SPECIAL EXCEPTION PLAT

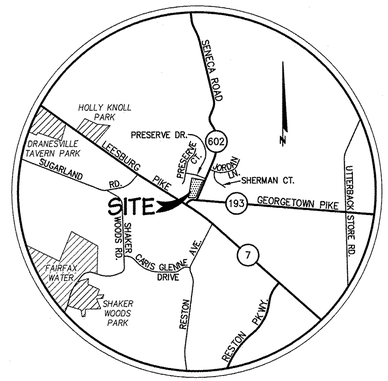
SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SE 2016-DR-009

REVISIONS		
NO.	SHEET NUMBER AND REVISION DESCRIPTION	DATE
1.	(2) REV. SITE TABS, WAIVER KEY MAP & SWM CHECKLIST. (3) REVISED SITE AREA TO INCLUDE VACATED R/W. (4) VACATED R/W, SHIFTED LAYOUT, ADDED HISTORICAL MONUMENT. (5&6) REVISED LANDSCAPING & CALCULATIONS. (7) REVISED SECTIONS & ADDED EMERGENCY VEHICLE PLAN. (8) REVISED TYPICAL STREET SECTION. (10&11) REVISED TREES TO BE SAVED. (12) REVISED MAPS, COMPUTATIONS & NARRATIVE. (13) REVISED UGS RELEASE. (14) REVISED SITE AREA. (17) REVISED VRRM SPREADSHEET. (18) REVISED UGS AND ROUTINGS. (19) NEW SHEET.	7-19-16
2.	(2) ADDED PERIPHERAL LANDSCAPING MODIFICATION. (4) SHIFTED PHARMACY 4 FEET TO THE WEST. (5&6) REVISED LANDSCAPING & CALCULATIONS. (7) REVISED SECTION 'C'. (9) REVISED ELEVATIONS.	8-22-16
3.	(2) REVISED SITE TABS, ADDED WAIVERS. (3) REVISED SITE AREA TO REMOVE VACATED R/W. (4) REMOVED R/W VACATION, REVISED LAYOUT. (5&6) REVISED LANDSCAPING & CALCULATIONS. (7) REVISED SECTIONS 'B' & 'C'. (8) REVISED SENECA ROAD CROSS-SECTION. (9) REVISED ELEVATIONS.	9-26-16

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



VICINITY MAP
SCALE : 1" = 2000'

ARCHITECT

Larson Design Group
1000 COMMERCE PARK DRIVE
SUITE 201
WILLIAMSPORT, PENNSYLVANIA 17701
(570) 323-6603

ATTORNEY

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APPLICANT

SENECA CORNER ASSOCIATES, LLC
1280 MARYLAND AVENUE, SW
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(240) 315-3160

DATE : APRIL 26, 2016
REVISED : JULY 19, 2016
AUGUST 22, 2016
SEPTEMBER 26, 2016

CIVIL ENGINEER

CHARLES P. JOHNSON & ASSOCIATES
3959 PENDER DRIVE
SUITE 210
FAIRFAX, VIRGINIA 22030
(703) 385-7555

TRAFFIC ENGINEER

WELLS + ASSOCIATES
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SUITE 610
McLEAN, VIRGINIA 22102
(703) 917-6620

SHEET INDEX

1 COVER SHEET
2 NOTES & DETAILS
3 EXISTING CONDITIONS PLAN & VEGETATION MAP
4 SPECIAL EXCEPTION PLAT
5 LANDSCAPE PLAN
6 TREE CANOPY CALCULATIONS
7 CROSS-SECTIONS
8 TYPICAL ROAD SECTION AND SIGHT DISTANCE PLAN & PROFILE
9 ARCHITECTURAL ELEVATIONS
10 TREE PRESERVATION PLAN
11 TREE PRESERVATION INVENTORY & DETAILS
12 OUTFALL NARRATIVE AND SWM MAPS
13 EXISTING STORM SEWER MAP
14 OVERALL DRAINAGE MAP
15-16 PHOTOS OF SITE OUTFALL
17 RUNOFF REDUCTION METHOD SPREADSHEET
18 STORMWATER ROUTINGS
19 PHOTOMETRIC PLAN

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
09/26/16
PROFESSIONAL ENGINEER

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 how 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(s) 4 . If infiltration is proposed the soils should be tested for suitability prior to submission of the development plan and results of the infiltration test provided as part of the description of the facility.

☑ 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)
UGS	2.43±	0.21±	2.64±	2,918±	16,189±	N/A

☑ 4. Onsite drainage channels, outfalls, and pipe systems are shown on Sheet(s) 4 & 13 . Pond inlet and outlet pipe systems are shown on Sheet(s) 4 .

☑ 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet(s) 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(s) 5 .

☑ 7. Stormwater management and BMP narratives, including Virginia Runoff Reduction Spreadsheet and descriptions of how detention and best management practices requirements will be met are provided on Sheet(s) 12 & 17 .

☑ 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(s) 12 & 14 . If the outfall is proposed to be improved off-site it should be specifically noted.

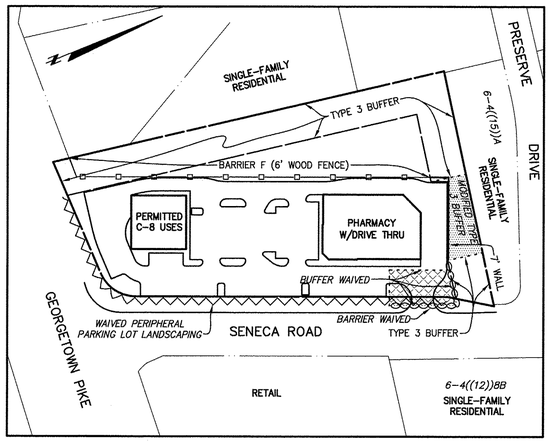
☑ 9. A detailed description and analysis of how the channel protection requirements and flood protection requirements of each numbered outfall will be satisfied per Stormwater Management Ordinance and Public Facilities Manual are provided on Sheet(s) 12 .

☑ 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 Sheet(s) 2 & 3 .

☐ 11. A submission waiver is requested for N/A .

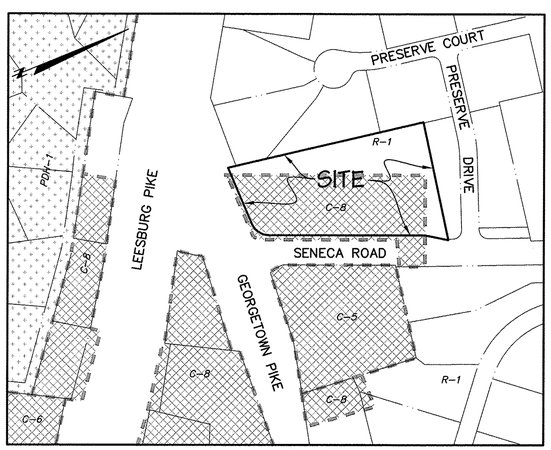
☐ 12. Stormwater management is not required because N/A .

Revised : 8/4/2015



BUFFER/BARRIER KEY MAP

SCALE : 1" = 100'



ZONING MAP

SCALE : 1" = 200'

