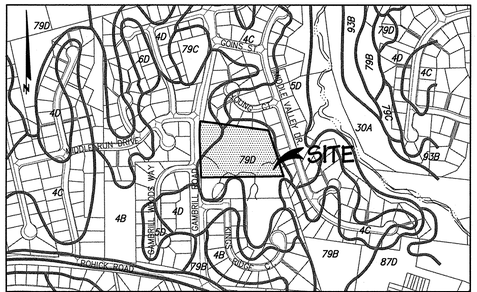
CONCEPTUAL / FINAL DEVELOPMENT PLAN

CORBETT MANOR

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA



SOIL #	SERIES NAME	FOUNDATION SUPPORT	SUBSURFACE DRAINAGE	SLOPE STABILITY	EROSION POTENTIAL	PROBLEM CLASS	GEOTECH REPORT REQ'D
4B	BARKERS XROADS-NATHALIE	FAIR	GOOD	GOOD	HIGH	IVB	YES
4C	BARKERS XROADS-NATHALIE	FAIR	GOOD	GOOD	HIGH	IVB	YES
79D	NATHALIE GRAVELLY LOAM	FAIR	GOOD	GOOD	HIGH	I	NO

SOILS MAP/DATA

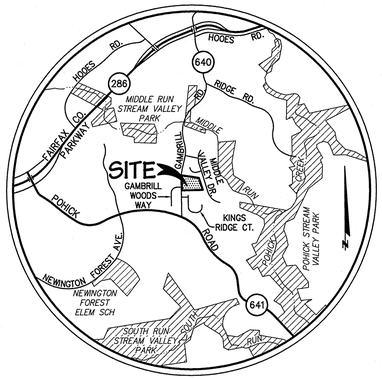
SCALE : 1" = 500'

REVISIONS		
NO.	SHEET NUMBER AND REVISION DESCRIPTION	DATE
1.	(1) CHANGED PROP. ZONE TO PDH-2; REV. SITE TABS & TYP. LOT DETAIL; REMOVED WAIVER REQUESTS. (4) REV. LAYOUT & CLEARING LIMITS. (5) NEW SHEET. (6) REVISED LANDSCAPING & TREE COVER CALCULATIONS. (7&8) REVISED TREES TO BE SAVED AND REMOVED. (9&10) REVISED SWM, BMP & OUTFALL INFORMATION; REMOVED DAM BREACH ANALYSIS SHEET.	5-1-14

NO CHANGES, OTHER THAN THOSE SPECIFIED ABOVE, HAVE BEEN MADE TO THIS PLAN FROM WHAT WAS PREVIOUSLY SUBMITTED OR APPROVED.

NOTES

1. THE PROPERTY DELINEATED ON THIS PLAN IS LOCATED ON FAIRFAX COUNTY TAX ASSESSMENT MAP NUMBER 98-1((1))44. THE SITE IS CURRENTLY ZONED R-1. THE PROPOSED ZONE IS PDH-2.
2. THE PROPERTY HEREON IS CURRENTLY UNDER THE OWNERSHIP OF THE HEIRS OF MELVIN LEE YOUNG IN DEED BOOK 439 AT PAGE 446 AND WILL BOOK 943 AT PAGE 1833.
3. BOUNDARY AND TOPOGRAPHIC INFORMATION TAKEN FROM A FIELD RUN SURVEY PREPARED BY CHARLES P. JOHNSON & ASSOCIATES, DATED OCTOBER 2013. CONTOUR INTERVAL EQUALS TWO FEET NGVD 1929.
4. THERE ARE NO 100-YEAR FLOODPLAINS ON-SITE. NO FLOODPLAIN OR DRAINAGE STUDIES ARE REQUIRED FOR THIS PROJECT.
5. THERE IS A RESOURCE PROTECTION AREA (RPA) AND AN ENVIRONMENTAL QUALITY CORRIDOR (EQCs) ON THIS SITE. AN RPA EXCEPTION AND A WATER QUALITY IMPACT ASSESSMENT WILL BE REQUIRED.
6. TO THE BEST OF OUR KNOWLEDGE, THE SITE HAS NO SCENIC ASSETS OR NATURAL FEATURES DESERVING OF PROTECTION AND PRESERVATION.
7. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO KNOWN GRAVES, OBJECTS, OR STRUCTURES MARKING A PLACE OF BURIAL.
8. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITY EASEMENTS HAVING A WIDTH OF 25 FEET OR GREATER, NOR ANY MAJOR UNDERGROUND UTILITY EASEMENTS LOCATED WITHIN THE SITE.
9. ANY EXISTING WELLS ON-SITE ARE TO BE CAPPED AND ABANDONED IN ACCORDANCE WITH HEALTH DEPARTMENT REGULATIONS.
10. SEE SHEET 3 FOR A DESCRIPTION OF THE EXISTING VEGETATION.
11. EXISTING STRUCTURES ARE TO BE REMOVED, INCLUDING THE EXISTING DWELLING CONSTRUCTED IN 1946.
12. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO HAZARDOUS OR TOXIC SUBSTANCES AS SET FORTH IN TITLE 40, CODE OF FEDERAL REGULATIONS PART 116.4, 302.4, AND 355; ALL HAZARDOUS WASTE AS SET FORTH IN COMMONWEALTH OF VIRGINIA/DEPARTMENT OF WASTE MANAGEMENT VR 672-10-1 – VIRGINIA HAZARDOUS WASTE MANAGEMENT REGULATIONS; AND/OR PETROLEUM PRODUCTS AS DEFINED IN TITLE 40, CODE OF FEDERAL REGULATIONS PART 280; TO BE GENERATED, UTILIZED, STORED, TREATED, AND/OR DISPOSED OF ON-SITE AND THE SIZE AND CONTENTS OF ANY EXISTING OR PROPOSED STORAGE TANKS OR CONTAINERS.
13. THERE ARE NO ZONING OVERLAY DISTRICTS IMPACTING THIS SITE.
14. THERE ARE NO AFFORDABLE DWELLING UNITS (ADUs) REQUIRED FOR THIS PROJECT.
15. NO DENSITY REDUCTIONS ARE REQUIRED BY ZONING ORDINANCE SECTION 2-308.
16. IN ACCORDANCE WITH THE ADOPTED COMPREHENSIVE PLAN, THE PROPOSED DEVELOPMENT WILL PROVIDE RESIDENTIAL DEVELOPMENT AT 1.55 DWELLING UNITS PER ACRE AND WILL CONFORM TO ALL APPLICABLE ORDINANCES, REGULATIONS, AND ADOPTED STANDARDS, EXCEPT FOR THE FOLLOWING MODIFICATION HEREBY REQUESTED :
    - A REDUCTION OF THE CUL-DE-SAC RADIUS (PFM PLATE 7-7) FROM 45 FEET TO 30 FEET.
17. PROPOSED PUBLIC IMPROVEMENTS :
    - WATER SERVICE IS TO BE PROVIDED BY AN EXISTING 8" MAIN LOCATED IN GAMBRILL ROAD.
    - SANITARY SERVICE IS TO BE PROVIDED BY AN EXISTING 8" MAIN LOCATED IN YOUNG COURT.
18. PARKING SPACES WILL BE PROVIDED AS GENERALLY SHOWN ON THE PLAN. THE NUMBER OF PARKING SPACES MAY BE INCREASED OR DECREASED FROM THAT NUMBER REPRESENTED IN THAT TABULATION AS LONG AS THE MINIMUM NUMBER OF SPACES IS PROVIDED IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE 11 OF THE ZONING ORDINANCE.
19. THERE ARE NO RECREATIONAL FACILITIES PROPOSED WITH THIS DEVELOPMENT.
20. SPECIAL AMENITIES ARE NOT PROPOSED WITH THIS PLAN.
21. A DEVELOPMENT SCHEDULE HAS NOT BEEN DETERMINED AT THIS TIME.
22. ARCHITECTURAL SKETCHES ARE NOT AVAILABLE AT THIS TIME.
23. A MINOR PAVED TRAIL IS REQUIRED FOR THIS PROJECT ALONG GAMBRILL ROAD PER THE FAIRFAX COUNTY TRAILS PLAN.
24. PARCELS A & B WILL BE CONVEYED TO A HOMEOWNERS ASSOCIATION FOR OWNERSHIP AND MAINTENANCE.
25. THE APPLICANT RESERVES THE RIGHT TO LOCATE ONE OR MORE TEMPORARY SALES OFFICES ON THE PROPERTY IN ACCORDANCE WITH ARTICLE 8-808 OF THE ZONING ORDINANCE.
26. MINOR MODIFICATIONS TO THE BUILDING FOOTPRINTS, LOT AREAS, DIMENSIONS, UTILITY LAYOUT, AND LIMITS OF CLEARING AND GRADING MAY OCCUR WITH THE FINAL ENGINEERING DESIGN, IN SUBSTANTIAL CONFORMANCE WITH THE CDP/FDP, PROVIDED SUCH ARE IN ACCORDANCE WITH THE MINOR MODIFICATIONS PROVISION IN SECTION 16-403 OF THE ZONING ORDINANCE.



VICINITY MAP

SCALE : 1" = 2000'

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

- ☒ 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 4 .
- ☒ 3. Provide :

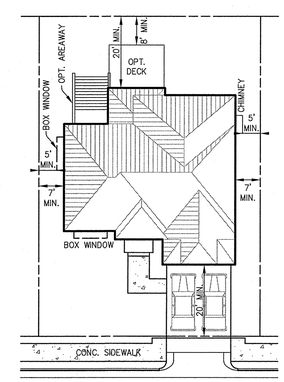
Facility Name/ Type & No.	On-site area served (acres)	Off-site area served (acres)	Drainage area (acres)	Footprint area (sf)	Storage Volume (cf)	If pond, dam height (ft)
STONE STORAGE	0.81±	0.00±	0.00	3,966±	3,569±	N/A

- ☒ 4. Onsite drainage channels, outfalls, and pipe systems are shown on Sheet 4 . Pond inlet and outlet pipe systems are shown on Sheet 4 .
- ☒ 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet 4 . Type of maintenance access road surface noted on the plat is asphalt .
- ☒ 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet 6 .
- ☒ 7. A 'stormwater management narrative' which contains a description of how detention and best management practices requirements will be met is provided on Sheet 9 .
- ☒ 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 9 .
- ☒ 9. A description of how the outfall requirements, including known changes to contributing drainage areas (i.e. drainage diversions), of the Public Facilities Manual will be satisfied is provided on Sheet 9 .
- ☒ 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 1 & 2 .
- ☐ 11. A submission waiver is requested for N/A
- ☐ 12. Stormwater management is not required because N/A

SITE TABULATIONS

SITE AREA :		
LOT AREA	54,918 ∅	(1.261 Ac)
PARCELS A & B	113,764 ∅	(2.612 Ac)
RIGHT-OF-WAY DEDICATION (PROP. STREET)	17,664 ∅	(0.405 Ac)
RIGHT-OF-WAY DEDICATION (GAMBRILL RD.)	10,027 ∅	(0.230 Ac)
TOTAL	196,373 ∅	(4.508 Ac)

PDH-2 ZONE	REQUIRED	PROVIDED
NUMBER OF UNITS	---	7 SINGLE-FAMILY DETACHED
MAXIMUM DENSITY	2 DU/AC	1.55 DU/AC
MINIMUM LOT AREA	N/R	6,590 ∅ ±
AVERAGE LOT AREA	N/R	7,800 ∅ ±
MAXIMUM BUILDING HEIGHT	N/R	35'
MINIMUM YARDS	N/R	SEE DETAIL THIS SHEET
OPEN SPACE	20% (0.90 Ac)	53% (2.40 Ac±)
PARKING	2 spaces/ unit (14 total spaces)	2 spaces/ unit (14 total spaces)



