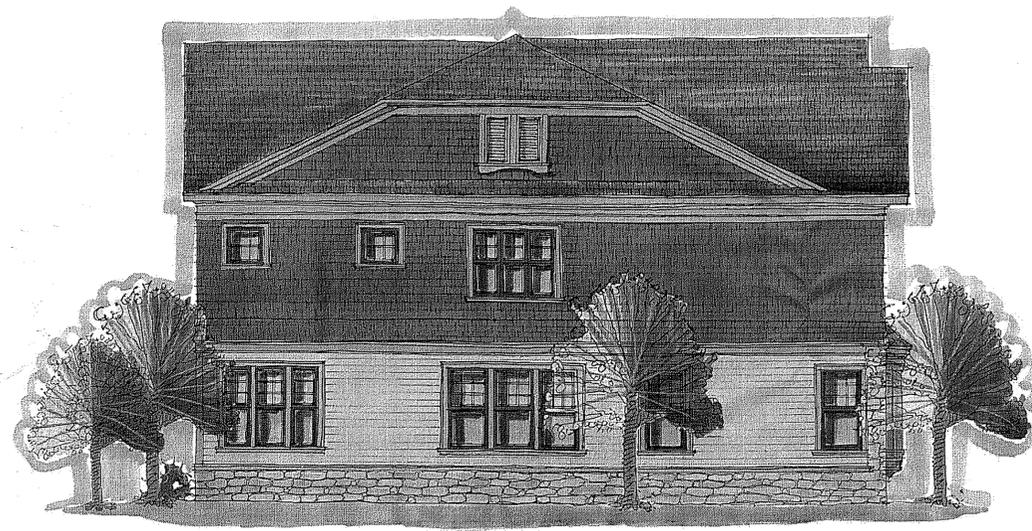


**christopher consultants**  
 engineering · surveying · land planning  
 9500 main street (fourth floor) Fairfax, VA 22031-3907  
 703.273.6620 fax 703.273.7656

FOR ILLUSTRATIVE PURPOSES ONLY. NOT FOR CONSTRUCTION PURPOSES. THIS SHEET IS BY OTHERS, AND IS ONLY CERTIFIED AS PART OF OUR PLAN SET.



Rear Elevation



Side Elevation

# VIENNA MOOSE LODGE

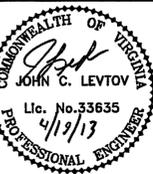
*Devereaux & Associates, P.C.*  
ARCHITECTS AND PLANNERS



Application No. RZ/ FDP 2011-PR-018 Staff Mavland  
APPROVED DEVELOPMENT PLAN  
(DP) (GDP) (CDP) (FDP) (PRC) (CP)  
See PROFFERS Dated 6/5/2013  
Date of (BOS) (PC) (BZA) Approval 7/9/2013  
Sheet 13 of 17  
FDP Conds Dated 4/22/2013 Date of (PC) 4/25/2013

FOR ILLUSTRATIVE PURPOSES ONLY. NOT FOR CONSTRUCTION PURPOSES. THIS SHEET IS BY OTHERS, AND IS ONLY CERTIFIED AS PART OF OUR PLAN SET.

**christopher consultants**  
engineering · surveying · land planning  
9800 main street (fourth floor) fairfax va. 22031-3907  
703.273.6920 fax 703.273.7696



ARCHITECTURAL ELEVATION -  
PROPOSED HOUSING

CONCEPTUAL DEVELOPMENT PLAN  
FINAL DEVELOPMENT PLAN  
**VIENNA MOOSE LODGE**  
FAIRFAX COUNTY, VIRGINIA

PROJECT No: 11-21-01

SCALE:  
AS NOTED

DATE:  
04-19-2013

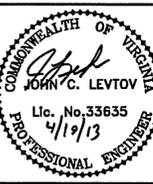
DESIGN: JM  
DRAWN: JM  
CHECKED:

SHEET No.