NOTES

1. THE SUBJECT PROPERTIES DELINEATED ON THIS PLAN ARE LOCATED ON FAIRFAX COUNTY TAX ASSESSMENT MAP NUMBER 6-4((3))1. THE SITE IS CURRENTLY ZONED R-1 & C-8. THE PURPOSE OF THIS SPECIAL EXCEPTION REQUEST IS TO ALLOW A DRIVE-THROUGH PHARMACY AS A CATEGORY 5 USE.
2. THE PROPERTIES HEREON ARE CURRENTLY UNDER THE OWNERSHIP OF GREAT SENECA PROPERTIES, LLC, IN DEED BOOK 20092 AT PAGE 1228 AMONG THE LAND RECORDS OF FAIRFAX COUNTY, VIRGINIA.
3. BOUNDARY AND TOPOGRAPHIC INFORMATION FOR THE SUBJECT PROPERTY AND ADJACENT STREETS IS THE RESULT OF A FIELD RUN SURVEY PREPARED BY CHARLES P. JOHNSON & ASSOCIATES, DATED JULY 2015. OFFSITE TOPOGRAPHY WAS TAKEN FROM EXISTING RECORDS. CONTOUR INTERVAL EQUALS TWO (2) FEET NGVD 1929.
4. THERE ARE NO 100-YEAR FLOODPLAINS ON-SITE. NO FLOODPLAIN OR DRAINAGE STUDIES ARE REQUIRED FOR THIS PROJECT.
5. THERE ARE NO RESOURCE PROTECTION AREAS (RPAs) OR ENVIRONMENTAL QUALITY CORRIDORS (EQCs) IMPACTING THIS SITE. A WATER QUALITY IMPACT ASSESSMENT WILL NOT 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. 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.
12. NO DENSITY REDUCTIONS ARE REQUIRED BY ZONING ORDINANCE SECTION 2-308. DENSITY CREDIT FOR ANY DEDICATION OF LAND FOR PUBLIC USE SHALL BE RESERVED FOR THE SUBJECT PROPERTY IN ACCORDANCE WITH THE PROVISIONS SET FORTH IN PAR. 4 OF §2-308 OF THE ZONING ORDINANCE.
13. PROPOSED PUBLIC IMPROVEMENTS :
    - WATER SERVICE TO BE PROVIDED BY AN EXISTING 12" MAIN LOCATED IN SENECA ROAD
    - SANITARY SERVICE TO BE PROVIDED BY AN EXISTING 8" MAIN LOCATED ON-SITE
14. THE INTERNAL AND EXTERNAL TRAFFIC AND PEDESTRIAN CIRCULATION SYSTEMS SHALL BE PROVIDED AS GENERALLY SHOWN ON THIS PLAN, SUBJECT TO FINAL ENGINEERING.
15. ALL PUBLIC STREETS SHALL CONFORM TO FAIRFAX COUNTY AND/OR VDOT STANDARDS AND SPECIFICATIONS, UNLESS OTHERWISE MODIFIED. PRIVATE STREETS AND INTERIOR TRAVELWAYS SHALL CONFORM TO THE FAIRFAX COUNTY PFM, UNLESS OTHERWISE MODIFIED.
16. A TRAIL IS REQUIRED ALONG GEORGETOWN PIKE PER THE FAIRFAX COUNTY TRAILS PLAN. THERE IS AN EXISTING TEN-FOOT ASPHALT TRAIL THAT SATISFIES THIS REQUIREMENT.
17. 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.
18. THE LANDSCAPE CONCEPTS, SCREENING MEASURES, AND PROPOSED TREE COVER PROVIDED SHALL COMPLY WITH THE PROVISIONS OF CHAPTER 12 OF THE FAIRFAX COUNTY PFM. LANDSCAPING SHOWN ON THIS PLAN IS FOR SCHEMATIC PURPOSES ONLY, AND IS SUBJECT TO CHANGE WITH FINAL ENGINEERING. THE LOCATION OF LANDSCAPING MAY BE ADJUSTED TO ACCOMMODATE UTILITY, SIGNAGE, SIGHT DISTANCE, AND OTHER REQUIREMENTS, FROM THOSE SHOWN ON THIS PLAN.
19. SIGNS MAY BE PROVIDED IN ACCORDANCE WITH THE PROVISIONS SET FORTH IN ARTICLE 12 OF THE ZONING ORDINANCE.
20. ALL LIGHTING ON SITE WILL BE SHIELDED AND LOCATED IN SUCH A MANNER AS TO REDUCE GLARE ON ADJACENT PROPERTIES IN ACCORDANCE WITH THE STANDARDS SET FORTH IN ARTICLE 14 OF THE ZONING ORDINANCE.
21. THE PROPOSED UTILITY ALIGNMENTS SHOWN ON THE PLAN ARE SCHEMATIC AND SUBJECT TO CHANGE WITH FINAL ENGINEERING DESIGN. UTILITY PLANS AND PROFILES, AS WELL AS ALL NECESSARY EASEMENTS WILL BE PROVIDED WITH THE SITE PLAN(S).
22. A DEVELOPMENT SCHEDULE HAS NOT BEEN DETERMINED AT THIS TIME.
23. SEE SHEET 9 FOR ARCHITECTURAL ELEVATIONS OF THE PHARMACY.
24. FIRE LANE LOCATION(S), AND THE STRIPING AND SIGNAGE THEREOF, WILL BE PROVIDED WITH THE SITE PLAN.
25. 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 SPECIAL EXCEPTION PLAT, PROVIDED SUCH ARE IN ACCORDANCE WITH THE MINOR MODIFICATIONS PROVISION IN SECTION 9-004 OF THE ZONING ORDINANCE.
26. NOTWITHSTANDING THAT THE SUBJECT PROPERTY MAY BE DIVIDED INTO TWO OR MORE PARCELS, THE ENTIRE AREA OF THE SITE WILL BE CONSIDERED AS A SINGLE UNIT FOR THE PURPOSE OF APPLICATION OF THE ZONING ORDINANCE FOR REQUIREMENTS SUCH AS. BUT NOT LIMITED TO, LANDSCAPING, OPEN SPACE, TREE COVER, TREE PRESERVATION, STORMWATER MANAGEMENT AND TMDLs, FLOOR AREA RATIO, DENSITY, PARKING, ETC.
27. THE PROJECT MAY BE DEVELOPED IN PHASES, WITHOUT THE NEED FOR AMENDMENTS OR INTERPRETATIONS.
28. THE STORMWATER MANAGEMENT DESIGN OR TYPES OF FACILITIES MAY BE CHANGED, BASED ON ENGINEERING OR FINAL DESIGN.

WAIVERS & MODIFICATIONS

IN ACCORDANCE WITH THE ADOPTED COMPREHENSIVE PLAN, THE PROPOSED DEVELOPMENT WILL PROVIDE COMMERCIAL DEVELOPMENT AT A 0.19 FLOOR AREA RATIO AND WILL CONFORM TO ALL APPLICABLE ORDINANCES, REGULATIONS, AND ADOPTED STANDARDS, EXCEPT AS NOTED BELOW :

- A MODIFICATION OF THE TRANSITIONAL SCREENING REQUIREMENT OF ZONING ORDINANCE §13-303 AGAINST 6-4((15))A IS HEREBY REQUESTED.
- A WAIVER OF THE BARRIER REQUIREMENT (6' WOOD FENCE) AGAINST A PORTION OF 6-4((15))A IS HEREBY REQUESTED.
- WAIVERS OF THE TRANSITIONAL SCREENING REQUIREMENT OF ZONING ORDINANCE §13-303 AND THE BARRIER REQUIREMENT OF ZONING ORDINANCE §13-304 AGAINST 6-4((12))8B ARE HEREBY REQUESTED.
- A WAIVER OF THE ACCESS MANAGEMENT REQUIREMENT FOR THE ENTRANCE AND RIGHT-TURN TAPER WILL BE REQUESTED FROM VDOT.
- A WAIVER OF ZONING ORDINANCE §13-302.2 IS HEREBY REQUESTED TO ALLOW A PORTION OF A BARRIER TO BE LOCATED WITHIN THE R-1 ZONING DISTRICT.
- A WAIVER OF THE PERIPHERAL PARKING LOT LANDSCAPING REQUIREMENT OF ZONING ORDINANCE §13-203.2 IS HEREBY REQUESTED.
- A WAIVER OF THE 10-FOOT MINIMUM PARKING SETBACK TO A FRONT LOT LINE OF ZONING ORDINANCE §11-102.8 IS HEREBY REQUESTED.
- A WAIVER IS HEREBY REQUESTED OF THE REQUIREMENT OF ZONING ORDINANCE §17-201.3.B TO PROVIDE A TRAVEL LANE TO AN ADJACENT PROPERTY ALONG A COLLECTOR STREET.

SITE TABULATIONS

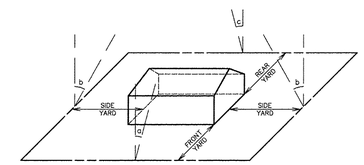
	C-8 ZONE	R-1 ZONE	TOTAL
SITE AREA	*84,599¢ (1,942 Ac)*	*56,143¢ (1.289 Ac)*	*140,742¢ (3.231 Ac)*

C-8 ZONE	REQUIRED	PROVIDED
GROSS FLOOR AREA	---	17,705¢
FLOOR AREA RATIO (C-8 AREA ONLY)	0.50	±0.21
MINIMUM LOT AREA	40,000¢	84,599¢
MINIMUM LOT WIDTH	200'	±182'*
MAXIMUM BUILDING HEIGHT	40'	24'
MINIMUM YARDS :		
FRONT	45' AOBP/40' MIN.	45' AOBP/55' MIN.
SIDE	N/A	N/A
REAR	20'	N/A (CORNER LOT)
LANDSCAPED OPEN SPACE (C-8 AREA ONLY)	15% (0.32 Ac)	15% (0.32 Ac)

* THE LOT WIDTH ALONG GEORGETOWN PIKE IS AN EXISTING NON-CONFORMING CONDITION.

MINIMUM REQUIRED YARD FOR BUILDING WITH 24' HEIGHT

COMMERCIAL



FRONT YARD : a/1 45' WITH A BUILDING HEIGHT OF 24', THE FRONT YARD = 40' BUT NOT LESS THAN 40'

SIDE YARD : b/1 0 WITH A BUILDING HEIGHT OF 24', THE SIDE YARD = 0 BUT NOT LESS THAN 0

REAR YARD : c/1 0 WITH A BUILDING HEIGHT OF 24', THE REAR YARD = 20' BUT NOT LESS THAN 20'

PARKING & LOADING TABULATIONS

	GROSS FLOOR AREA	NET FLOOR AREA*
PHARMACY (RETAIL)	11,945¢	8,959¢
OTHER C-8 USE(S)	5,760¢	4,320¢
TOTAL	17,705¢	13,279¢

* NET FLOOR AREA IS ASSUMED TO BE 75% OF THE GROSS FLOOR AREA

	REQUIRED	PROVIDED
PARKING (SHOPPING CENTER) : 4.3 spaces/1,000¢ GFA +		
PHARMACY	52 spaces	74 spaces
OTHER C-8 USE(S)	25 spaces**	24 spaces
TOTAL :	**77 spaces****	**98 spaces**
HANDICAP PARKING :	4 spaces (incl. 1 van-accessible)	6 spaces (incl. 4 van-accessible)
LOADING (RETAIL SALES ESTABLISHMENT) : 1 space/1st 10,000¢ GFA + 1 space/ea. add'l. 15,000¢ GFA, or major fraction thereof		
PHARMACY	1 space	1 space
OTHER C-8 USE(S)	1 space**	1 space
TOTAL :	**2 spaces**	**2 spaces**

** THE REQUIREMENT MAY VARY WITH THE FINAL BUILDING SIZE AND USE.

NO.	DATE	REVISION	BY	APPRV'D	DATE
3.	9-26-16	REVISED SITE TABS, ADDED WAIVERS (KJV)			
2.	8-19-16	ADDED PERIPHERAL LANDSCAPING MODIFICATION (KJV)			
1.	7-19-16	REVISED SITE TABS, WAIVER KEY MAP, SIM. CHECKLIST (KJV)			

REVISIONS

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Civil and Environmental Engineers • Planners • Landscape • Architects • Surveyors
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NOTES & DETAILS

SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SE 2016-DR-009

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
09/26/16
PROFESSIONAL ENGINEER