TYPICAL LOT LAYOUT

SCALE : 1" = 20'

NOTES :
- EXTENSIONS INTO REQUIRED YARDS ARE TO BE PERMITTED IN ACCORDANCE WITH ARTICLE 2-412.
- DECKS MAY BE PERMITTED IN ACCORDANCE WITH ARTICLE 2-412, WHICH ALLOWS A 12' EXTENSION INTO THE REQUIRED MINIMUM YARD, BUT SET BACK AT LEAST FIVE (5) FEET FROM PROPERTY LINE(S).
- EACH UNIT IS TO HAVE TWO(2) 8.5' x 18.0' PARKING SPACES IN THE DRIVEWAY

COMMONWEALTH OF VIRGINIA
C. ANTHONY T. OWENS
Lic. No. 034522
5-2-14
PROFESSIONAL ENGINEER

DEVELOPER

THE CHRISTOPHER COMPANIES
10461 WHITE GRANITE ROAD
SUITE 103
OAKTON, VIRGINIA 22124
(703) 352-5950

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8 TREE PRESERVATION INVENTORY
9 & 10 DRAINAGE MAPS & OUTFALL ANALYSIS

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DATE : FEBRUARY 10, 2014
REVISED : MAY 1, 2014

NO.	DATE	REVISION PRIOR TO APPROVAL

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EXISTING CONDITIONS PLAN

CORBETT MANOR

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
ANTHONY T. OWENS
Lic. No. 034522
5-2-14
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	REVIEW BY	APPROVD.	DATE
	REVISIONS			

DESIGN	DRAFT	APPROVED	DATE	SCALE
KJV	KJV	HMF	FEB. 2014	HORIZ.1" = 30' VERT: — —

SHEET 2 OF 10

PRJ NO: 13-511

TYPE: CDP/FDP

Attached Xrefs: 00-F0500/00-R0401/00-R0301

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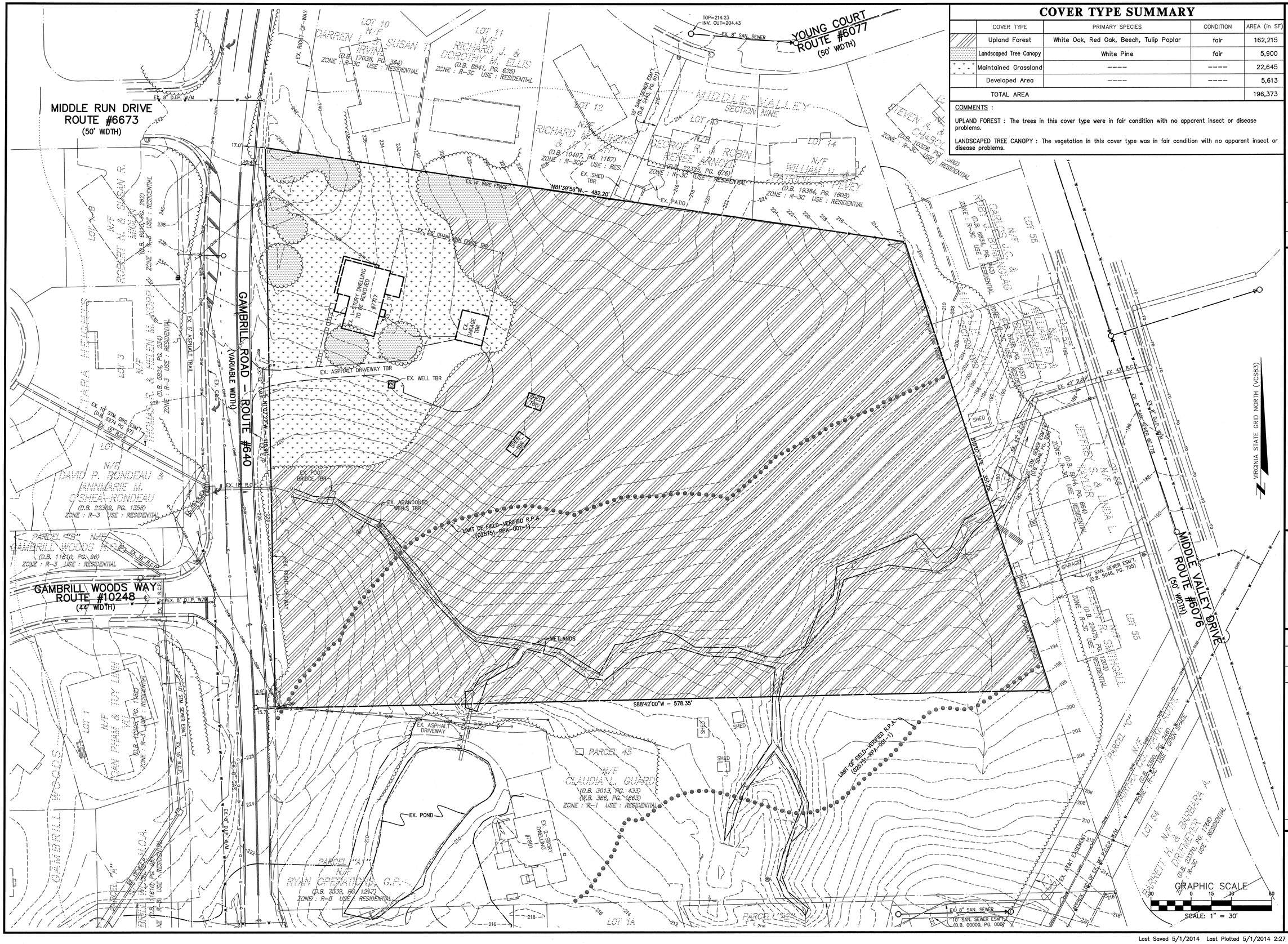

COVER TYPE SUMMARY

COVER TYPE	PRIMARY SPECIES	CONDITION	AREA (in SF)
Upland Forest	White Oak, Red Oak, Beech, Tulip Poplar	fair	162,215
Landscaped Tree Canopy	White Pine	fair	5,900
Maintained Grassland	----	----	22,645
Developed Area	----	----	5,613
TOTAL AREA			196,373

COMMENTS :

UPLAND FOREST : The trees in this cover type were in fair condition with no apparent insect or disease problems.

LANDSCAPED TREE CANOPY : The vegetation in this cover type was in fair condition with no apparent insect or disease problems.

NO.	DATE	REVISION PRIOR TO APPROVAL

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EXISTING VEGETATION MAP

CORBETT MANOR

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
KEVIN T. OWENS
Lic. No. 034532
5-2-14
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	REVIEW APPRVD	DATE
	REVISIONS	BY	

DESIGN KJV	DRAFT KJV		
APPROVED HMF	DATE FEB. 2014		
SCALE HORIZ: 1" = 30' VERT: ----			

SHEET 3 OF 10

PRJ NO: 13-511

TYPE: CDP/FDP

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kvestal

LEGEND

- EXISTING CONTOUR (402)
- EXISTING INDEX CONTOUR (400)
- RPA BOUNDARY
- ENVIRONMENTAL QUALITY CORRIDOR
- LIMITS OF CLEARING & GRADING
- EXISTING TREELINE
- PROPOSED TREELINE
- EX. STORM DRAIN & EASEMENT
- PROPOSED STORM DRAIN
- EX. SAN. SEWER & EASEMENT
- PROPOSED SANITARY SEWER
- EX. WATERMAIN & EASEMENT
- PROPOSED WATERMAIN
- EX. GAS MAIN
- EXISTING UTILITY LINE & POLE

NO.	DATE	REVISION PRIOR TO APPROVAL
1.	5-1-14	REVISED LAYOUT & CLEARING LIMITS (KJV)

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CONCEPTUAL / FINAL DEVELOPMENT PLAN

CORBETT MANOR

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
ANTHONY T. OWENS
Lic. No. 034522
5-2-14
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	REVIEW APPROVD.	DATE
	REVISIONS	BY	

DESIGN KJV	DRAFT KJV	APPROVED	
		DATE FEB. 2014	
		SCALE HORIZ.: 1" = 30' VERT: ---	

SHEET 4 OF 10

PRJ NO: 13-511

TYPE: CDP/FDP

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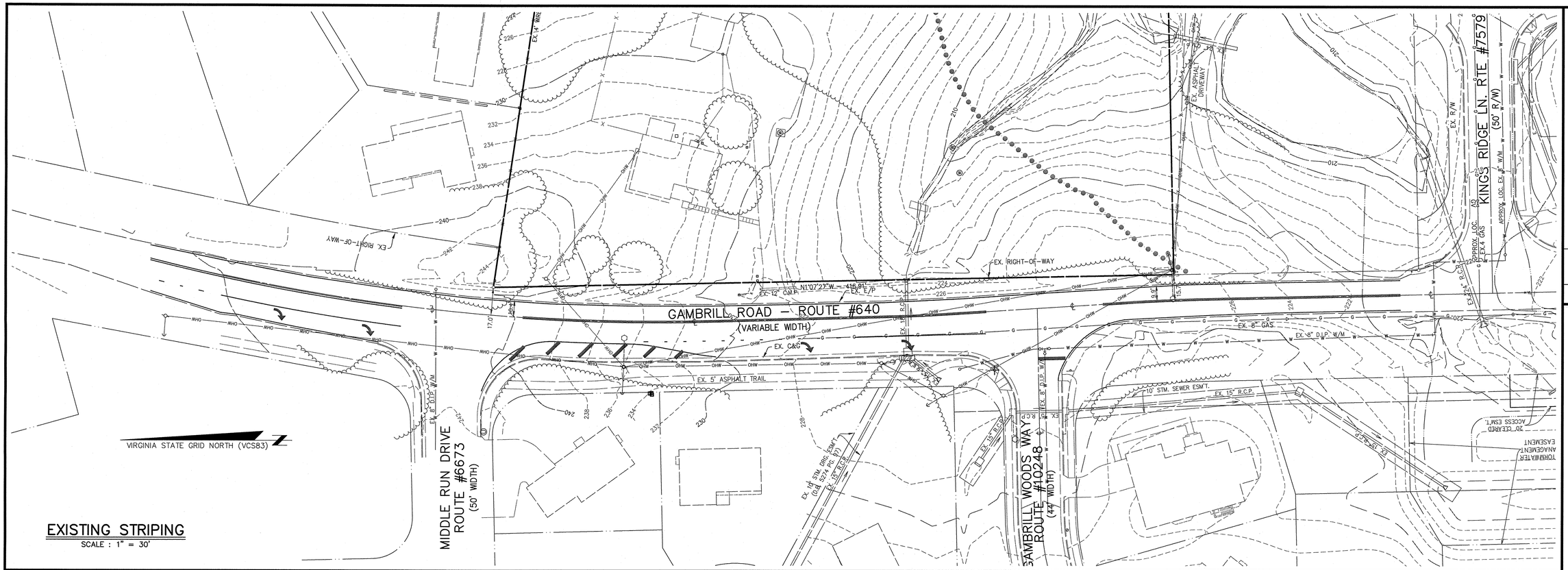