13 OF 17

C-6016

DATE	REVISION
9/02/2011	COUNTY COMMENTS
10/11/2011	COUNTY COMMENTS
3/09/2012	COUNTY COMMENTS
5/18/2012	COORDINATION REVISIONS
8/01/2012	COUNTY COMMENTS
10/12/2012	COUNTY COMMENTS
1/15/2013	COUNTY COMMENTS
3/29/2013	COUNTY COMMENTS
4/19/2013	COUNTY COMMENTS

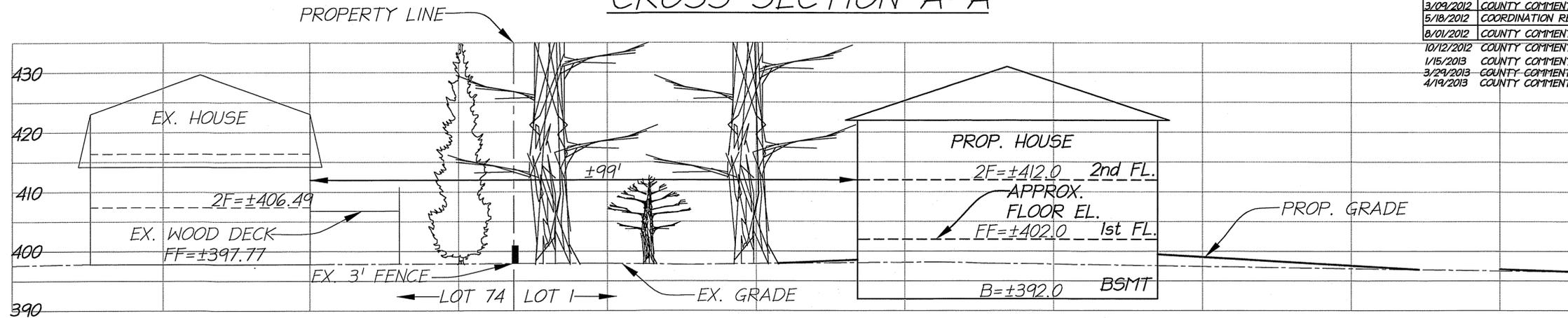


RESIDENTIAL CROSS SECTIONS

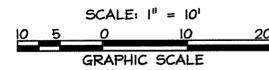
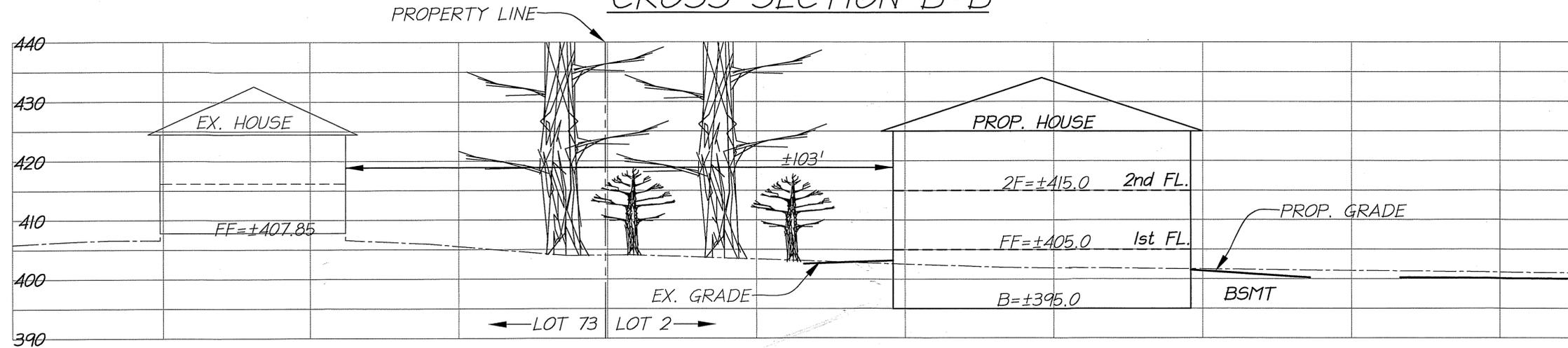
CONCEPTUAL DEVELOPMENT PLAN  
FINAL DEVELOPMENT PLAN  
**VIENNA MOOSE LODGE**  
FAIRFAX COUNTY, VIRGINIA