DESIGN	DRAFT	APPROVED	DATE	SCALE
KJV	KJV	HMF	APR. 2016	HORIZ: --- VERT: ---

SHEET 2 OF 19

PRJ NO: 2014-2541

TYPE: SE PLAT

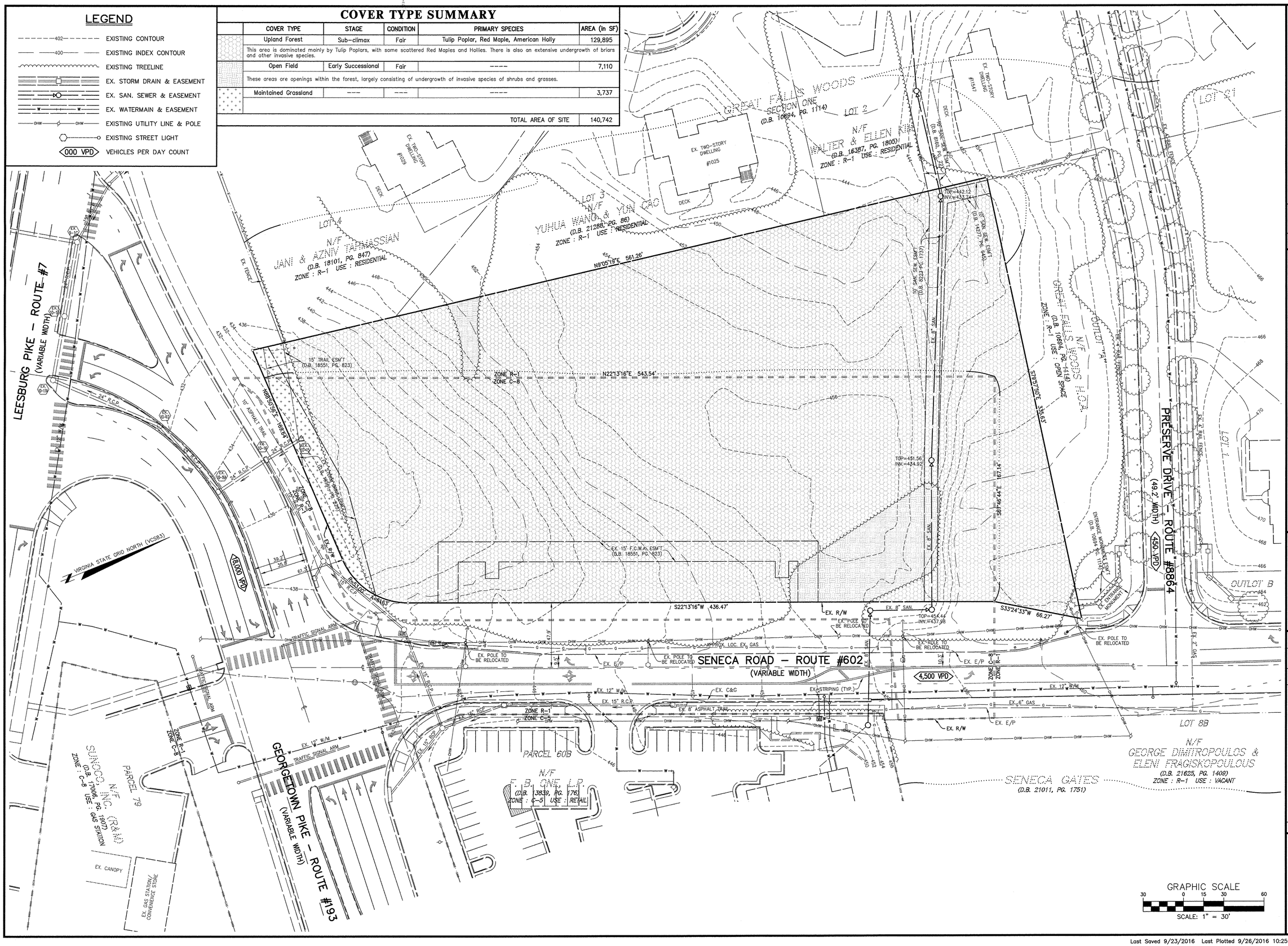
Attached Xrefs:

LEGEND

- EXISTING CONTOUR (402)
- EXISTING INDEX CONTOUR (400)
- EXISTING TREELINE
- EX. STORM DRAIN & EASEMENT
- EX. SAN. SEWER & EASEMENT
- EX. WATERMAIN & EASEMENT
- EXISTING UTILITY LINE & POLE
- EXISTING STREET LIGHT
- 000 VPD — VEHICLES PER DAY COUNT

COVER TYPE SUMMARY

COVER TYPE	STAGE	CONDITION	PRIMARY SPECIES	AREA (in SF)
Upland Forest	Sub-climax	Fair	Tulip Poplar, Red Maple, American Holly	129,895
This area is dominated mainly by Tulip Poplars, with some scattered Red Maples and Hollies. There is also an extensive undergrowth of briars and other invasive species.				
Open Field	Early Successional	Fair	----	7,110
These areas are openings within the forest, largely consisting of undergrowth of invasive species of shrubs and grasses.				
Maintained Grassland	---	---	----	3,737
			TOTAL AREA OF SITE	140,742



EXISTING CONDITIONS PLAN & VEGETATION MAP

SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SE 2016-DR-009

NO.	DATE	DESCRIPTION	REVIEW BY	APPRV'D.	DATE
3.	9-23-16	REVISED SITE AREA TO REMOVE VACATED RIGHT-OF-WAY (KJV)			
1.	7-19-16	REVISED SITE AREA TO INCLUDE VACATED RIGHT-OF-WAY (KJV)			
NO.	DATE	REVISION PRIOR TO APPROVAL			

REVISIONS

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DESIGN	DRAFT	APPROVED	DATE	SCALE
KJV	KJV	HMF	APR. 2016	HORZ: 1" = 30' VERT: ---

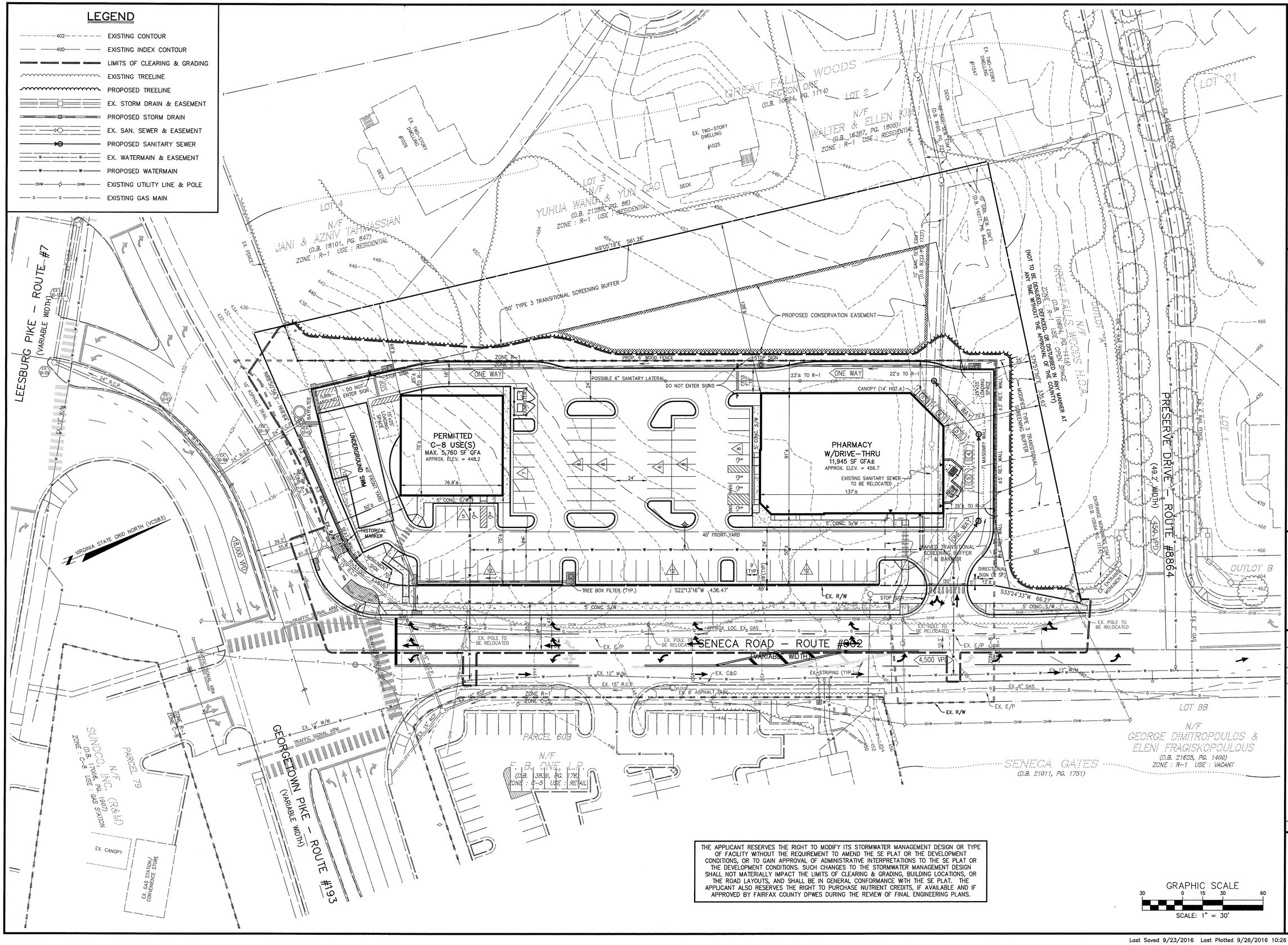
SHEET	OF
3	19

PRJ NO: 2014-2541
TYPE: SP EX

Attached Xrefs: 00-D0500

LEGEND

- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- 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
- EXISTING UTILITY LINE & POLE
- EXISTING GAS MAIN



NO.	DATE	REVISION
3.	9-26-16	REMOVED R/W VACATION, REVISED LAYOUT (KJV)
2.	8-22-16	REMOVED PARK & RIDE LOT, REVISED LAYOUT (KJV)
1.	7-19-16	VACATED R/W, SHIFTED LAYOUT, ADDED HISTORICAL MONUMENT (KJV)

CPJ Associates
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COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
9/26/16
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	REVIEW BY	APPROVD.	DATE
	REVISIONS			

DESIGN KJV	DRAFT KJV	APPROVED HMF	DATE APR. 2016
SCALE HORIZ.: 1" = 30' VERT.			