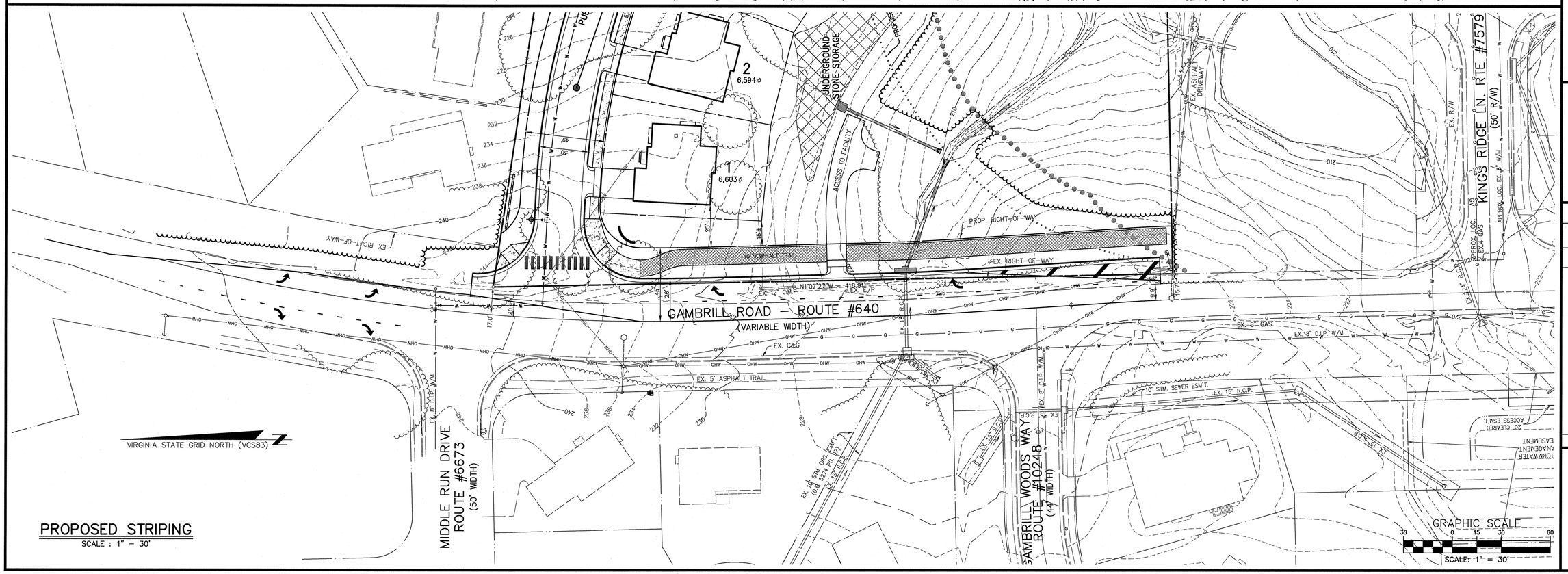

NO.	DATE	REVISION PRIOR TO APPROVAL
1.	5-1-14	NEW SHEET (KJV)

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STRIPING PAN

CORBETT MANOR

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
ANTHONY T. OWENS
Lic. No. 034522
5-2-14
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	BY	APPRVD.	DATE
	REVISIONS			

DESIGN KJV	DRAFT KJV
APPROVED PHW	APPROVED PHW
DATE FEB. 2014	
SCALE HORIZ: 1" = 30' VERT: ---	

SHEET	OF
5	10

PRJ NO: 13-511
TYPE: CDP/FDP

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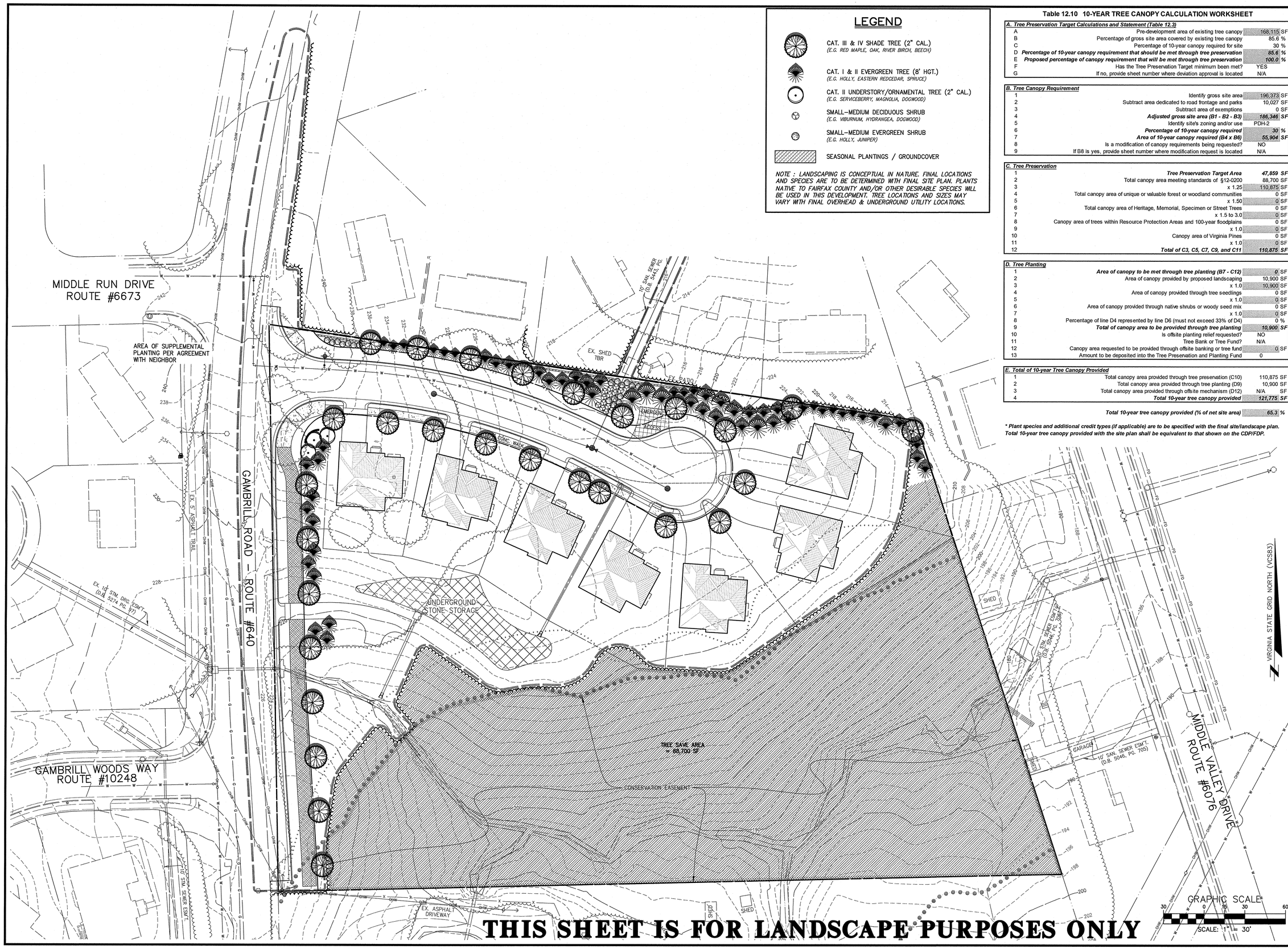

LEGEND

- CAT. III & IV SHADE TREE (2" CAL.) *(E.G. RED MAPLE, OAK, RIVER BIRCH, BEECH)*
- CAT. I & II EVERGREEN TREE (8' HGT.) *(E.G. HOLLY, EASTERN REDCEDAR, SPRUCE)*
- CAT. II UNDERSTORY/ORNAMENTAL TREE (2" CAL.) *(E.G. SERVICEBERRY, MAGNOLIA, DOGWOOD)*
- SMALL–MEDIUM DECIDUOUS SHRUB *(E.G. VIBURNUM, HYDRANGEA, DOGWOOD)*
- SMALL–MEDIUM EVERGREEN SHRUB *(E.G. HOLLY, JUNIPER)*
- SEASONAL PLANTINGS / GROUNDCOVER

NOTE : LANDSCAPING IS CONCEPTUAL IN NATURE. FINAL LOCATIONS AND SPECIES ARE TO BE DETERMINED WITH FINAL SITE PLAN. PLANTS NATIVE TO FAIRFAX COUNTY AND/OR OTHER DESIRABLE SPECIES WILL BE USED IN THIS DEVELOPMENT. TREE LOCATIONS AND SIZES MAY VARY WITH FINAL OVERHEAD & UNDERGROUND UTILITY LOCATIONS.

Table 12.10 10-YEAR TREE CANOPY CALCULATION WORKSHEET

A. Tree Preservation Target Calculations and Statement (Table 12.3)			
A	Pre-development area of existing tree canopy	168,115	SF
B	Percentage of gross site area covered by existing tree canopy	85.6	%
C	Percentage of 10-year canopy required for site	30	%
D	***Percentage of 10-year canopy requirement that should be met through tree preservation***	***85.6***	***%***
E	***Proposed percentage of canopy requirement that will be met through tree preservation***	***100.0***	***%***
F	Has the Tree Preservation Target minimum been met?	YES	
G	If no, provide sheet number where deviation approval is located	N/A	
B. Tree Canopy Requirement			
1	Identify gross site area	196,373	SF
2	Subtract area dedicated to road frontage and parks	10,027	SF
3	Subtract area of exemptions	0	SF
4	***Adjusted gross site area (B1 - B2 - B3)***	***186,346***	***SF***
5	Identify site's zoning and/or use	PDH-2	
6	***Percentage of 10-year canopy required***	***30***	***%***
7	***Area of 10-year canopy required (B4 x B6)***	***55,904***	***SF***
8	Is a modification of canopy requirements being requested?	NO	
9	If B8 is yes, provide sheet number where modification request is located	N/A	
C. Tree Preservation			
1	***Tree Preservation Target Area***	***47,859***	***SF***
2	Total canopy area meeting standards of §12-0200	88,700	SF
3	x 1.25	110,875	SF
4	Total canopy area of unique or valuable forest or woodland communities	0	SF
5	x 1.50	0	SF
6	Total canopy area of Heritage, Memorial, Specimen or Street Trees	0	SF
7	x 1.5 to 3.0	0	SF
8	Canopy area of trees within Resource Protection Areas and 100-year floodplains	0	SF
9	x 1.0	0	SF
10	Canopy area of Virginia Pines	0	SF
11	x 1.0	0	SF
12	***Total of C3, C5, C7, C9, and C11***	***110,875***	***SF***
D. Tree Planting			
1	***Area of canopy to be met through tree planting (B7 - C12)***	***0***	SF
2	Area of canopy provided by proposed landscaping	10,900	SF
3	x 1.0	10,900	SF
4	Area of canopy provided through tree seedlings	0	SF
5	x 1.0	0	SF
6	Area of canopy provided through native shrubs or woody seed mix	0	SF
7	x 1.0	0	SF
8	Percentage of line D4 represented by line D6 (must not exceed 33% of D4)	0	%
9	***Total of canopy area to be provided through tree planting***	***10,900***	***SF***
10	Is offsite planting relief requested?	NO	
11	Tree Bank or Tree Fund?	N/A	
12	Canopy area requested to be provided through offsite banking or tree fund	0	SF
13	Amount to be deposited into the Tree Preservation and Planting Fund	0	
E. Total of 10-year Tree Canopy Provided			
1	Total canopy area provided through tree preservation (C10)	110,875	SF
2	Total canopy area provided through tree planting (D9)	10,900	SF
3	Total canopy area provided through offsite mechanism (D12)	N/A	SF
4	***Total 10-year tree canopy provided***	***121,775***	***SF***
	Total 10-year tree canopy provided (% of net site area)	***65.3***	***%***