PROJECT NO: 11-21-01  
SCALE: SEE DRAWING  
DATE: 04-19-2013  
DESIGN: EG  
DRAWN: EG  
CHECKED:  
SHEET No. **14 of 17**  
C-6016

### CROSS SECTION A-A

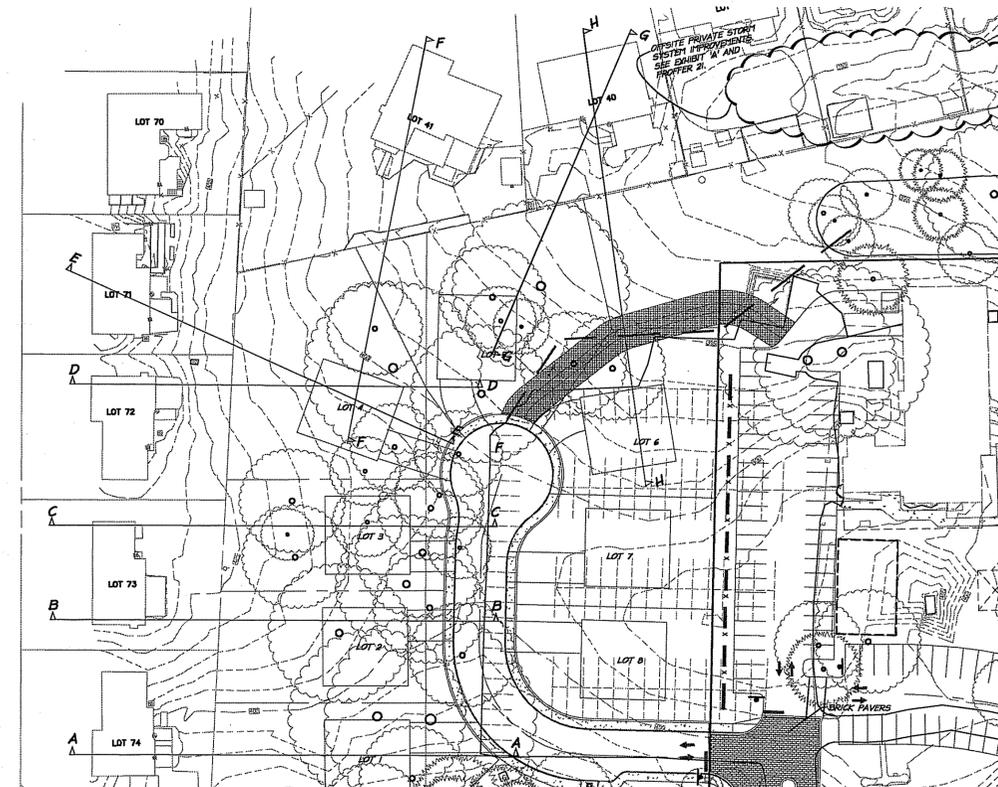


### CROSS SECTION B-B



**NOTE:**  
EXISTING HOUSE HEIGHTS ARE BASED ON A FIELD SURVEY BY CHRISTOPHER CONSULTANTS ON 10/19/2012.

- LEGEND**
- PROPERTY LINE
  - PROPOSED GRADE
  - - - EXISTING GRADE
  - - - - - APROX. FLOOR ELEVATION

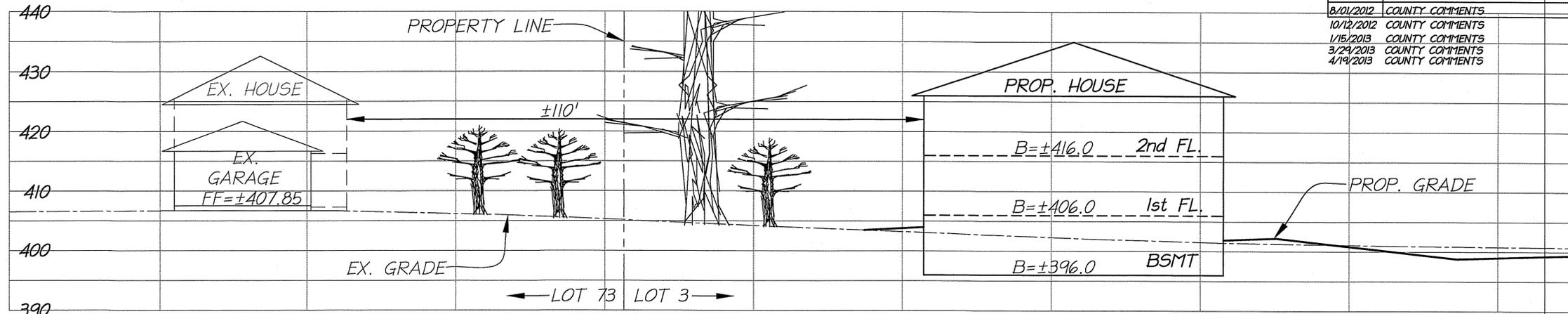


Application No. RZ/FDP 2011-PR-018 Staff Maryland  