SHEET 4 OF 19

PRJ NO: 2014-2541

TYPE: SP EX

Attached Xrefs: 00-D0500/00-D0700

Last Saved 9/23/2016 Last Plotted 9/26/2016 10:26 AM Sheet N:\14541\DWG\00-D0601

LEGEND

- CAT. III & IV SHADE TREE (2" CAL.) *(E.G. RED MAPLE, OAK, RIVER BIRCH, BEECH)*
- TREE COUNTED TOWARD PARKING LOT LANDSCAPING
- CAT. II ORNAMENTAL TREE (1" CAL.) *(E.G. SERVICEBERRY, MAGNOLIA, DOGWOOD)*
- CAT. I–IV EVERGREEN TREE (8' HGT.) *(E.G. HOLLY, EASTERN REDCEDAR, SPRUCE)*
- SMALL–MEDIUM DECIDUOUS SHRUB *(E.G. VIBURNUM, HYDRANGEA, DOGWOOD)*
- SMALL–MEDIUM EVERGREEN SHRUB *(E.G. HOLLY, JUNIPER)*
- (2) TRANSITIONAL SCREENING (SEE SHEET 6)
- TREE SAVE AREA (SEE SHEET 6)

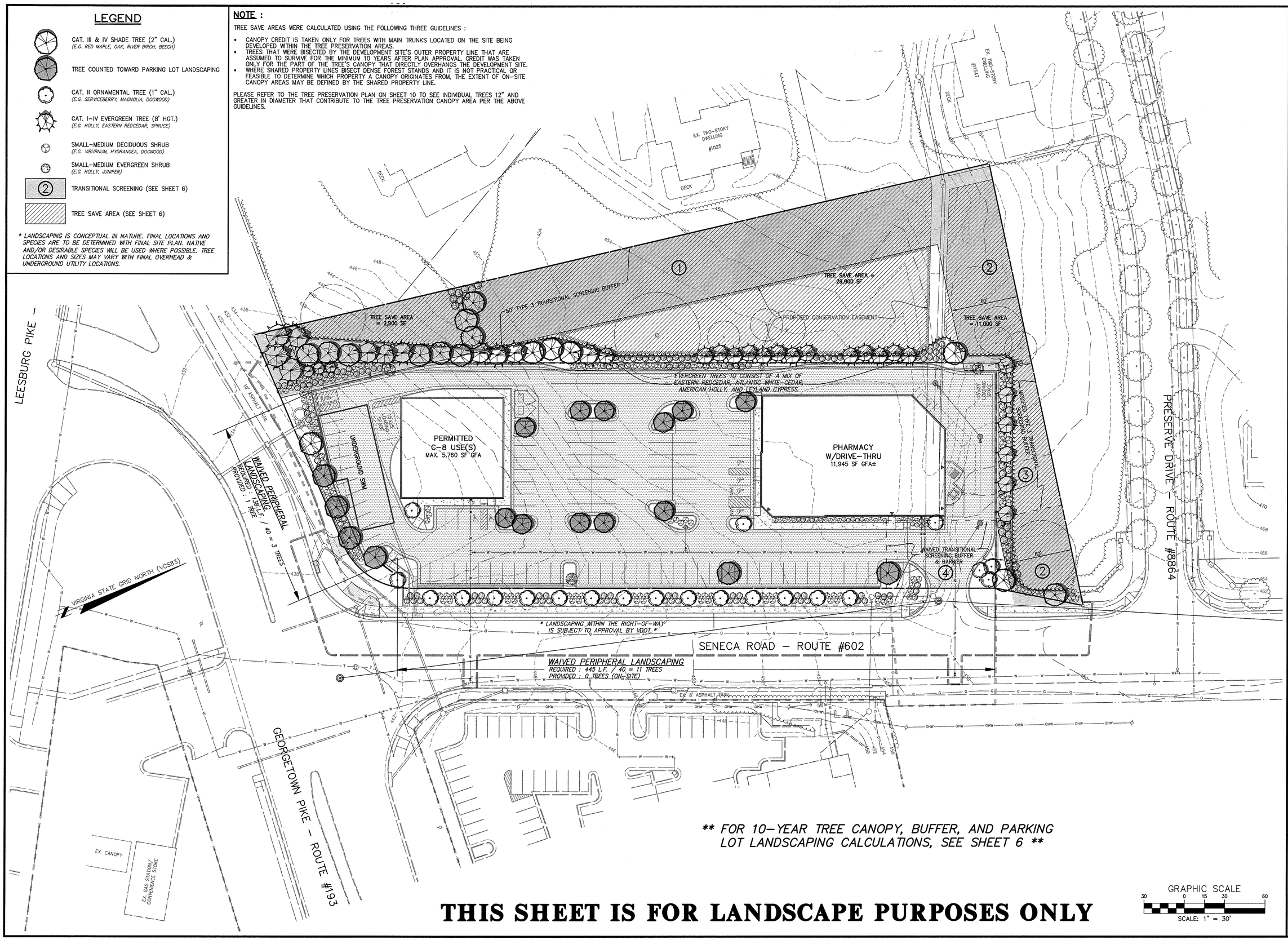
** LANDSCAPING IS CONCEPTUAL IN NATURE. FINAL LOCATIONS AND SPECIES ARE TO BE DETERMINED WITH FINAL SITE PLAN. NATIVE AND/OR DESIRABLE SPECIES WILL BE USED WHERE POSSIBLE. TREE LOCATIONS AND SIZES MAY VARY WITH FINAL OVERHEAD & UNDERGROUND UTILITY LOCATIONS.*

NOTE :

TREE SAVE AREAS WERE CALCULATED USING THE FOLLOWING THREE GUIDELINES :

- CANOPY CREDIT IS TAKEN ONLY FOR TREES WITH MAIN TRUNKS LOCATED ON THE SITE BEING DEVELOPED WITHIN THE TREE PRESERVATION AREAS.
- TREES THAT WERE BISECTED BY THE DEVELOPMENT SITE'S OUTER PROPERTY LINE THAT ARE ASSUMED TO SURVIVE FOR THE MINIMUM 10 YEARS AFTER PLAN APPROVAL CREDIT WAS TAKEN ONLY FOR THE PART OF THE TREE'S CANOPY THAT DIRECTLY OVERHANGS THE DEVELOPMENT SITE.
- WHERE SHARED PROPERTY LINES BISECT DENSE FOREST STANDS AND IT IS NOT PRACTICAL OR FEASIBLE TO DETERMINE WHICH PROPERTY A CANOPY ORIGINATES FROM, THE EXTENT OF ON–SITE CANOPY AREAS MAY BE DEFINED BY THE SHARED PROPERTY LINE.

PLEASE REFER TO THE TREE PRESERVATION PLAN ON SHEET 10 TO SEE INDIVIDUAL TREES 12" AND GREATER IN DIAMETER THAT CONTRIBUTE TO THE TREE PRESERVATION CANOPY AREA PER THE ABOVE GUIDELINES.



** FOR 10–YEAR TREE CANOPY, BUFFER, AND PARKING LOT LANDSCAPING CALCULATIONS, SEE SHEET 6 **

GRAPHIC SCALE
30 0 15 30 60
SCALE: 1" = 30'

THIS SHEET IS FOR LANDSCAPE PURPOSES ONLY

NO.	DATE	REVISION
3.	9–26–16	REVISED LANDSCAPING (KJV)
2.	8–22–16	REVISED LANDSCAPING (KJV)
1.	7–19–16	REVISED LANDSCAPING (KJV)

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LANDSCAPE PLAN

SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SE 2016–DR–009

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
09/26/16
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	BY	REVIEW	APPROV.	DATE
	REVISIONS				

DESIGN	DRAFT	APPROVED	DATE	SCALE	
KJV	KJV	HMF	APR. 2016	HORIZ: 1" = 30'	VERT: ---

SHEET 5 OF 19

PRJ NO: 2014–2541
TYPE: SP EX

Attached Xrefs: 00–D0700/00–D0500

Last Saved 9/23/2016 Last Plotted 9/23/2016 5:16 PM Sheet N:\14541\DWG\00–D6601

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	129,895 SF
B	Percentage of gross site area covered by existing tree canopy	92.3 %
C	Percentage of 10-year canopy required for site	18 %
D	Percentage of 10-year canopy requirement that should be met through tree preservation	92.3 %
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		
B1	Identify gross site area	140,742 SF
B2	Subtract area dedicated to road frontage and parks	0 SF
B3	Subtract area of exemptions	0 SF
B4	Adjusted gross site area (B1 - B2 - B3)	140,742 SF
B5	Identify site's zoning and/or use : C-8	61.5 %
B5	Identify site's zoning and/or use : R-1	38.5 %
B6	Percentage of 10-year canopy required	18 %
B7	Area of 10-year canopy required (B4 x B6)	**24,911 SF**
B8	Is a modification of canopy requirements being requested?	**NO**
B9	If B8 is yes, provide sheet number where modification request is located	N/A
C. Tree Preservation		
C1	Tree Preservation Target Area	22,991 SF
C2	Total canopy area meeting standards of §12-0400	0 SF
C3	x 1.25 =	0 SF
C4	Total canopy area of unique or valuable forest or woodland communities	0 SF
C5	x 1.50 =	0 SF
C6	Total canopy area of Heritage, Memorial, Specimen, or Street Trees	0 SF
C7	x 1.5 to 3.0 =	0 SF
C8	Canopy area of trees within Resource Protection Areas and 100-year floodplains	0 SF
C9	x 1.0 =	0 SF
C10	Total canopy area not meeting standards of §12-0400	43,800 SF
C11	x 1.0 =	43,800 SF
C12	Total of C3, C5, C7, C9, and C11	**43,800 SF**
D. Tree Planting		
D1	Area of canopy to be met through tree planting (B7 - C12)	0 SF
D2	Area of canopy to be planted for air quality benefits	0 SF
D3	x 1.50 =	0 SF
D4	Area of canopy to be planted for energy conservation	0 SF
D5	x 1.50 =	0 SF
D6	Area of canopy to be planted for water quality benefits	0 SF
D7	x 1.25 =	0 SF
D8	Area of canopy to be planted for wildlife benefits	0 SF
D9	x 1.50 =	0 SF
D10	Area of canopy provided by native trees	0 SF
D11	x 1.50 =	0 SF
D12	Area of canopy provided by improved cultivars and varieties	0 SF
D13	x 1.25 =	0 SF
	Area of canopy provided by other trees	10,550 SF
D14	Area of canopy provided through tree seedlings	0 SF
	x 1.0 =	0 SF
D15	Area of canopy provided through native shrubs or woody seed mix	0 SF
	x 1.0	0 SF
D16	Percentage of line D14 represented by line D15 (must not exceed 33% of D14)	0 %
D17	Total of canopy area to be provided through tree planting	**10,550 SF**
D18	Is offsite planting relief requested?	NO
D19	Tree Bank or Tree Fund?	N/A
D20	Canopy area requested to be provided through offsite banking or tree fund	0 SF
D21	Amount to be deposited into the Tree Preservation and Planting Fund	0
E. Total of 10-year Tree Canopy Provided		
E1	Total canopy area provided through tree preservation (C10)	43,800 SF
E2	Total canopy area provided through tree planting (D17)	10,550 SF
E3	Total canopy area provided through offsite mechanism (D19)	N/A SF
E4	Total 10-year tree canopy provided (E1 + E2 + E3)	**54,350 SF**
	% of Adjusted Gross Site Area (B4)	**38.6 %**