**** Plant species and additional credit types (if applicable) are to be specified with the final site/landscape plan. Total 10-year tree canopy provided with the site plan shall be equivalent to that shown on the CDP/FDP.***

THIS SHEET IS FOR LANDSCAPE PURPOSES ONLY

NO.	DATE	
1.	5-1-14	REVISED LANDSCAPING & TREE COVER CALCULATIONS (KJV)

REVISION PRIOR TO APPROVAL

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CONCEPTUAL LANDSCAPE PLAN

CORBETT MANOR

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
ANTHONY F. OWENS
Lic. No. 034522
5-2-14
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	REVIEW BY	APPROV.	DATE
	REVISIONS			

DESIGN KJV	DRAFT KJV
APPROVED HMF	
DATE FEB. 2014	
SCALE HORIZ: 1" = 30' VERT: ---	

SHEET	OF
6	10

PRJ NO: 13-511
TYPE: CDP/FDP

Attached Xrefs: 03-F0500/00-R0401/00-R0301/00-F0700

Last Saved 5/2/2014 Last Plotted 5/2/2014 1:16 PM Sheet No:\13511\DWG\00-FG601

THIS SHEET IS FOR TREE PRESERVATION PURPOSES ONLY--NOT TO BE USED FOR THE CALCULATION OF TREE SAVE AREAS

LEGEND

- OFF-SITE TREE TO BE SAVED *
- CRITICAL ROOT ZONE (1' RAD./1" DBH)
- ON-SITE TREE TO BE SAVED
- TREE TO BE REMOVED
- LIMITS OF CLEARING & GRADING
- TP — TREE PROTECTION OR SUPER SILT FENCE
- RP — ROOT PRUNING

* TREES WHICH HAVE TRUNKS LOCATED OFFSITE HAVE ***NOT*** BEEN COUNTED TOWARD THE SITE'S TOTAL TREE CANOPY. PLEASE ONLY USE THE LANDSCAPE PLAN **(SHEET 6)** FOR WHAT CONSTITUTES TREE SAVE AREAS.

NO.	DATE	REVISION PRIOR TO APPROVAL
1.	5-1-14	REVISED TREES TO BE SAVED AND REMOVED (KJV)

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TREE PRESERVATION PLAN

CORBETT MANOR

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
ANTHONY T. OWENS
Lic. No. 034522
5-2-14
PROFESSIONAL ENGINEER

NO.	DESCRIPTION REVISIONS	REVIEW BY	APPROV.	DATE

DESIGN	DRAFT	APPROVED	DATE	SCALE
BLM	BLM	HMF	FEB. 2014	HORIZ: 1" = 30' VERT: ---

SHEET	OF
7	10

PRJ NO: 13-511
TYPE: CDP/FDP

Attached Xrefs: 00-F0500/00-R0401/00-R0301/00-F0700

Last Saved 5/2/2014 Last Plotted 5/2/2014 1:22 PM Sheet N:\13511\DWG\00-F6801

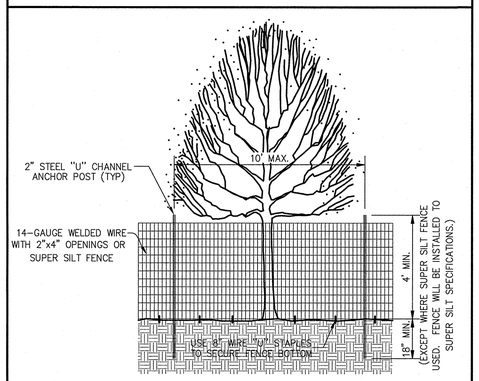
TREE PROTECTION AREA
DO NOT ENTER

ZONA DE PROTECCIÓN DE ÁRBOLES
NO ENTRE

NOTES: 1. TREE PROTECTION SIGNS SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.
2. BILINGUAL SIGNS WILL BE POSTED ON THE TREE PROTECTION FENCE AT LEAST EVERY 30 FEET.
3. SIGN SHOWN IS FOR INFORMATIONAL PURPOSES ONLY AND ACTUAL SIGNS MAY DIFFER IN APPEARANCE AND WORDING. CONTENT SHALL BE EQUAL.

TREE PROTECTION SIGN DETAIL

NOT TO SCALE

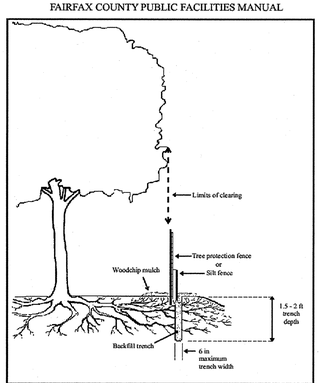


NOTE : TREE PROTECTION FENCING SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION

TREE PROTECTION FENCE DETAIL

NOT TO SCALE

FAIRFAX COUNTY PUBLIC FACILITIES MANUAL



Ref. Sec. 12-0702.1 Rev. 10-01	ROOT PRUNING	PLATE NO. 7-12	STD. NO.

NOTE: TREES TO BE PRESERVED WITH IVY OR VINES GROWING ON THEM SHALL HAVE ALL VINES CUT AT THE BASE OF THE VINE. VINES SHALL BE LEFT TO DIE ON THE TREE. NO VINES OR IVY SHALL BE PULLED FROM THE TRUNK OR LIMBS OF THE TREE AS THIS CAN CAUSE INJURY TO THE TRUNK OR LIMBS.

TREE PRESERVATION NARRATIVE:

Trees as referred to in this document are considered those trees that are protected by limits of clearing and grading and shown for preservation on approved plans.

1. **Flagging/ Site Layout:** Prior to requesting a pre-construction meeting, the contractor is responsible for flagging the limits of clearing and grading. These limits shall not exceed that shown on the approved plans

2. **Pre-Construction Meeting:** After clearing limits have been staked a meeting shall be requested by the contractor to walk with owner or owner's designated representative, arborist/forester hired by owner, site superintendant, clearing contractor and UFMD, DPWES representative to make minor adjustments as necessary to observe trees listed in tree preservation activity schedule. Additional preservation activities will be coordinated with the Urban Forestry Division at this time.

3. **Tree Protection Approval:** Selective tree removals, root pruning, and tree protection fence installation should be completed prior to any demolition or land clearing operations. An UFMD, DPWES, representative shall be contacted a minimum of three (3) days prior to any site clearing, grading or demolition activities are to begin, to inspect the site to insure that the tree protection has been installed.

4. **Protection of Existing Understory Vegetation and Soil Conditions in Tree Preservation Areas:** All tree preservation-related work occurring in or adjacent to tree preservation areas shall be accomplished in a manner that minimizes damage to vegetation to be preserved in the lower canopy environment, and to the existing top soil and leaf litter layers that provide nourishment and protection to that vegetation. Any removal of any vegetation or soil disturbance in tree preservation areas including the removal of plant species that may be perceived as noxious or invasive, such as poison ivy, greenbrier, multi-floral rose, etc. shall be subject to the review and approval of UFMD, DPWES

5. **Use of Equipment:** Except as qualified herein, the use of motorized equipment in tree preservation areas will be limited to hand-operated equipment such as chainsaws, wheel barrows, rake 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 UFMD.

6. **Root Pruning:** Tree preservation Areas shall be root pruned along the limits of clearing adjacent to significant trees 20" dbh and greater or as noted by the project arborist in the Tree Inventory and Activity Schedule. Root pruning shall be a minimum of 18" deep and shall be accomplished using a small walk behind trencher or air spade. The root pruning trench shall be backfilled immediately. Silt fence/super silt fence installation utilizing walk behind trencher can be substituted for root pruning as long as a minimum depth of 18" is achieved.

7. **Mulching:** Mulch shall be placed in areas as indicated on approved plans and/or extending in a swath fifteen feet wide along the Limit of Disturbance adjacent to indicated trees at minimum. Trees/Areas indicated will be mulched with wood chips generated from on site clearing or tree removal and pruning operations when possible. Shredded hardwood mulch from offsite maybe utilized if approved by project arborist. Mulch shall be spread in a uniform depth of three (3") inches by hand.

8. **Tree Protection Fencing:** Tree Preservation Areas shall be protected by per the attached Tree Protection Detail. Super-Silt fencing may be used for tree protection fencing as approved by UFMD. Fencing shall be erected at the limits of clearing and grading as shown on the demolition, and erosion and sediment control sheets. The installation of all tree protection fence types should be performed under the supervision of a certified arborist, and accomplished in a manner that does not harm existing vegetation that is to be preserved. Tree protection fencing shall be made clearly visible to all construction personnel. Bilingual signs stating "TREE PRESERVATION AREA – KEEP OUT" shall be affixed to the tree preservation fence at least every 30 feet, and three (3) working days prior to the commencement of any clearing, grading, or demolition activities, but subsequent to the installation of the tree protection devices including fencing. UFMD and the district supervisor staff shall be notified and given the opportunity to inspect the site to assure 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 UFMD.

9. **Tree Protection Maintenance**: Fencing shall be maintained in an upright position for the duration of the project. Tree protection fencing that is damaged as a result of land clearing operations shall be repaired prior to the end of the workday that the damage occurred.

10. **Pruning:** All pruning shall conform to current ANSI A300-2001 pruning standards. Trees designated for pruning shall be crown cleaned of deadwood 2" and greater unless otherwise specified by the project arborist. The interior of trees shall not be stripped of live tissue, suckers, or epicormic branches. Damaged, crossing, and rubbing branches may be removed at the arborist's discretion. Debris from pruning operations may be chipped and deposited into the Tree Preservation Areas and spread by hand to a uniform depth or be removed from the site.

11. **Site Monitoring**: During any clearing or tree/vegetation structure removal or transplantation of vegetation on the subject site, a representative of the applicant shall be present to monitor the process and ensure that the activities are conducted as approved by UFMD. The applicant should retain the services of a certified arborist to monitor all construction work and tree preservation efforts in order to ensure conformance with all tree preservation conditions, and UFMD approvals. Monitoring inspections to ensure compliance with tree preservation plans and other jurisdictional requirements shall be conducted daily during initial site clearing operations, weekly through the erosion and sediment control phase, weekly for four weeks there after and monthly for 12 months. The 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.

NOTE: AS STATED BY SECTION 12–0507.1B IN THE PUBLIC FACILITIES MANUAL, DEAD TREES AND TREES THAT REPRESENT A POTENTIAL HAZARD TO HUMAN HEALTH AND PROPERTY WHICH ARE 12 INCHES IN DIAMETER OR GREATER THAT RESIDE IN ONE OF THE TWO FOLLOWING AREAS WILL BE IDENTIFIED IN THE TREE INVENTORY.

AREA 1. 100 FEET FROM THE PROPOSED LIMITS OF CLEARING AND GRADING WITHIN THE UNDISTURBED AREA.

AREA 2. 10 FEET FROM THE PROPOSED LIMITS OF CLEARING AND GRADING WITHIN THE DISTURBED AREA.