APPROVED DEVELOPMENT PLAN  
(DP) (GDP) (CDP) (FDP) (PRC) (CP)  
See PROFFERS Dated 6/5/2013  
Date of (BOS) (PC) (BZA) Approval 7/9/2013  
Sheet 14 of 17  
FDP Conds Dated 4/22/2013 Date of (PC) 4/25/2013

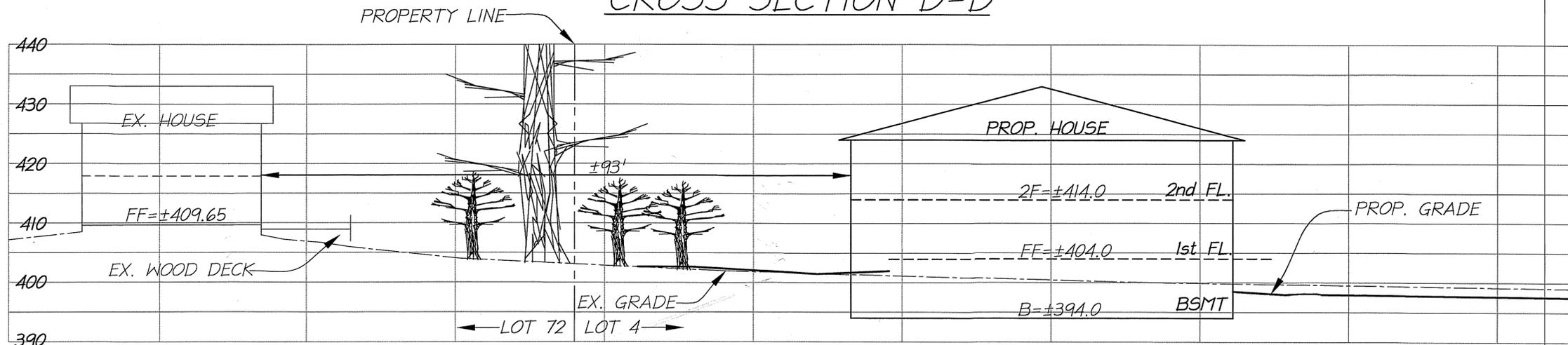
FOR ILLUSTRATIVE PURPOSES ONLY

DATE	REVISION
9/02/2011	COUNTY COMMENTS
10/11/2011	COUNTY COMMENTS
3/09/2012	COUNTY COMMENTS
5/16/2012	COORDINATION REVISIONS
8/01/2012	COUNTY COMMENTS
10/12/2012	COUNTY COMMENTS
1/15/2013	COUNTY COMMENTS
3/29/2013	COUNTY COMMENTS
4/19/2013	COUNTY COMMENTS