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 SE Plat.

CALCULATIONS FOR TRANSITIONAL SCREENING

①			50' REQUIRED
AREA OF BUFFER			26,566 SF
TREE COVER AREA REQUIRED (75% OF ABOVE)			19,925 SF
EXISTING TREE SAVE AREA WITHIN BUFFER			20,350 SF 77 %
PROPOSED LANDSCAPING:			
0	CAT. II EVERGREEN TREES	x 100 SF =	0 SF
4	CAT. III EVERGREEN TREES	x 150 SF =	600 SF
3	CAT. IV EVERGREEN TREES	x 200 SF =	600 SF
0	CAT. II SHADE TREES	x 100 SF =	0 SF
0	CAT. III SHADE TREES	x 150 SF =	0 SF
9	CAT. IV SHADE TREES	x 200 SF =	1,800 SF
45	SHRUBS		
16	TOTAL TREES		3,000 SF
TOTAL TEN-YEAR CANOPY WITHIN BUFFER			***23,350 SF*** ***87.9 %***

CALCULATIONS FOR TRANSITIONAL SCREENING

③			50' REQUIRED	VAR. WIDTH MODIFIED
AREA OF BUFFER			5,619 SF	4,316 SF
TREE COVER AREA REQUIRED (75% OF ABOVE)			4,214 SF	3,237 SF
EXISTING TREE SAVE AREA WITHIN BUFFER				2,730 SF 63 %
PROPOSED LANDSCAPING:				
6	CAT. II EVERGREEN TREES	x 100 SF =		600 SF
0	CAT. III EVERGREEN TREES	x 150 SF =		0 SF
0	CAT. IV EVERGREEN TREES	x 200 SF =		0 SF
0	CAT. II SHADE TREES	x 100 SF =		0 SF
0	CAT. III SHADE TREES	x 150 SF =		0 SF
0	CAT. IV SHADE TREES	x 200 SF =		0 SF
17	SHRUBS			
6	TOTAL TREES			600 SF
TOTAL TEN-YEAR CANOPY WITHIN BUFFER				***3,330 SF***
(SEE MODIFICATION REQUEST ON SHEET 2)				***77.2 %***

CALCULATIONS FOR TRANSITIONAL SCREENING

②			50' REQUIRED
AREA OF BUFFER			9,596 SF
TREE COVER AREA REQUIRED (75% OF ABOVE)			7,197 SF
EXISTING TREE SAVE AREA WITHIN BUFFER			8,050 SF 84 %
PROPOSED LANDSCAPING:			
0	CAT. II EVERGREEN TREES	x 100 SF =	0 SF
0	CAT. III EVERGREEN TREES	x 150 SF =	0 SF
0	CAT. IV EVERGREEN TREES	x 200 SF =	0 SF
0	CAT. II SHADE TREES	x 100 SF =	0 SF
0	CAT. III SHADE TREES	x 150 SF =	0 SF
1	CAT. IV SHADE TREES	x 200 SF =	200 SF
31	SHRUBS		
1	TOTAL TREES		200 SF
TOTAL TEN-YEAR CANOPY WITHIN BUFFER			***8,250 SF*** ***86.0 %***

CALCULATIONS FOR TRANSITIONAL SCREENING

④			50' REQUIRED	0 WAIVED
AREA OF BUFFER			4,360 SF	0 SF
TREE COVER AREA REQUIRED (75% OF ABOVE)			3,270 SF	0 SF
EXISTING TREE SAVE AREA WITHIN BUFFER				0 SF 0 %
PROPOSED LANDSCAPING:				
0	CAT. II EVERGREEN TREES	x 100 SF =		0 SF
0	CAT. III EVERGREEN TREES	x 150 SF =		0 SF
0	CAT. IV EVERGREEN TREES	x 200 SF =		0 SF
0	CAT. II SHADE TREES	x 100 SF =		0 SF
0	CAT. III SHADE TREES	x 150 SF =		0 SF
0	CAT. IV SHADE TREES	x 200 SF =		0 SF
0	SHRUBS			
0	TOTAL TREES			0 SF
TOTAL TEN-YEAR CANOPY WITHIN BUFFER				***0 SF***
(SEE WAIVER REQUEST ON SHEET 2)				***0.0 %***

COMPUTATIONS FOR INTERIOR PARKING LOT LANDSCAPING

(20 OR MORE PARKING SPACES)

AREA OF PARKING LOT	53,130 Sq.Ft.
LANDSCAPING REQUIRED (5% of above)	2,657 Sq.Ft.
LANDSCAPING PROVIDED (6 trees @ 200 sf + 11 trees @ 150 sf)	2,850 Sq.Ft. (5.4%)

THIS SHEET IS FOR LANDSCAPE PURPOSES ONLY

NO.	DATE	DESCRIPTION	BY
3.	9-26-16	REVISED TREE COVER & PARKING LOT LANDSCAPING CALCS (KJV)	
2.	8-22-16	REVISED TREE COVER & PARKING LOT LANDSCAPING CALCS (KJV)	
1.	7-19-16	REVISED TREE COVER, BUFFER & PARKING LOT LANDSCAPING CALCS (KJV)	

REVISION PRIOR TO APPROVAL

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TREE CANOPY CALCULATIONS

SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SE 2016-DR-009

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
09/26/16
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	BY	APPRVD	DATE
	REVISIONS			

DESIGN KJV | DRAFT KJV | APPROVED | DATE APR. 2016 | SCALE HORIZ: 1" = 30' VERT: ---

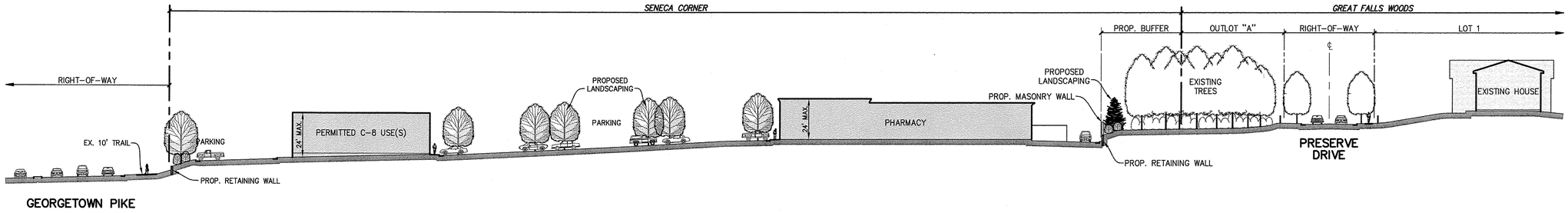
SHEET 6 OF 19

PRJ NO: 2014-2541

TYPE: SP EX

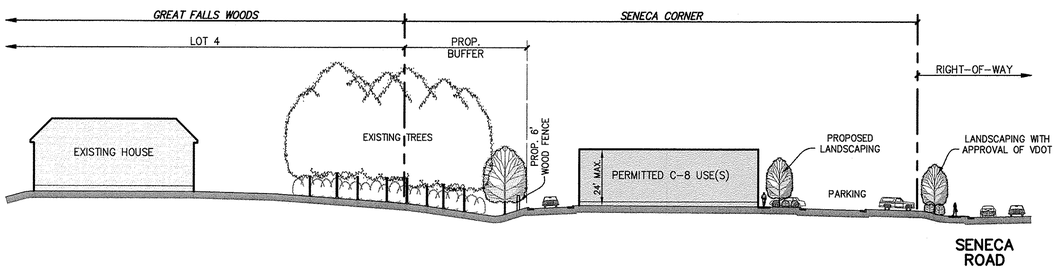
Attached Xrefs: 00-D0700/00-D0500

kvestal



CROSS-SECTION 'A'

SCALE : 1" = 30'



CROSS-SECTION 'B'