TREE INVENTORY AND ACTIVITIES SPREADSHEET

Tree #	COMMON NAME	SCIENTIFIC BINOMIAL	DBH(in)	CONDITION	COMMENTS	STATUS	ACTIVITIES: ROOT PRUNE	MULCH	TREE FENCE	PRUNE	FERTILIZE	CABLE	CAMBISTAT	TREAT PESTS
2086	Tulip Poplar	Liriodendron tulipifera	24	72	Uneven canopy, uneven one-sided growth, canopy crowding, limb dieback, epicormic sprouting, crowding from adjacent tree	Remove								
2301	American Beech	Fagus grandiflora	27	78	Buttressing roots, epicormic sprouting, poor form, growing canopy around adjacent tree, limb dieback, canopy crowding	Remove								
2302	Pin Oak	Quercus palustris	36	78	Buttressing roots, bark cracking near the base of the tree, dual leaders, limb dieback, epicormic sprouting	Preserve	X		X	X				
2313	Tulip Poplar	Liriodendron tulipifera	24	62	Rotting trunk, buttressing roots, canopy & limb dieback	Remove								
2314	White Oak	Quercus alba	12	72	Buttressing roots, small & uneven canopy, poor canopy form	Preserve	X		X	X				
2315	White Oak	Quercus alba	12	62	Missing canopy, rotting at root collar, missing bark, epicormic sprouting, secondary leader broken	Remove								
2316	Tulip Poplar	Liriodendron tulipifera	20	78	Buttressing roots, poor trunk form, canopy crowding, uneven growth, limb dieback	Remove								
2319	White Oak	Quercus alba	20	78	Buttressing roots, small canopy, uneven growth, limb dieback, epicormic sprouting	Preserve	X		X	X				
2378	White Oak	Quercus alba	18	72	Extensive english ivy coverage on trunk, large limb dieback, canopy crowding, uneven canopy, canopy dieback, epicormic sprouting	Preserve	X		X	X				
2459	Red Maple	Acer rubrum	15	75	Epicormic sprouting, poor branching, poor canopy form, small canopy, canopy crowding, limb dieback	Preserve			X	X				
2460	White Oak	Quercus alba	16	72	Small & sparse canopy, epicormic sprouting, poor trunk form, limb & canopy dieback, poor condition	Preserve	X		X	X				
2461	Northern Red Oak	Quercus rubra	36	72	Buttressing roots, limb dieback, poor canopy form, uneven canopy	Preserve	X		X	X				
2466	Tulip Poplar	Liriodendron tulipifera	36	81	Buttressing roots, limb dieback, uneven canopy, epicormic sprouting	Remove								
2467	White Oak	Quercus alba	20	81	Inclusive bark, dual leader, leaning canopy, limb dieback, canopy crowding, small canopy, epicormic sprouting	Remove								
2468	White Oak	Quercus alba	21	62	Buttressing rooots, small & uneven canopy, limb dieback, epicormic sprouting, dual trunk, signs of decay	Remove								
2469	Pin Oak	Quercus palustris	18	78	Epicormic sprouting, leaning canopy, buttressing roots, uneven canopy, limb dieback, small canopy	Remove								
2475	Tulip Poplar	Liriodendron tulipifera	15	69	Buttressing roots, multileader, jog in trunk, small canopy, poor trunk & canopy form	Remove								
2477	White Oak	Quercus alba	15	75	Epicormic sprouting, uneven growth, dual leader, secondary leader dead, canopy crowding, limb dieback, poor canopy form, small canopy	Preserve	X		X	X				
2515	White Pine	Pinus strobus	17	84	Limb dieback, uneven growth, buttressing roots	Remove								
2516	Tulip Poplar	Liriodendron tulipifera	54	78	Dual trunk, inclusive bark, poor branching, poor canopy form, small uneven canopy, limb dieback	Remove								
2716	Tulip Poplar	Liriodendron tulipifera	36	72	Buttressing roots, canopy crowding, epicormic sprouting, large limb dieback	Remove								
2718	Northern Red Oak	Quercus rubra	26	75	Offsite - Poor canopy , small canopy, one-sided growth, epicormic sprouting, limb dieback, canopy crowding. Tree shall be removed with written permission from owner.	Remove								
2722	Northern Red Oak	Quercus rubra	24	75	Poor canopy form, small and uneven canopy, limb dieback, epicormic sprouting, canopy crowding	Remove								
2723	Tulip Poplar	Liriodendron tulipifera	30	75	Canopy crowding, uneven & one-sided growth, limb & canopy dieback, epicormic sprouting	Remove								
2726	Northern Red Oak	Quercus rubra	15	78	Canopy dieback, large limb dieback, poor condition, buttressing roots	Remove								
2730	White Oak	Quercus alba	16	75	Epicormic sprouting, large limb dieback, small uneven canopy, one-sided growth, canopy crowding	Remove								
2736	American Beech	Fagus grandiflora	24	62	Trunk rotted through at base, dual leaders, canopy dieback, limb dieback, epicormic sprouting, buttressing roots, canopy crowding	Remove								
2740	Pin Oak	Quercus palustris	18	72	Buttressing roots, limb dieback, poor canopy form, small & uneven canopy, butt bulge	Preserve	X		X	X				
2741	White Oak	Quercus alba	22	69	Buttressing roots, dual leader, epicormic sprouting, limb dieback, poor canopy form	Preserve	X		X	X				
2742	Northern Red Oak	Quercus rubra	34	78	Dual leader, inclusive bark, buttressing roots, limb dieback, canopy dieback, epicormic sprouting	Remove								
2743	Northern Red Oak	Quercus rubra	19	69	Buttressing roots, leaning trunk, small & uneven canopy, limb dieback, poor trunk form	Preserve	X		X	X				
2754	Pin Oak	Quercus palustris	30	62	Buttressing roots, limb dieback, leaning trunk, uneven canopy, poor trunk & canopy form, significant decay and hole at base	Preserve	X		X	X				
2756	White Oak	Quercus alba	18	69	Buttressing roots, leaning trunk, jog in trunk, limb dieback, poor form	Preserve	X		X	X				
2762	Pin Oak	Quercus palustris	25	72	Buttressing roots, uneven canopy, forest grown, goiter	Remove								
2763	White Oak	Quercus alba	21	72	Buttressing roots, uneven canopy, limb dieback, poor canopy form	Preserve	X		X	X				
2764	White Oak	Quercus alba	16	75	Poor trunk form, limb dieback, jog in trunk, small canopy	Preserve	X		X	X				
2765	Red Maple	Acer rubrum	12	75	Buttressing roots, small canopy, forest grown, dual leader	Remove								
2766	Virginia Pine	Pinus virginiana	14	72	Buttressing roots, leaning trunk, forest grown	Preserve	X		X	X				
2767	White Oak	Quercus alba	27	81	Uneven one-sided growth, limb dieback, epicormic sprouting	Preserve	X		X	X				
2899	White Pine	Pinus strobus	20	78	Uneven growth, one-sided growth, limb dieback, english ivy growing up the trunk	Remove								
2903	White Pine	Pinus strobus	12	78	Uneven growth, one-sided growth, crowding, limb dieback	Remove								
2914	Red Pine	Pinus resinosa	12	68	Leaning trunk, extensive vine cover, dual leaders, large limb dieback, extensive borer holes, poor condition	Remove								
2944	White Pine	Pinus strobus	18	78	Leaning trunk, limb dieback, epicormic sprouting, crowding	Remove								
2945	White Pine	Pinus strobus	24	78	Lower limb dieback, dead broken limb, dieback on one side, uneven growth	Remove								
2948	White Pine	Pinus strobus	20	81	Poor branching, inclusive bark, epicormic sprouting, uneven growth	Remove								
2968	Northern Red Oak	Quercus rubra	26	75	Offsite - Has tree house built around the trunk, limb dieback, canopy crowding, uneven canopy. Tree shall be removed with written permission from owner.	Remove								
2969	Red Maple	Acer rubrum	12	75	Buttressing roots, poor branching, epicormic sprouting, poor form, poor canopy form, canopy crowding	Remove								
2978	Red Maple	Acer rubrum	13	78	Canopy crowding, buttressing roots, epicormic sprouting, limb dieback, uneven one-sided growth, small canopy	Remove								
2979	Pignut Hickory	Carya glabra	16	75	Limb dieback, broken limb, epicormic sprouting, uneven growth, dual leaders, inclusive bark	Remove								
10000	Northern Red Oak	Quercus rubra	18	68	Offsite - Multi-leader, one leader dead and rotting, limb dieback, small canopy, poor condition	Preserve	X		X	X				
10001	Northern Red Oak	Quercus rubra	15	75	Offsite - Multi-trunk, two smaller trunks are dead, epicormic sprouting, poor canopy form, inclusive bark, limb dieback, pruned limbs, leaning trunks	Preserve	X		X	X				
10003	Northern Red Oak	Quercus rubra	12	78	Offsite - Buttressing roots, dual leader, limb dieback, epicormic sprouting, uneven & one-sided growth	Preserve	X		X	X				
10011	Virginia Pine	Pinus virginiana	15	84	Offsite - Limb dieback, canopy crowding. Tree shall be removed with written permission from property owner.	Remove								
10012	Pin Oak	Quercus palustris	14	84	Offsite - Inclusive bark, dual leaders, canopy crowding, uneven canopy, small broken limb. Tree shall be removed with written permission from owner.	Remove								

THIS SHEET IS FOR TREE PRESERVATION PURPOSES ONLY

NO.	DATE	REVISION
1.	5-1-14	REVISED TREES TO BE SAVED AND REMOVED (KJV)

REVISION PRIOR TO APPROVAL

CPJ Associates
Charles P. Johnson & Associates, Inc.
Civil and Environmental Engineers • Planners • Landscape Architects • Surveyors
3959 Pender Dr., Ste. 210 Fairfax, VA 22030 703-385-7555 Fax: 301-273-8595
www.cpja.com • Silver Spring, MD • Gaithersburg, MD • College Park, MD • Frederick, MD • Fairfax, VA

TREE PRESERVATION INVENTORY

CORBETT MANOR

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
ANTHONY T. OWENS
Lic. No. 034522
5-2-14
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	REVIEW BY	APPROVD.	DATE
	REVISIONS			