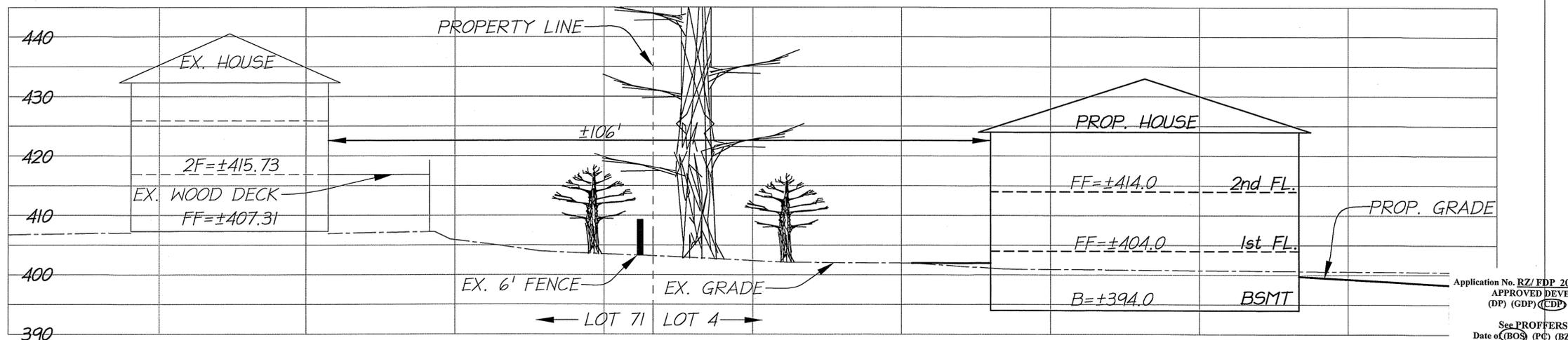
### CROSS SECTION C-C



### CROSS SECTION D-D



### CROSS SECTION E-E

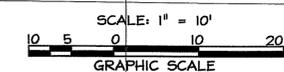


**NOTE:**  
EXISTING HOUSE HEIGHTS ARE BASED ON A FIELD SURVEY BY CHRISTOPHER CONSULTANTS ON 10/19/2012.

FOR ILLUSTRATIVE PURPOSES ONLY

- LEGEND**
- PROPERTY LINE
  - PROPOSED GRADE
  - - - EXISTING GRADE
  - - - APROX. FLOOR ELEVATION

Application No. RZ/FDP 2011-PR-018 Staff Mavland  
APPROVED DEVELOPMENT PLAN  
(DP) (GDP) (CDP) (FDP) (PRC) (CP)  
See PROFFERS Dated 6/5/2013  
Date of (BOS) (PC) (BZA) Approval 7/9/2013  
Sheet 15 of 17  
FDP Conds Dated 4/22/2013 Date of (PC) 4/25/2013



**christopher consultants**  
engineering · surveying · land planning  
9900 main street (fourth floor) Fairfax va. 22031-3907  
703.273.6620 fax 703.273.7636



RESIDENTIAL  
CROSS SECTIONS

CONCEPTUAL DEVELOPMENT PLAN  
FINAL DEVELOPMENT PLAN  
**VIENNA MOOSE LODGE**  
FAIRFAX COUNTY, VIRGINIA

PROJECT NO: 11-21-01

SCALE:  
1" = 10'

DATE:  
04-19-2013

DESIGN: EG  
DRAWN: EG

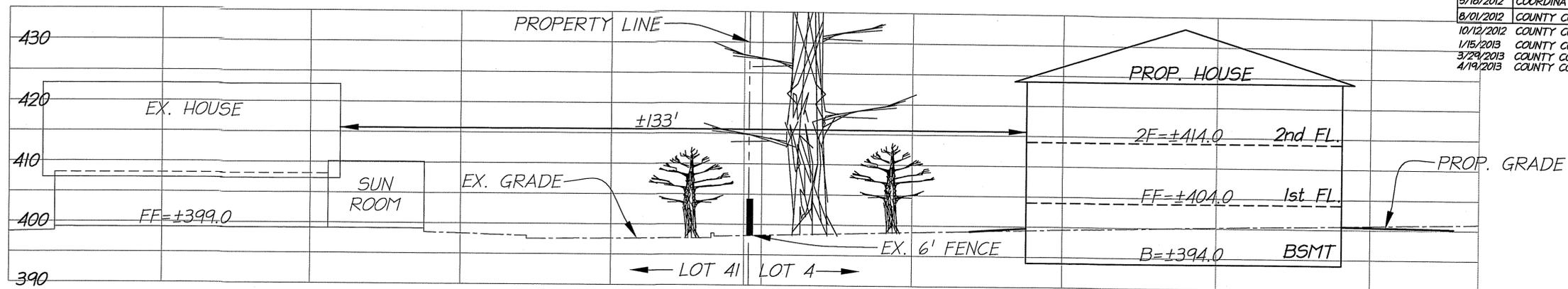
CHECKED:

SHEET No.

15 of 17

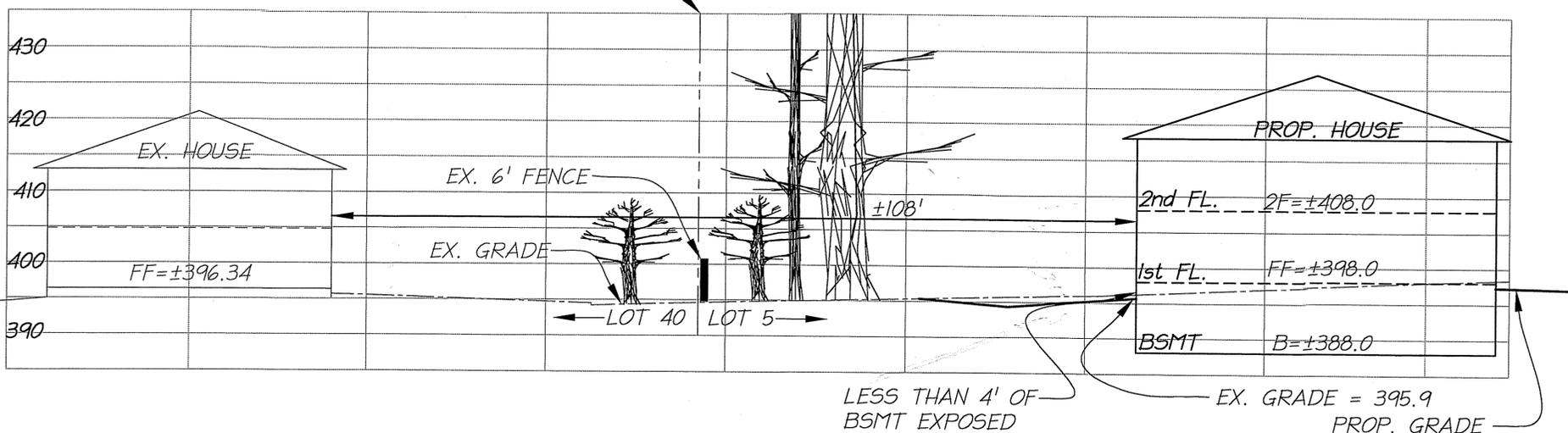
C-6016

### CROSS SECTION F-F



DATE	REVISION
9/02/2011	COUNTY COMMENTS
10/11/2011	COUNTY COMMENTS
3/09/2012	COUNTY COMMENTS
5/18/2012	COORDINATION REVISIONS
8/01/2012	COUNTY COMMENTS
10/12/2012	COUNTY COMMENTS
1/15/2013	COUNTY COMMENTS
3/29/2013	COUNTY COMMENTS
4/19/2013	COUNTY COMMENTS