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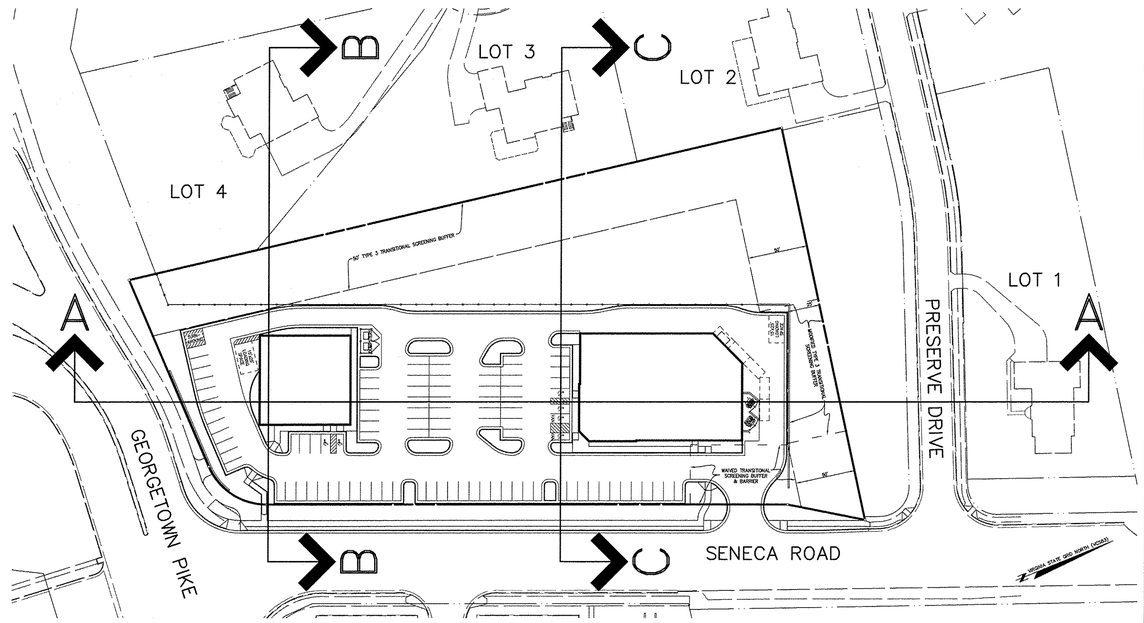
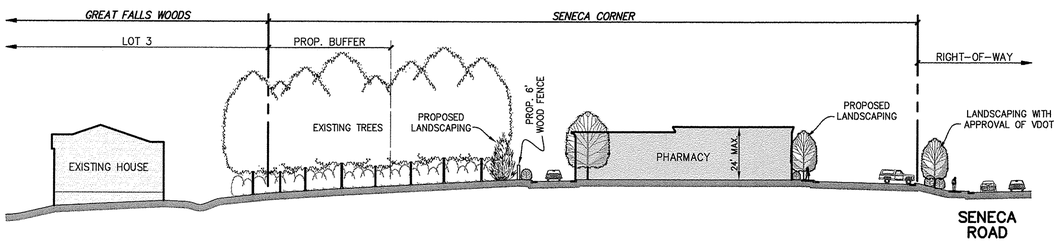


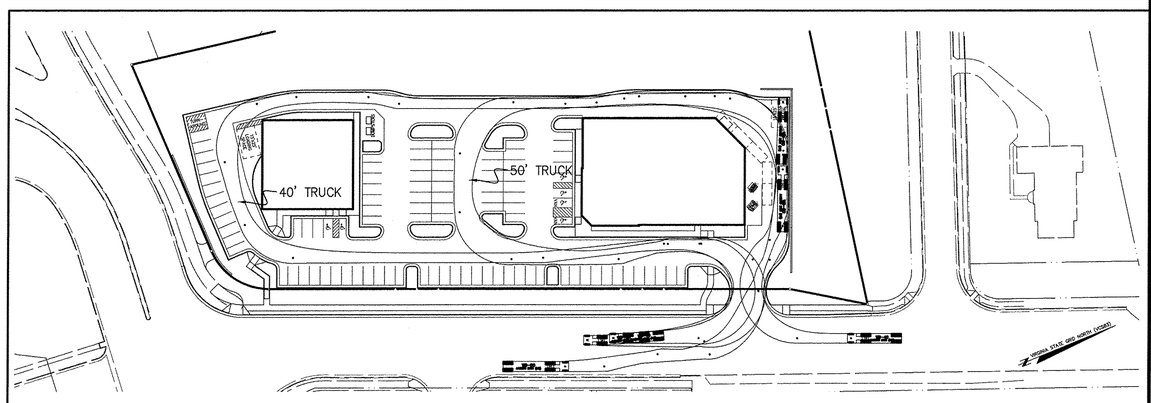
CROSS-SECTION KEY MAP

SCALE : 1" = 60'



CROSS-SECTION 'C'

SCALE : 1" = 30'



EMERGENCY VEHICLE MOVEMENTS

SCALE : 1" = 60'

NO.	DATE	REVISION PRIOR TO APPROVAL
3.	9-26-16	REVISED SECTIONS 'B' & 'C' (KJV)
2.	8-22-16	REVISED SECTION 'C' (KJV)
1.	7-19-16	REVISED SECTIONS; ADDED EMERGENCY VEHICLE PLAN (KJV)

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CROSS-SECTIONS

SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SE 2016-DR-009

COMMONWEALTH OF VIRGINIA
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Lic. No. 038937
09/26/16
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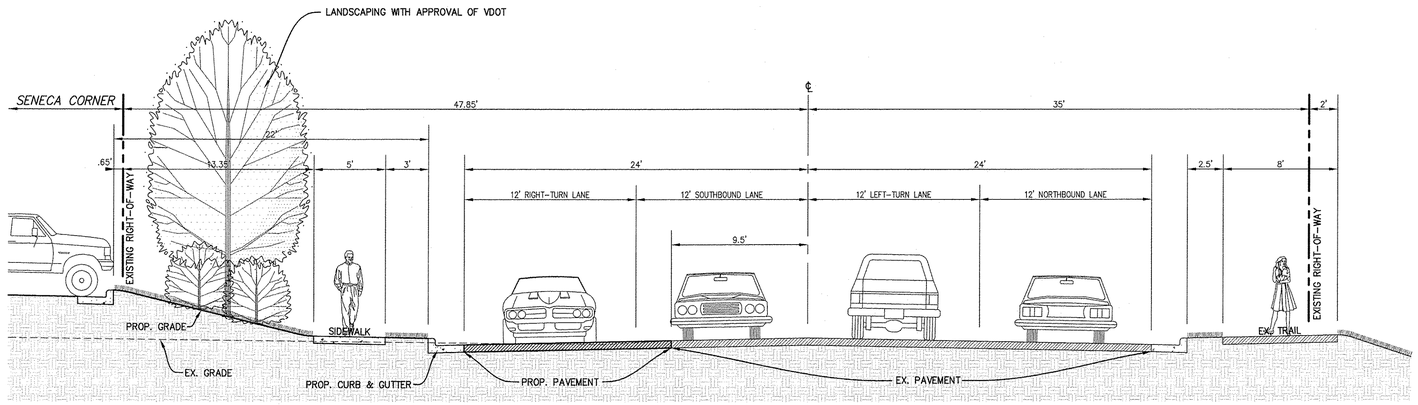
NO.	DESCRIPTION REVISIONS	REVIEW BY	APPROVD. DATE

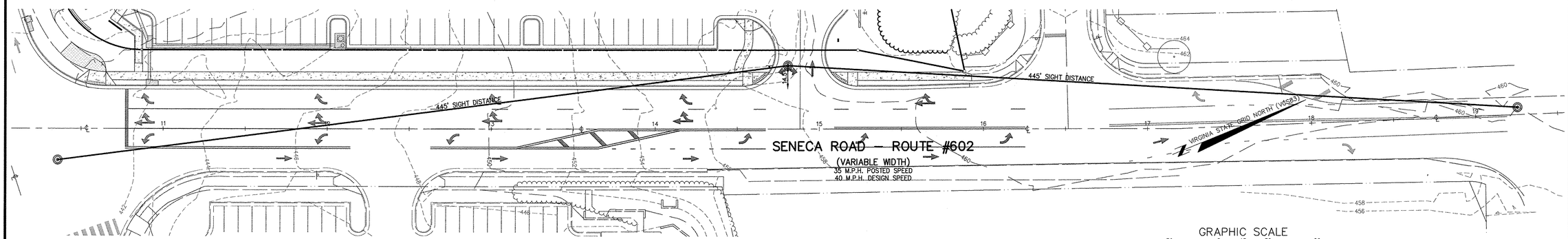
DESIGN KJV	DRAFT KJV	APPROVED HMF	DATE APR. 2016
SCALE HORIZ: --- VERT: ---			
SHEET 7	OF 19		
PRJ NO: 2014-2541			
TYPE: SP EX			

Attached Xrefs: 00-D0700/00-D0500



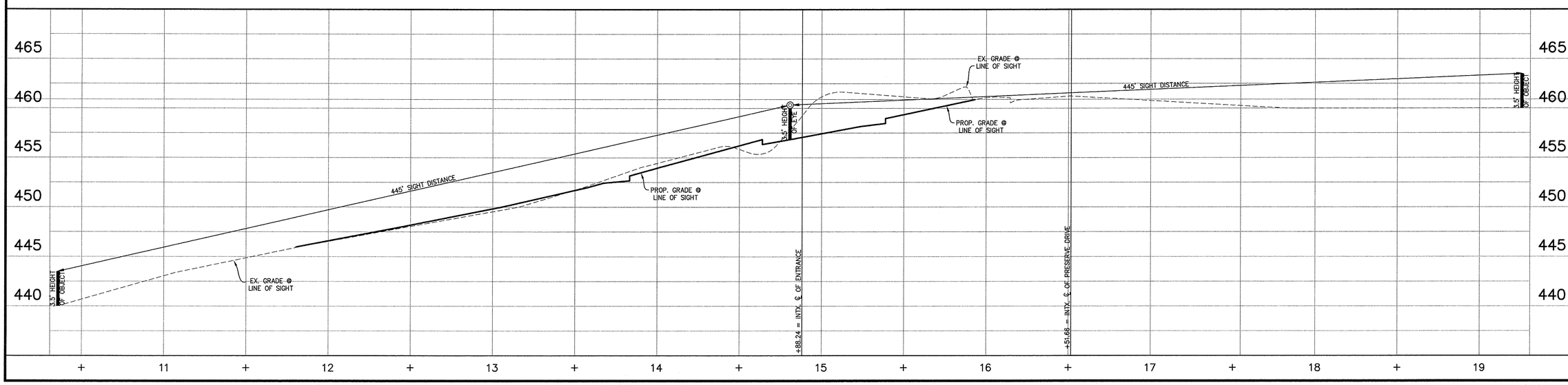
TYPICAL SECTION – SENECA ROAD

SCALE : 1" = 5'



SIGHT DISTANCE PLAN & PROFILE

SCALE : 1" = 30' (HORIZ.)
1" = 5' (VERT.)