DESIGN BLM | DRAFT BLM | APPROVED HMF | DATE FEB. 2014 | HORIZ. — | VERT. —

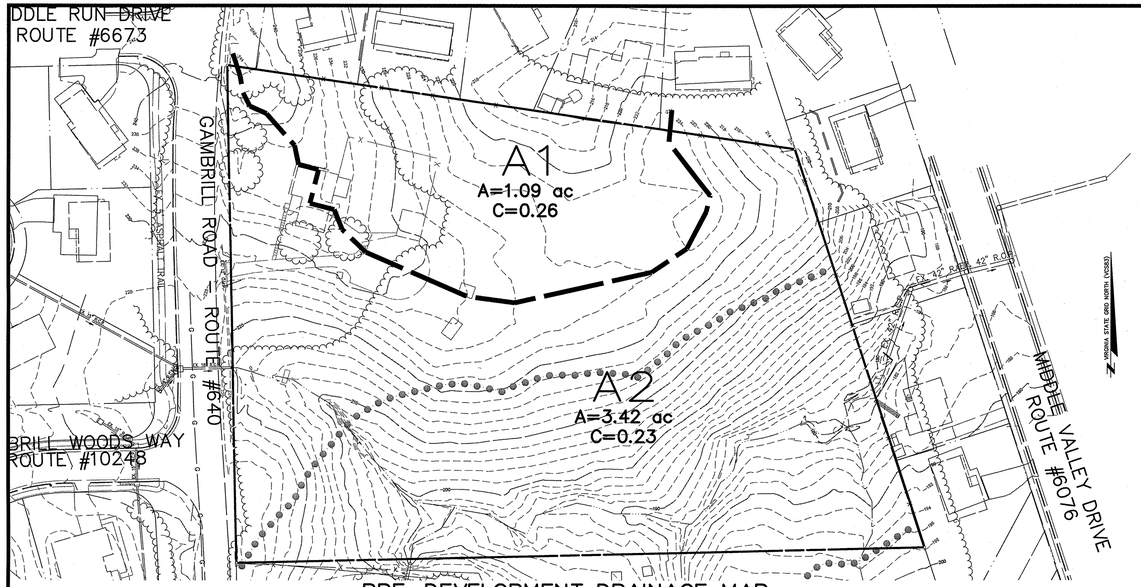
SHEET 8 OF 10

PRJ NO: 13-511

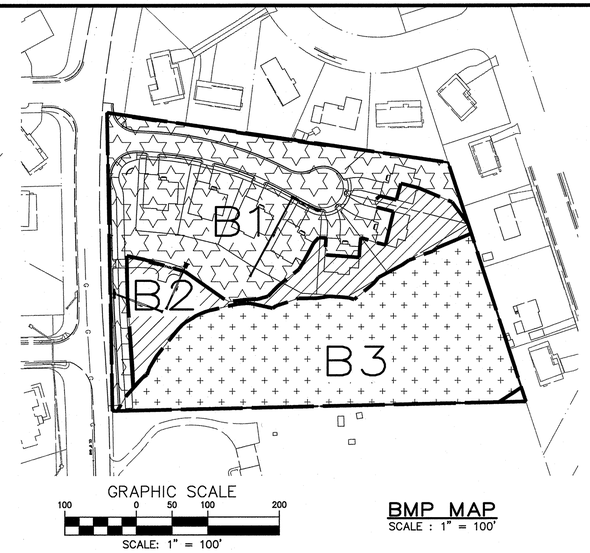
TYPE: CDP/FDP

Attached Xrefs: 00-F0500/00-R0401/00-R0301/00-F0700

Last Saved 5/1/2014 Last Plotted 5/1/2014 2:40 PM Sheet N:\13511\DWG\00-F6801



PRE-DEVELOPMENT DRAINAGE MAP
SCALE : 1" = 60'



BMP MAP
SCALE : 1" = 100'

BMP LEGEND

- B1 – ONSITE UNTREATED
- B2 – OVERLAND FLOW TO CONSERVATION AREA
- B3 – ONSITE CONSERVATION AREA

SWM SUMMARY

SWM SUMMARY

	AREA (AC)	PRE -C	POST -C
A1 - ONSITE TO MIDDLE VALLEY SECTION 9	0.13	0.25	0.30
A2 - ONSITE TO MIDDLE VALLEY SECTION 2	3.57	0.20	0.25
A3 - ONSITE TO STONE STORAGE	0.81	0.24	0.69

EXISTING SITE CONDITIONS:

Q_2 =	4.51	AC X	5.45	X	0.23	=	5.73	CFS
Q_{10} =	4.51	AC X	7.27	X	0.23	=	7.64	CFS

ONSITE UNCONTROLLED:

Q_2 =	3.70	AC X	5.45	X	0.26	=	5.17	CFS
Q_{10} =	3.70	AC X	7.27	X	0.26	=	6.90	CFS

ALLOWABLE STONE STORAGE RELEASE:

Q_2 =	5.73			-	5.17	=	0.56	CFS
Q_{10} =	7.64			-	6.90	=	0.74	CFS

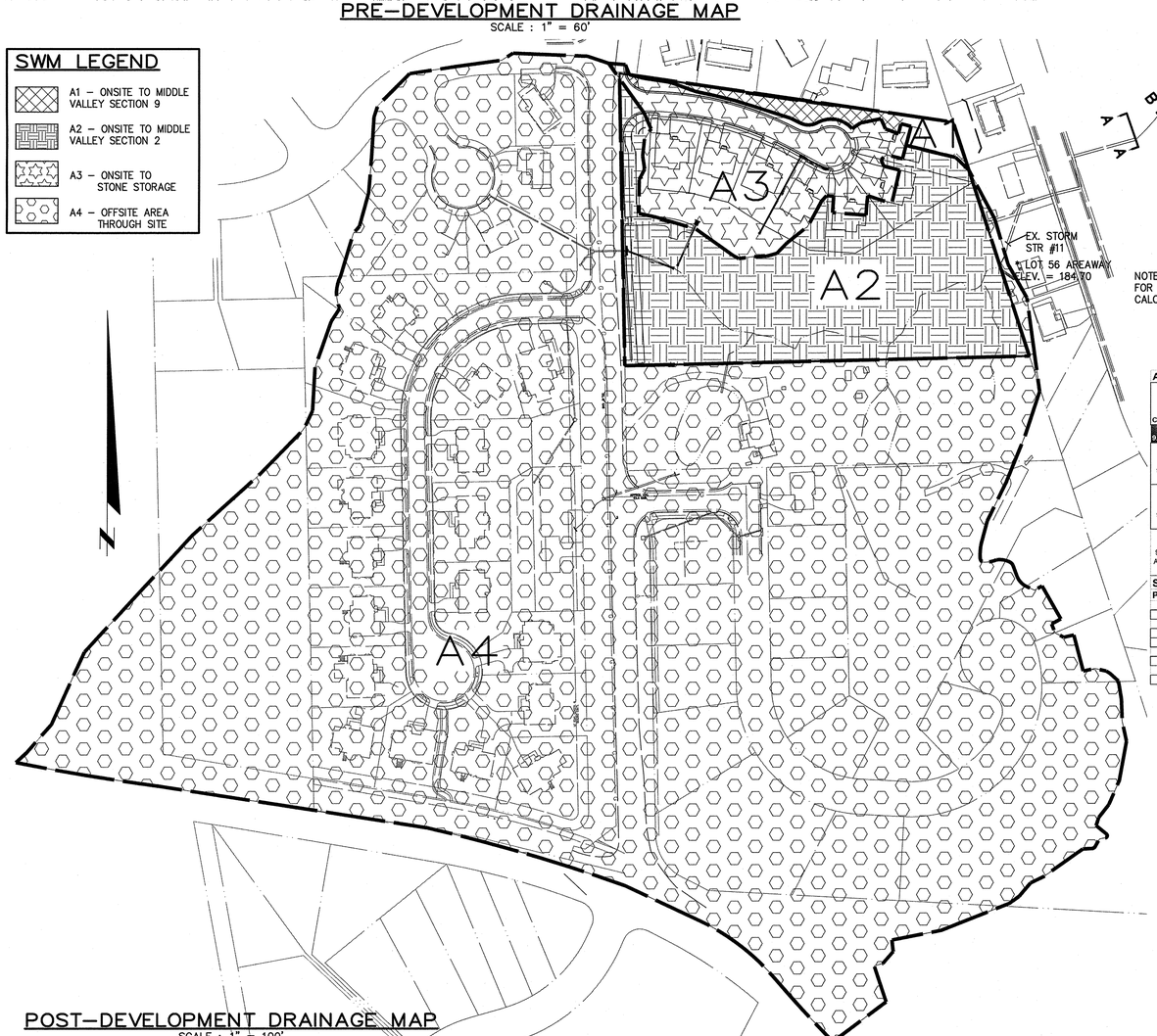
DISCHARGE FROM STONE STORAGE ROUTING:

Q_2 =	**0.46**	CFS
Q_{10} =	**0.55**	CFS

NOTE : THESE AREAS AND COMPUTATIONS ARE PRELIMINARY AND MAY BE ADJUSTED WITH THE FINAL ENGINEERING PLANS.

SWM LEGEND

- A1 – ONSITE TO MIDDLE VALLEY SECTION 9
- A2 – ONSITE TO MIDDLE VALLEY SECTION 2
- A3 – ONSITE TO STONE STORAGE
- A4 – OFFSITE AREA THROUGH SITE



NOTE : SEE SHEET 10 FOR CROSS-SECTION CALCULATIONS

POST-DEVELOPMENT DRAINAGE MAP
SCALE : 1" = 100'

PRELIMINARY BMP COMPUTATIONS

Drainage Area A Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) – undisturbed, protected forest/open space or reforested land	0.00	2.33	0.00	0.10	2.43
Managed Turf (acres) – disturbed, graded for yards or other turf to be mowed/managed	0.00	1.51	0.00	0.15	1.66
Impervious Cover (acres)	0.00	0.30	0.00	0.12	0.42
				Total	4.51

Apply Runoff Reduction Practices to Reduce Treatment Volume & Post-Development Load in Drainage Area A

Credit	Unit	Description of Credit	Credit	Credit Area (acres)	Volume from Upstream RR Practice (cf)	Runoff Reduction (cf)	Remaining Runoff Volume (cf)	Phosphorus Efficiency (%)	Phosphorus Load from Upstream RR Practices (lbs)	Untreated Phosphorus Load to Practice (lbs.)	Phosphorus Removed By Practice (lbs.)	Remaining Phosphorus Load (lbs.)	Downstream Treatment to be Employed
9. Sheetflow to Filter/Open Space													
9.a. Sheetflow to Conservation Area with A/B Soils (Spec #2)	impervious acres draining to conserved open space	75% runoff volume reduction for treated area	0.75	0.16	0	414	138	0	0.00	0.32	0.24	0.08	
	turf acres draining to conserved open space	75% runoff volume reduction for treated area	0.75	0.61	0	341	114	0	0.00	0.27	0.20	0.07	
9.b. Sheetflow to Conservation Area with C/D Soils (Spec #2)	impervious acres draining to conserved open space	50% runoff volume reduction for treated area	0.50	0.02	0	34	34	0	0.00	0.04	0.02	0.02	
	turf acres draining to conserved open space	50% runoff reduction volume for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00	
9.c. Sheetflow to Vegetated Filter Strip in A Soils or Compost Amended B/C/D Soils (Spec #2 & #4)	impervious acres draining to conserved open space	50% runoff volume reduction for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00	
	turf acres draining to conserved open space	50% runoff reduction volume for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00	

Site Results

Phosphorus

TOTAL TREATMENT VOLUME (cf)	3,742
TOTAL PHOSPHOROUS LOAD REDUCTION REQUIRED (LB/YEAR)	0.34
RUNOFF REDUCTION (cf)	790
PHOSPHOROUS LOAD REDUCTION ACHIEVED (LB/YR)	0.46
ADJUSTED POST-DEVELOPMENT PHOSPHOROUS LOAD (TP) (lb/yr)	1.73
REMAINING PHOSPHOROUS LOAD REDUCTION (LB/YR) NEEDED	CONGRATULATIONS!! YOU EXCEEDED THE TARGET REDUCTION BY 0.1 LB/YEAR!!

TOTAL PHOSPHOROUS REMOVAL REQUIRED ON SITE (lb/yr)	0.34
TOTAL RUNOFF REDUCTION IN D.A. A (cf)	790
PHOSPHORUS REMOVAL FROM RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	0.46

SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS

PHOSPHORUS REMOVAL BY PRACTICES THAT DO NOT REDUCE RUNOFF VOLUME IN D.A. A	0.00
TOTAL PHOSPHORUS REMOVAL IN D.A. A (lb/yr)	0.46

SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS

NITROGEN REMOVAL BY PRACTICES THAT DO NOT REDUCE RUNOFF VOLUME IN D.A. A	0.00
TOTAL NITROGEN REMOVAL IN D.A. A (lb/yr)	3.30

OUTFALL, SWM, AND BMP NARRATIVE

THE SITE CONSISTS OF 4.51 ACRES, ON WHICH 7 SINGLE-FAMILY DETACHED UNITS ARE PROPOSED TO BE CONSTRUCTED. THE SITE IS HEAVILY WOODED, WITH SLOPES AVERAGING ABOUT 19%. THE EXISTING HOUSE AND DRIVEWAY ARE TO BE REMOVED.