### CROSS SECTION G-G

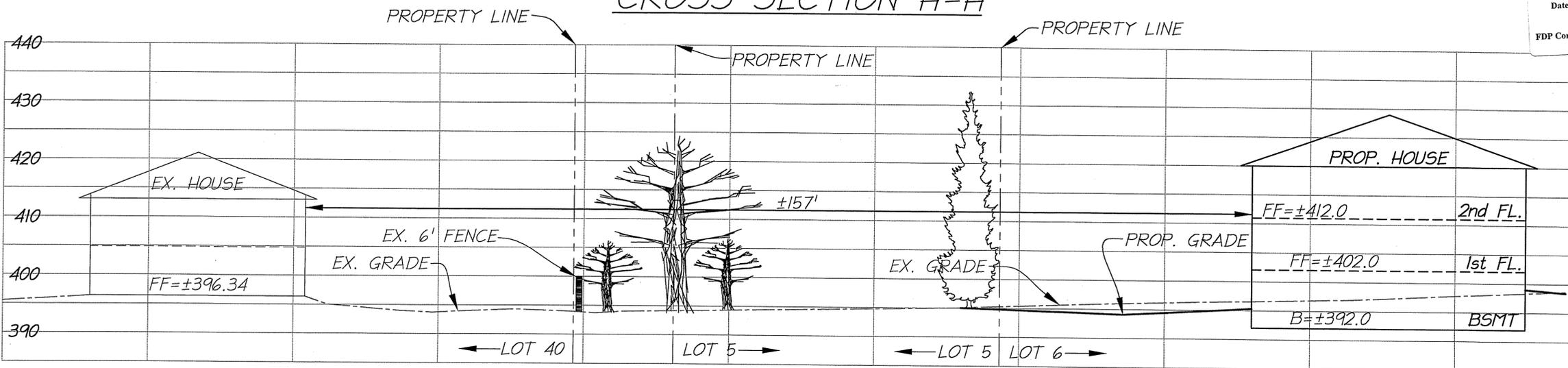


**NOTE:**  
EXISTING HOUSE HEIGHTS ARE BASED ON A FIELD SURVEY BY CHRISTOPHER CONSULTANTS ON 10/19/2012.

#### LEGEND

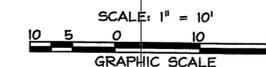
- PROPERTY LINE
- PROPOSED GRADE
- - - EXISTING GRADE
- - - APROX. FLOOR ELEVATION

### CROSS SECTION H-H

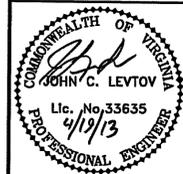
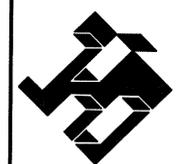


Application No. RZ/FDP 2011-PR-018 Staff Mavland  
 APPROVED DEVELOPMENT PLAN  
 (DP) (GDP) (CDP) (FDP) (PRC) (CP)  
 See PROFFERS Dated 6/5/2013  
 Date of (BOS) (PC) (BZA) Approval 7/9/2013  
 Sheet 16 of 17  
 FDP Conds Dated 4/22/2013 Date of (PC) 4/25/2013

FOR ILLUSTRATIVE PURPOSES ONLY



**christopher consultants**  
 engineering · surveying · land planning  
 9900 main street (fourth floor) · fairfax va. 22031-3907  
 703.273.6820 · fax 703.273.7686



RESIDENTIAL  
 CROSS SECTIONS

CONCEPTUAL DEVELOPMENT PLAN  
 FINAL DEVELOPMENT PLAN  
**VIENNA MOOSE LODGE**  
 FAIRFAX COUNTY, VIRGINIA

PROJECT NO: 11-21-01  
 SCALE: SEE DRAWING  
 DATE: 04-19-2013  
 DESIGN: EG  
 DRAWN: EG  
 CHECKED:  
 SHEET No.

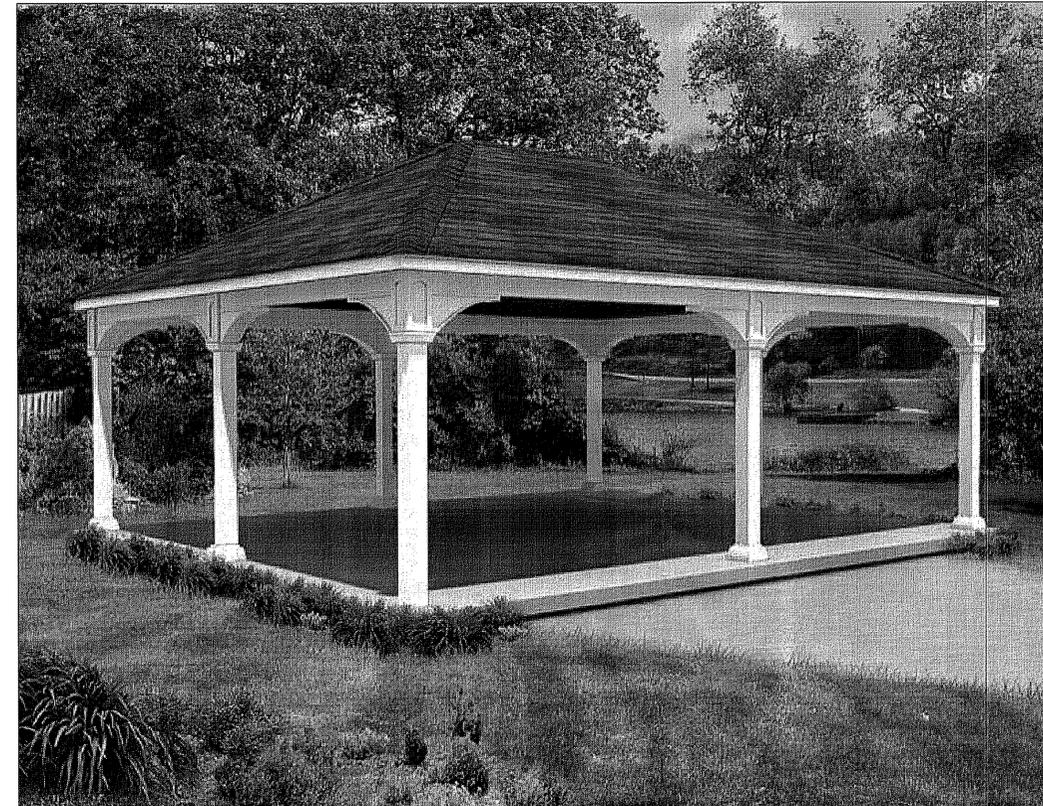
THESE DETAILS ARE CONCEPTUAL AND MAY VARY WITH FINAL DESIGN.

DATE	REVISION
9/02/2011	COUNTY COMMENTS
10/11/2011	COUNTY COMMENTS
3/09/2012	COUNTY COMMENTS
5/18/2012	COORDINATION REVISIONS
8/01/2012	COUNTY COMMENTS
10/12/2012	COUNTY COMMENTS
1/15/2013	COUNTY COMMENTS
3/29/2013	COUNTY COMMENTS
4/19/2013	COUNTY COMMENTS



7' AT MAIN PANEL. COLUMN AND CAP MAY BE HIGHER THAN 7'.

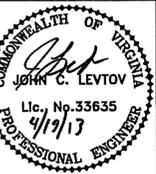
7' HIGH BRICK SCREENING WALL



A BUILT IN GAS GRILL MAY BE INCLUDED AS AN OPTION.

PROPOSED 20' X 24' GAZEBO

**christopher consultants**  
 engineering · surveying · land planning  
 9900 main street (fourth floor) fairfax va. 22031-9907  
 703.273.6620 fax 703.273.7656



DETAILS

CONCEPTUAL DEVELOPMENT PLAN  
 FINAL DEVELOPMENT PLAN  
**VIENNA MOOSE LODGE**  
 FAIRFAX COUNTY, VIRGINIA

PROJECT NO: 11-21-01

SCALE:  
AS SHOWN

DATE: 04-19-2013

DESIGN: JL

DRAWN: JL

CHECKED:

SHEET No.

17 OF 17

C-6016

Application No. RZ/FDP 2011-PR-018 Staff Mayland  
 APPROVED DEVELOPMENT PLAN  
 (DP) (GDP) (CDP) (FDP) (PRC) (CP)  
 Sec. PROFFERS Dated 6/5/2013  
 Date of (BOS) (PC) (BZA) Approval 7/9/2013  
 Sheet 17 of 17  
 FDP Conds Dated 4/22/2013 Date of (PC) 4/25/2013

P:\Project\11-21-01\C-6016\17\_Details\_C-6016.dwg, 4/22/2013 11:02:36 AM, jml@christopher.com