THERE IS AN R.P.A. ON THE SOUTHERN PORTION OF THE SITE. AN EXISTING CHANNEL RUNS THROUGH THE SITE, WHICH RECEIVES STORMWATER FROM UPSTREAM OFFSITE PROPERTIES. RUNOFF FROM THE SITE DRAINS TOWARD RESIDENTIAL PROPERTIES TO THE NORTH AND EAST, THEN INTO AN EXISTING CLOSED STORM SEWER SYSTEM PROVIDED IN MIDDLE VALLEY SUBDIVISION SECTIONS 9 & 2(FAIRFAX COUNTY PLANS 2751-SD-001-2 & 1981-SD-002-3). THIS EXISTING CLOSED STORM SEWER SYSTEM DISCHARGES INTO AN EXISTING WELL-DEFINED CHANNEL, AND THEN INTO A MAJOR 100-YR FLOODPLAIN ALONG MIDDLE RUN FOR THE POHICK CREEK WATERSHED TO THE EAST OF THE SITE.

POST-DEVELOPMENT CONDITIONS

PRIVATELY MAINTAINED STONE STORAGE WILL BE PROVIDED WITH THIS DEVELOPMENT AT THE WEST SIDE OF THE SITE. A CLOSED STORM SEWER SYSTEM WILL BE INSTALLED TO COLLECT SOME OF THE SITE'S RUNOFF INTO THE PROPOSED STONE STORAGE. THIS STONE STORAGE WILL PROVIDE STORMWATER MANAGEMENT FOR THE SUBJECT SITE.

AN ANALYSIS OF THE EXISTING STORM SEWER SYSTEM SHOWS THAT IT DISCHARGES INTO AN EXISTING WELL-DEFINED CHANNEL. THREE CROSS-SECTIONS ALONG THE EXISTING CHANNEL HAVE BEEN CUT FROM THE DISCHARGE POINT TO UPSTREAM OF THE 100-YR FLOODPLAIN ALONG MIDDLE RUN. SINCE THE AMOUNT OF POST-DEVELOPMENT FLOW DRAINING INTO THE EXISTING CHANNEL IS BELOW THE PRE-DEVELOPMENT CONDITIONS, THE CHANNEL HAS BEEN ANALYZED BASED ON THE EXISTING FLOW IN THE PRE-DEVELOPMENT CONDITIONS. IT WAS FOUND TO HAVE ADEQUATE CAPACITY TO HANDLE THE FLOWS DRAINING INTO IT (SEE SHEET 10 FOR CHANNEL CALCULATIONS).

THE OVERALL DRAINAGE AREA MAP SHOWN ON SHEET 10 DEPICTS THE DRAINAGE AREA WHERE THE SITE OUTFALLS INTO THE EXISTING FLOODPLAIN ALONG MIDDLE RUN. THE TOTAL SITE AREA (4.51 ACRES) DRAINING INTO THE EXISTING FLOODPLAIN AT POINT "A" IS LESS THAN 1% OF THE OVERALL DRAINAGE AREA (2,509 ACRES) OF THE POHICK CREEK WATERSHED. THE EXISTING STREAM CHANNEL IS WELL-DEFINED WITH STABILIZED BED AND BANK. THEREFORE, PER PFM 6-0203.2B, THE EXTENT OF THE DOWNSTREAM DRAINAGE IS COMPLETED AT POINT "A".

SINCE THE FLOWS FROM THE SITE WILL BE REDUCED BELOW PRE-DEVELOPMENT LEVELS (SEE COMPUTATIONS THIS SHEET), IT IS THEREFORE THE ENGINEER'S OPINION THAT THIS CREATES AN ADEQUATE OUTFALL FOR THIS PROJECT.

BMPs WILL BE PROVIDED VIA SHEET FLOW AND CONSERVATION AREAS. PRELIMINARY CALCULATIONS ON THIS SHEET SHOW THAT THE TOTAL PHOSPHORUS REMOVAL IS IN COMPLIANCE WITH THE VIRGINIA RUNOFF REDUCTION METHOD.

NO.	DATE	REVISION
1.	5-1-14	REVISED SWM, BMP & OUTFALL INFORMATION PRIOR TO APPROVAL

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DRAINAGE MAPS & OUTFALL ANALYSIS

CORBETT MANOR

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
CONTHONY T. OWENS
Lic/ No. 034522
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	REV'W	APPRVD	DATE
	REVISIONS			

DESIGN BFW	DRAFT BFW
APPROVED TMT	DATE FEB. 2014
SCALE HORIZ: AS VERT: SHOWN	

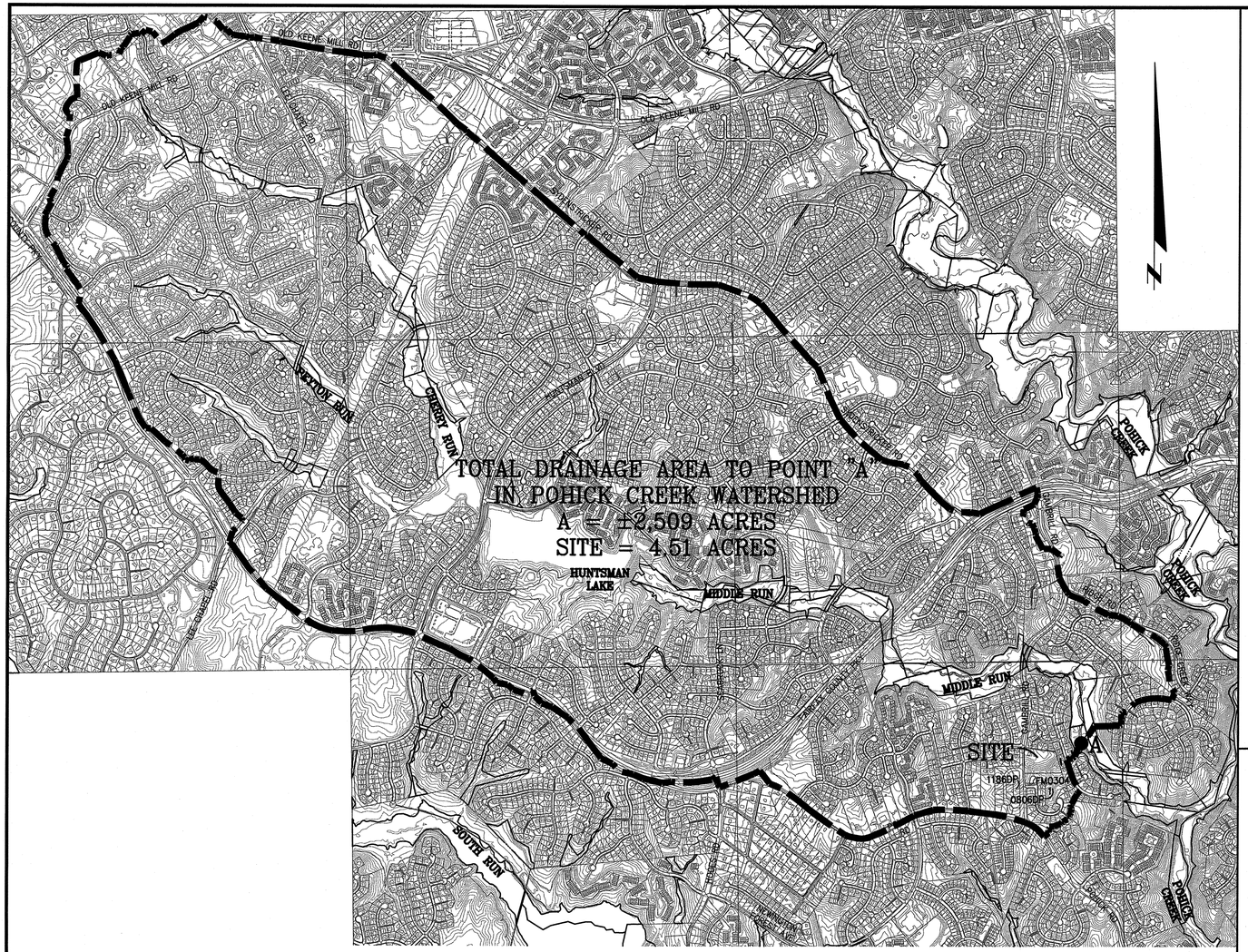
SHEET 9 OF 10

PRJ NO: 13-511

TYPE: CDP/FDP

Attached Xrefs: 00-F0500/00-R0401/00-R0301/00-F0700/98-1

Kvestal



OVERALL DRAINAGE MAP

SCALE : 1" = 1000'

Existing Storm Sewer Computations Outfall

FROM	TO	DRAIN. AREA (ACRES)	RUNOFF COEF. C	C x A INCR	C x A ACCUM	TIME OF CONCENTRATION TIME	TIME OF CONCENTRATION I	Q (cfs) INCR (c.f.s.)	Q (cfs) ACCUM (c.f.s.)	AS-BUILT PIPE DIA. In	AS-BUILT SLOPE Ft/Ft	AS-BUILT "n"	AS-BUILT MAX Q (c.f.s.)	AS-BUILT VEL Ft/Sec	PROFILE LENGTH Ft	PROFILE FALL Ft	PROFILE UPPER INV	PROFILE LOWER INV
		3.42	0.25	0.86	0.86		10	5.92	5.06	5.06	FROM EXISTING SITE							
EX 11	EX 10	26.72	0.48	12.77	13.63		10	5.92	75.61	80.67	42	0.0137	0.013	118.14	13.23	59.00	0.81	174.32	173.51
EX 10	EX 9	---	---	0.00	13.63		10	5.92	0.00	80.67	42	0.0112	0.013	106.84	12.19	47.20	0.53	173.20	172.67
EX 9A	EX 9	1.96	0.49	0.96	0.96		10	5.92	5.69	5.69	15	0.1030	0.013	20.77	14.02	276.80	28.51	201.37	172.86
EX 9	EX 8	2.98	0.50	1.49	16.08		10	5.92	8.82	95.18	42	0.0176	0.013	133.73	15.12	32.40	0.57	172.37	171.80
EX 8	EX 7	0.40	0.90	0.36	16.44		10	5.92	2.13	97.31	42	0.0168	0.013	130.73	14.91	34.50	0.58	170.60	170.02
EX 4	EX 7	1.09	0.26	0.28	0.28		10	5.92	1.68	1.68	FROM EXISTING SITE							
EX 4	EX 7	FROM MIDDLE VALLEY SECTIONS 1 & 9							20.80	22.48	TO EX 7							
EX 7	EX 6	-	-	0.00	16.44		10	5.92	0.00	119.79	42	0.0110	0.013	105.76	12.61	81.80	0.90	167.08	166.18

Proposed Conditions to Existing Storm Sewer Computations Outfall

FROM	TO	DRAIN. AREA (ACRES)	RUNOFF COEF. C	C x A INCR	C x A ACCUM	TIME OF CONCENTRATION TIME	TIME OF CONCENTRATION I	Q (cfs) INCR (c.f.s.)	Q (cfs) ACCUM (c.f.s.)	AS-BUILT PIPE DIA. In	AS-BUILT SLOPE Ft/Ft	AS-BUILT "n"	AS-BUILT MAX Q (c.f.s.)	AS-BUILT VEL Ft/Sec	PROFILE LENGTH Ft	PROFILE FALL Ft	PROFILE UPPER INV	PROFILE LOWER INV
2	1	FROM PROPOSED STONE STORAGE						0.00	**0.55**	42	0.0051	0.013	72.00	#N/A	65.00	0.43	175.43	175.00
1	EX 11	26.72	0.48	12.83	12.83		10	5.92	75.93	76.48	42	0.0050	0.013	71.29	8.50	35.00	0.18	174.75	174.57
		3.57	0.25	0.89	13.72		10	5.92	5.28	81.21	FROM THE SITE							
EX 11	EX 10	---	---	0.00	13.72		10	5.92	0.00	81.76	42	0.0137	0.013	118.14	13.23	59.00	0.81	174.32	173.51
EX 10	EX 9	---	---	0.00	13.72		10	5.92	0.00	81.76	42	0.0112	0.013	106.84	12.19	47.20	0.53	173.20	172.67
EX 9A	EX 9	1.96	0.49	0.96	0.96		10	5.92	5.69	5.69	15	0.1030	0.013	20.77	14.02	276.80	28.51	201.37	172.86
EX 9	EX 8	2.98	0.50	1.49	16.17		10	5.92	8.82	96.27	42	0.0176	0.013	133.73	15.12	32.40	0.57	172.37	171.80
EX 8	EX 7	0.40	0.90	0.36	16.53		10	5.92	2.13	98.40	42	0.0168	0.013	130.73	14.91	34.50	0.58	170.60	170.02
EX 4	EX 7	0.13	0.30	0.04	0.04		10	5.92	0.23	0.23	FROM THE SITE							
EX 4	EX 7	FROM MIDDLE VALLEY SECTIONS 1 & 9							20.80	21.03	TO EX 7							
EX 7	EX 6	-	-	0.00	16.53		10	5.92	0.00	119.43	42	0.0110	0.013	105.76	12.61	81.80	0.90	167.08	166.18

NOTE :SEE SHEET 9 FOR CROSS SECTIONS' LOCATIONS.

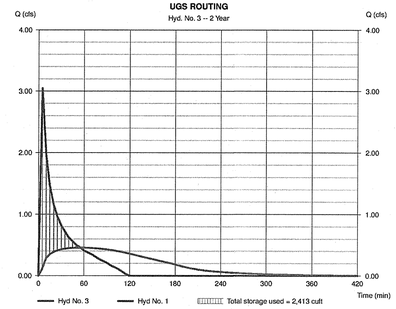
NOTE :SEE SHEET 9 FOR SWM&BMP MAPS AND OUTFALL NARRATIVE.

UGS ROUTING

Hydrograph type = Reservoir
Storm frequency = 2 yrs
Time interval = 5 min
Inflow hyd. No. = 1 - Runoff
Reservoir name = UGS

Peak discharge = 0.457 cfs
Time to peak = 55 min
Hyd. volume = 4,467 cuft
Max. Elevation = 216.02 ft
Max. Storage = 2,413 cuft

Storage indication method used.

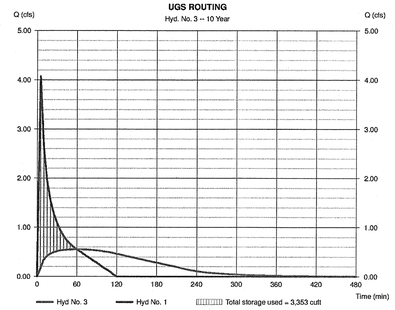


UGS ROUTING

Hydrograph type = Reservoir
Storm frequency = 10 yrs
Time interval = 5 min
Inflow hyd. No. = 1 - Runoff
Reservoir name = UGS

Peak discharge = 0.554 cfs
Time to peak = 60 min
Hyd. volume = 5,963 cuft
Max. Elevation = 216.61 ft
Max. Storage = 3,353 cuft

Storage indication method used.



TOTAL PRE-DEVELOPMENT FLOW TO CROSS SECTION A-A:
EXISTING STORM STRUCTURE #6 DISCHARGE
Q2 =93.08 CFS, Q10 = 119.79 CFS
OVERLAND FLOW TO CROSS SECTION A-A:
A = 0.04 ACRE, C = 0.30
Q2 = 0.05 CFS, Q10 = 0.07 CFS
TOTAL Q2 =93.13 CFS, TOTAL Q10=119.86 CFS

User-defined
Invert Elev (ft) = 165.73
Slope (%) = 3.05
N-Value = 0.035

Calculations
Compute by: Known Q
Known Q (cfs) = 93.13

Highlighted
Depth (ft) = 1.63
Q (cfs) = 93.13
Area (sqft) = 12.70
Velocity (ft/s) = 7.33
Wetted Perim (ft) = 12.77
Crit Depth, Yc (ft) = 1.83
Top Width (ft) = 11.95
EGL (ft) = 2.47

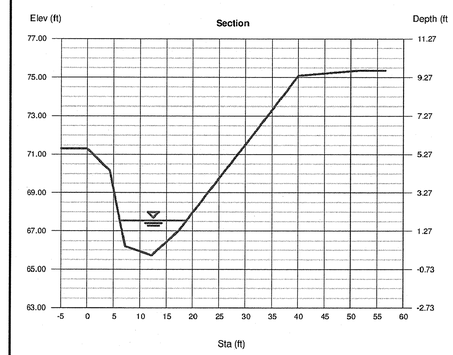
EX CHANNEL X-AA PRE-DEV 2-YR STORM

User-defined
Invert Elev (ft) = 165.73
Slope (%) = 3.05
N-Value = 0.035

Calculations
Compute by: Known Q
Known Q (cfs) = 119.86

Highlighted
Depth (ft) = 1.83
Q (cfs) = 119.86
Area (sqft) = 15.16
Velocity (ft/s) = 7.90
Wetted Perim (ft) = 13.62
Crit Depth, Yc (ft) = 2.07
Top Width (ft) = 12.66
EGL (ft) = 2.80

(Sta, El, n)-(Sta, El, n)...
(0.00, 171.31)-(4.29, 170.16, 0.035)-(7.21, 166.20, 0.035)-(12.21, 165.73, 0.035)-(17.28, 167.00, 0.035)-(40.03, 175.09, 0.035)-(51.52, 175.37, 0.035)



TOTAL PRE-DEVELOPMENT FLOW TO CROSS SECTION B-B:
FROM CROSS SECTION A-A
Q2 =93.13 CFS, Q10 = 119.86 CFS
OVERLAND FLOW TO CROSS SECTION B-B:
A = 1.56 ACRE, C = 0.40
Q2 = 2.87 CFS, Q10 = 3.64 CFS
TOTAL Q2 =96.00 CFS, TOTAL Q10=123.50 CFS

User-defined
Invert Elev (ft) = 163.32
Slope (%) = 3.96
N-Value = 0.050

Calculations
Compute by: Known Q
Known Q (cfs) = 96.00

Highlighted
Depth (ft) = 1.90
Q (cfs) = 96.00
Area (sqft) = 14.03
Velocity (ft/s) = 6.84
Wetted Perim (ft) = 11.23
Crit Depth, Yc (ft) = 1.91
Top Width (ft) = 9.66
EGL (ft) = 2.63

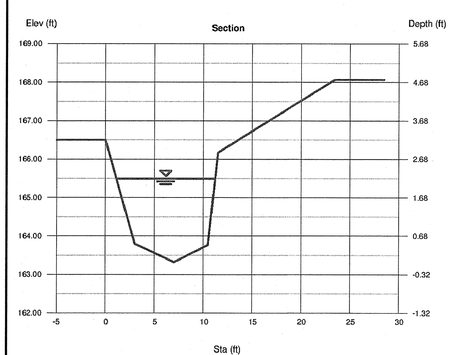
EX CHANNEL X-BB 10-YR STORM

User-defined
Invert Elev (ft) = 163.32
Slope (%) = 3.96
N-Value = 0.050

Calculations
Compute by: Known Q
Known Q (cfs) = 123.50

Highlighted
Depth (ft) = 2.17
Q (cfs) = 123.50
Area (sqft) = 16.69
Velocity (ft/s) = 7.40
Wetted Perim (ft) = 11.93
Crit Depth, Yc (ft) = 2.19
Top Width (ft) = 10.07
EGL (ft) = 3.02

(Sta, El, n)-(Sta, El, n)...
(0.00, 166.50)-(3.00, 163.80, 0.050)-(7.00, 163.32, 0.050)-(10.48, 163.77, 0.050)-(11.48, 166.17, 0.050)-(23.48, 168.07, 0.050)



TOTAL PRE-DEVELOPMENT FLOW TO CROSS SECTION C-C:
FROM CROSS SECTION B-B
Q2 =96.00 CFS, Q10 = 123.50 CFS
OVERLAND FLOW TO CROSS SECTION C-C:
A = 1.56 ACRE, C = 0.40
Q2 = 0.54 CFS, Q10 = 0.69 CFS
TOTAL Q2 =96.54 CFS, TOTAL Q10=124.19 CFS

User-defined
Invert Elev (ft) = 159.80
Slope (%) = 3.96
N-Value = 0.050

Calculations
Compute by: Known Q
Known Q (cfs) = 96.54

Highlighted
Depth (ft) = 1.68
Q (cfs) = 96.54
Area (sqft) = 15.43
Velocity (ft/s) = 6.26
Wetted Perim (ft) = 14.19
Crit Depth, Yc (ft) = 1.71
Top Width (ft) = 13.54
EGL (ft) = 2.29

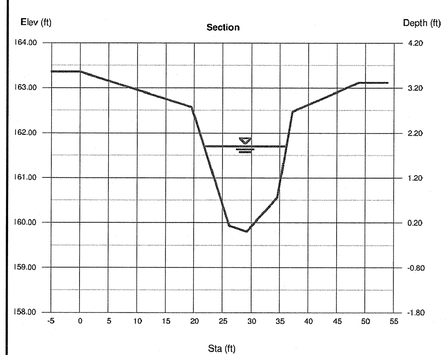
EX CHANNEL X-CC 10-YR STORM

User-defined
Invert Elev (ft) = 159.80
Slope (%) = 3.96
N-Value = 0.050

Calculations
Compute by: Known Q
Known Q (cfs) = 124.79

Highlighted
Depth (ft) = 1.90
Q (cfs) = 124.79
Area (sqft) = 18.50
Velocity (ft/s) = 6.74
Wetted Perim (ft) = 15.16
Crit Depth, Yc (ft) = 1.95
Top Width (ft) = 14.40
EGL (ft) = 2.61

(Sta, El, n)-(Sta, El, n)...
(0.00, 163.50)-(19.55, 162.57, 0.050)-(26.22, 159.93, 0.050)-(29.22, 159.80, 0.050)-(34.56, 160.56, 0.050)-(37.20, 162.47, 0.050)-(48.84, 163.12, 0.050)



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NO.	DATE	REVISION
1.	5-1-14	REVISED SWM, BMP & OUTFALL INFORMATION

OUTFALL ANALYSIS

CORBETT MANOR

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
ANTHONY Y. OWENS
Lic. No. 034522
5-2-14
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	BY	APPROVD.	DATE
	REVISIONS			

DESIGN BFW | DRAFT BFW | APPROVED AHF | DATE FEB. 2014 | SCALE HORIZ: --- VERT: ---

SHEET 10 OF 10

PRJ NO: 13-511

TYPE: CDP/FDP

Attached Xrefs: 98-1/89-3/97-2/88-4/98-2/89-4/88-1/89-3/88-2/89-1