NO.	DATE	REVISION PRIOR TO APPROVAL
3.	9-26-16	REVISED SENECA ROAD CROSS-SECTION (KJV)
1.	7-19-16	REVISED TYPICAL STREET SECTION (KJV)

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TYPICAL ROAD SECTION AND SIGHT DISTANCE
PLAN & PROFILE

SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SE 2016-DR-009

COMMONWEALTH OF VIRGINIA
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Lic. No. 038937
9/26/16
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NO.	DESCRIPTION	REVIEW APPRVD BY	DATE
	REVISIONS		

DESIGN	DRAFT	APPROVED	DATE	SCALE
KJV	KJV	HMF	APR. 2016	HORIZ: --- VERT: ---

SHEET 8 OF 19

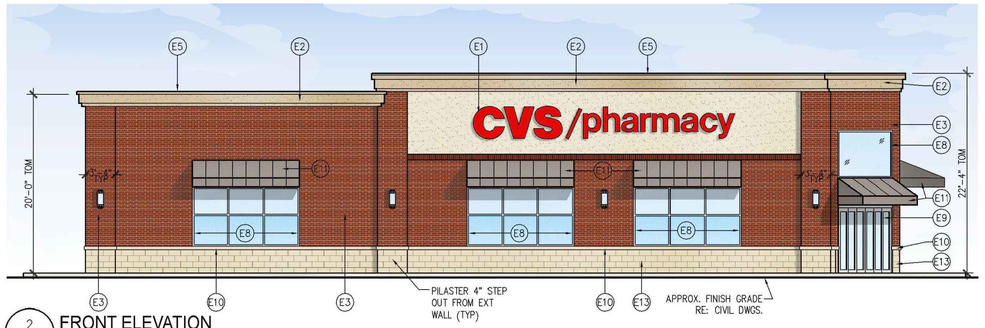
PRJ NO: 2014-2541

TYPE: SP EX

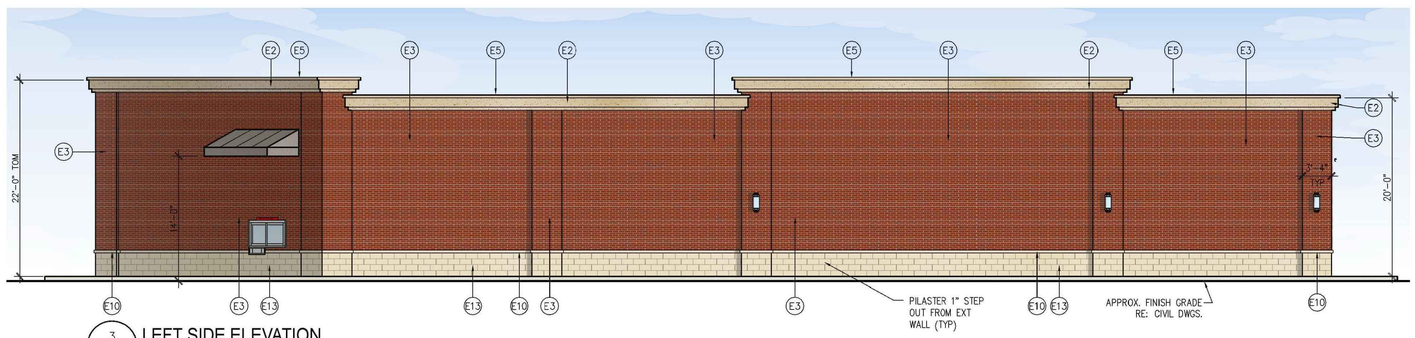
Attached Xrefs: 00-00700/00-00500

Last Saved 9/23/2016 Last Plotted 9/23/2016 5:11 PM Sheet N:\14541\DWG\00-D0302

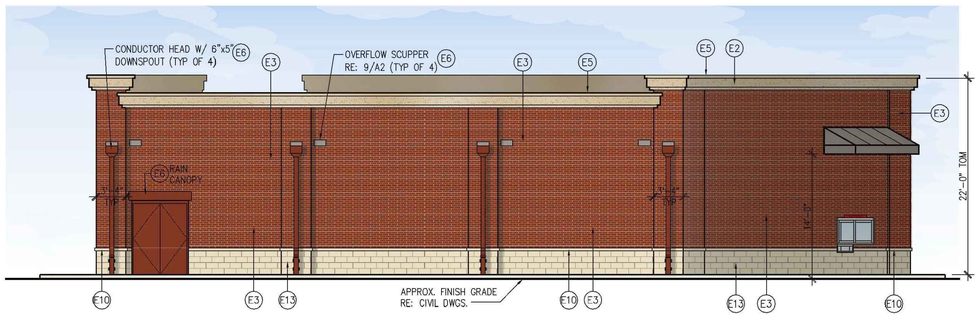
1 / A4 RIGHT SIDE ELEVATION
SCALE: 1/8" = 1'-0"



2 / A4 FRONT ELEVATION
SCALE: 1/8" = 1'-0"



3 / A4 LEFT SIDE ELEVATION
SCALE: 1/8" = 1'-0"



4 / A4 REAR ELEVATION
SCALE: 1/8" = 1'-0"

EXTERIOR FINISH SCHEDULE

TAG	MATERIAL / DESCRIPTION	MFR	STYLE/ CAT. NO.	COLOR	NOTES
E1	EIFS/DEFS	STO LOTUSAN SYSTEM	191 STOLIT LOTUSAN 1.5	#93330 CHAMPAGNE	SEE SPECIFICATION
E2	EIFS	STO LOTUSAN SYSTEM	191 STOLIT LOTUSAN 1.5	NA05-0001 RAFTERTAIL	SEE SPECIFICATION
E3	BRICK VENEER	PINE HALL BRICK		HABERSHAM QUEEN	MORTAR COLOR – CBM 109 YORK BUILDING PRODUCTS CO.
E4	PAINT	BENJAMIN MOORE		PAINT TO MATCH EIFS "E1"	
E5	PREFINISHED METAL EDGE FLASHING/FASCIA			COLOR TO MATCH EIFS "E2"	
E6	PAINT	BENJAMIN MOORE		PAINT TO MATCH BRICK "E3"	
E7	BOLLARD COVER	INNOPLAST BOLLARDGARD	BC752 OR BC452	YELLOW	TYP FOR ALL PIPE BOLLARDS
E8	ALUM STOREFRONT	SEE SPECS	SEE SPECS	CLEAR ANODIZED	
E9	ALUM AUTOMATIC DOOR	STANLEY	SEE SPECS	CLEAR ANODIZED	
E10	PRECAST STONE SILL	ROCKCAST	——	WHEATSTONE	RE: DETAIL 6/A7B
E11	ALUMINUM AWNING	BURTON SIGNWORKS, INC.	STANDING SEAM PANELS	MATCH "ATAS – MEDIUM BRONZE"	
E12	NOT USED				
E13	LIMESTONE VENEER BASE	ROCKCAST	MASONRY VENEER SERIES	WHEATSTONE	

LEGEND

(X) – RE: EXTERIOR FINISH SCHEDULE

– HATCHED AREA INDICATES SPANDREL GLAZING OR WINDOW FILM.

NOTE :
THESE ELEVATIONS ARE CONCEPTUAL IN NATURE AND ARE INTENDED TO ILLUSTRATE THE GENERAL CHARACTER OF THE BUILDING, AND THE QUALITY OF CONSTRUCTION AND MATERIALS. THESE ELEVATIONS ARE NOT INTENDED TO REPRESENT FINAL BUILDING DESIGN OR TO BE INTERPRETED AS A COMMITMENT TO SPECIFIC DIMENSIONS OR BUILDING ELEMENTS. FINAL DESIGN WILL BE DETERMINED AT THE TIME OF SITE PLAN SUBMISSION.

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GEORGETOWN PIKE & SENECA RD
GREAT FALLS, VA 22066

PROJECT TYPE: NEW STORE
DEAL TYPE: FEE FOR SERVICE

CS PROJECT NUMBER: 83521

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Williamsport, PA 17701
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CONSULTANT:

SEAL:
COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
PROFESSIONAL ENGINEER
FOR APPROPRIATENESS ONLY

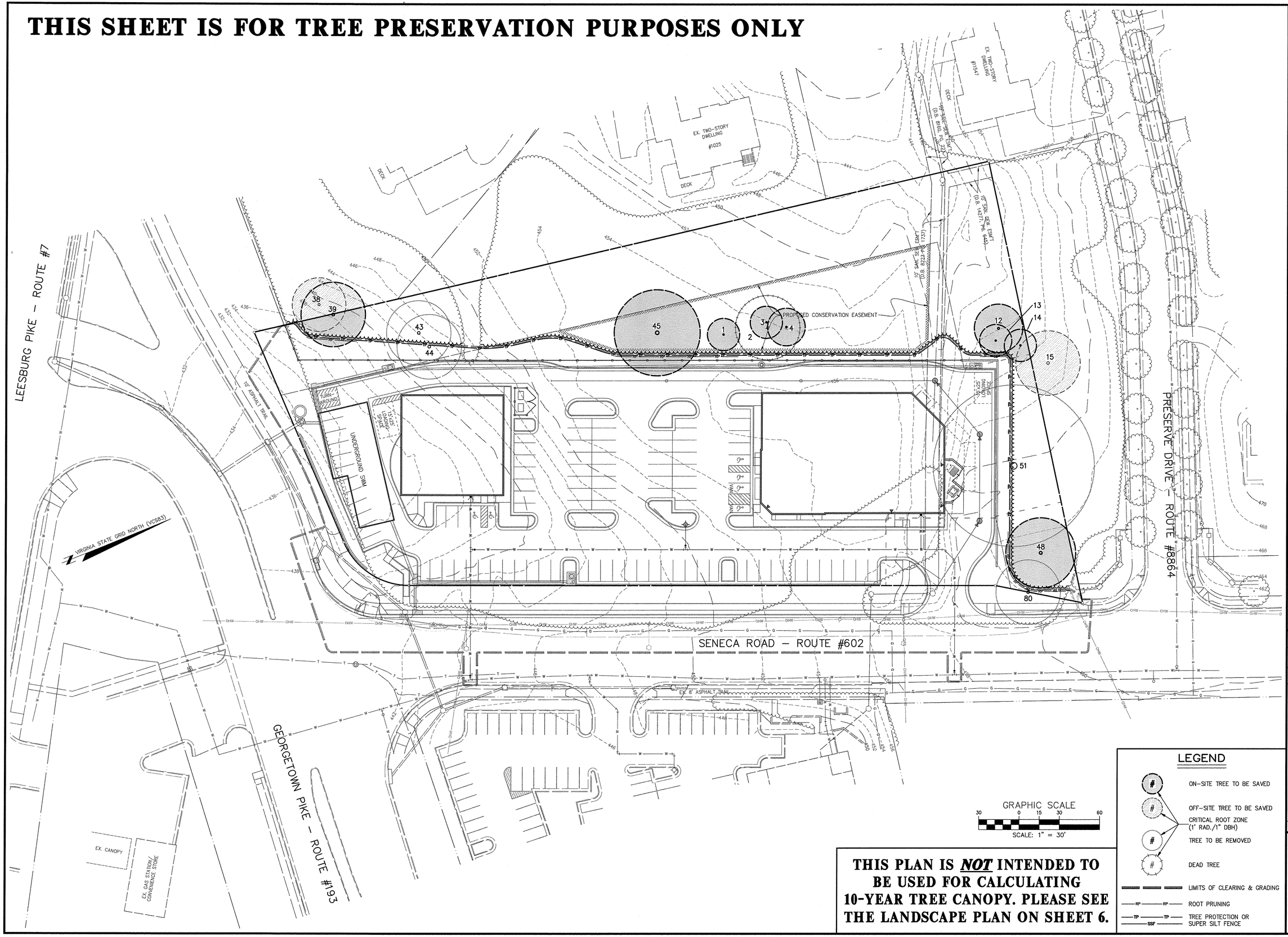
DEVELOPER:
THE REBKEE COMPANY
15871 CITY VIEW DRIVE
SUITE 300
MIDLOTHIAN, VA 23113
TEL: (804) 419-0740
FAX: (804) 419-0759

DRAWING BY: JRL
DATE: 22 SEP 2016
JOB NUMBER: 6558-039
TITLE:
EXTERIOR ELEVATIONS

SHEET 9 OF 19

COMMENTS:

THIS SHEET IS FOR TREE PRESERVATION PURPOSES ONLY



LEGEND

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

THIS PLAN IS *NOT* INTENDED TO BE USED FOR CALCULATING 10-YEAR TREE CANOPY. PLEASE SEE THE LANDSCAPE PLAN ON SHEET 6.

NO.	DATE	REVISION PRIOR TO APPROVAL
1.	7-19-16	REVISED TREES TO BE SAVED, DUE TO CHANGE IN CLEARING LIMITS (LBD)

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TREE PRESERVATION PLAN

SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
09/26/16
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	BY	APPRVD	DATE
	REVISIONS			

DESIGN KJV	DRAFT KJV	APPROVED WHE	DATE APR. 2016
SCALE HORIZ: 1" = 30' VERT: ---			
SHEET 10	OF 19		
PRJ NO: 2014-2541			
TYPE: SP EX			

Attached Xrefs: 00-00700/00-00500

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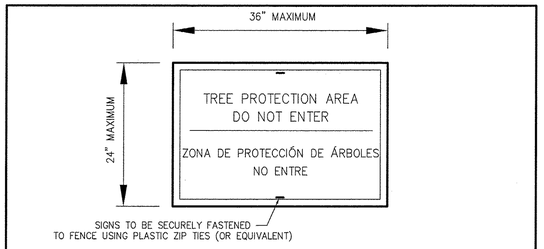
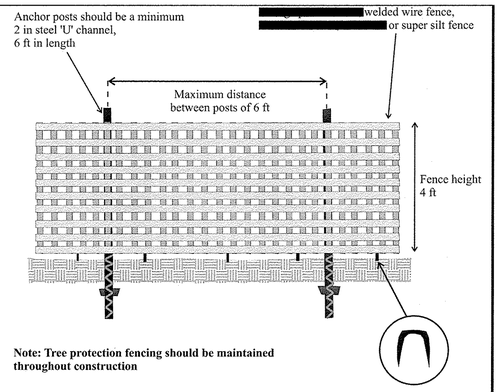


NOTES: 1. TREE PROTECTION SIGNS SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.
2. BILINGUAL SIGNS WILL BE POSTED ON THE TREE PROTECTION FENCE AT LEAST EVERY 30 FEET.
3. SIGN SHOWN IS FOR INFORMATIONAL PURPOSES ONLY AND ACTUAL SIGNS MAY DIFFER IN APPEARANCE AND WORDING. CONTENT SHALL BE EQUAL.

TREE PROTECTION SIGN DETAIL

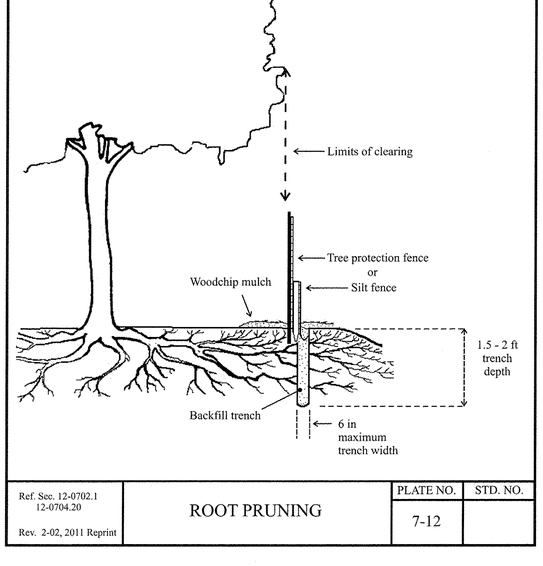
NOT TO SCALE



Note: Tree protection fencing should be maintained throughout construction

Adapted from: ***Woodland Conservation Manual***, Prince George County, Maryland

Ref. Sec. 12-0703.1B, 12-0505.1B Rev. 2-02, 2011 Reprint	TREE PROTECTION FENCE INSTALLATION	PLATE NO.	STD. NO.
		6-12	



Ref. Sec. 12-0702.1 12-0704.20 Rev. 2-02, 2011 Reprint	ROOT PRUNING	PLATE NO.	STD. NO.
		7-12	

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 THE OWNER OR THE OWNER'S DESIGNATED REPRESENTATIVE, SUPERINTENDANT, CLEARING CONTRACTOR, UFMD, DPWES REPRESENTATIVE AND HIRED ARBORIST/FORESTER (SHOULD ONE BE REQUIRED BY UFMD, DPWES) TO MAKE MINOR ADJUSTMENTS AS NECESSARY AND TO OBSERVE TREES LISTED IN THE 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 THE MINIMUM DEPTH OF 18" IS REACHED.

7. MULCHING: TREES 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. MULCH SHALL BE PLACED IN AREAS AS INDICATED ON APPROVED PLANS.

8. TREE PROTECTION FENCING: TREE PRESERVATION AREAS SHALL BE PROTECTED BY FENCING PER THE TREE PROTECTION FENCE DETAIL LOCATED ON THIS SHEET. 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 IF REQUIRED BY UFMD, DPWES 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 GROWN 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 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 THE INSTALLATION OF THE TREE PRESERVATION FENCE AND RELATED WORK, WEEKLY THROUGH THE EROSION AND SEDIMENT CONTROL PHASE, AND MONTHLY THEREAFTER FOR 12 MONTHS OR TILL THE PROJECT IS COMPLETE, WHICHEVER OCCURS FIRST. THE DISTRICT SUPERVISOR SHALL BE NOTIFIED OF THE NAME AND CONTACT INFORMATION OF THE APPLICANT'S REPRESENTATIVE(S) RESPONSIBLE FOR SITE MONITORING AT THE TREE PRESERVATION WALK-THROUGH MEETING.

TREE INVENTORY AND ACTIVITIES SPREADSHEET

Tree #	Tree # (Survey)	COMMON NAME	SCIENTIFIC BINOMIAL	DBH(in)	CONDITION	COMMENTS	LOCATION	STATUS	ACTIVITIES: ROOT PRUNE	MULCH	TREE FENCE	PRUNE	FERTILIZE	CABLE	CAMBISTAT	TREAT PESTS
48	**1248**	tulip poplar	Liriodendron tulipifera	26	70	extensive vine coverage, multiple leaders, lacking good branching hierarchy	Onsite	Preserve	X	X	X					
51	**1251**	tulip poplar	Liriodendron tulipifera	60	67	extensive vine coverage, multiple leaders, canopy dieback	Onsite	Remove								
80	**1380**	red maple	Acer rubrum	24	68	multiple leaders, included bark, epicormic sprouting, vine coverage	Onsite	Remove			X					
01	**6001**	green ash	Fraxinus pennsylvanica	12	66	one leader dead and broken, epicormic sprouting, poor form, limb dieback, leaning trunk	Onsite	Preserve			X					
02	**6002**	unidentified	dead tree	24	0	dead	Onsite	Remove								
03	**6003**	white mulberry	Morus alba	12	67	leaning canopy, dead limbs, multiple leaders	Onsite	Preserve			X					
04	**6004**	tulip poplar	Liriodendron tulipifera	14	70	multiple leaders, epicormic sprouting	Onsite	Preserve			X					
12	**6012**	tulip poplar	Liriodendron tulipifera	18	70	multiple leaders, epicormic sprouting, lacking good branching hierarchy	Onsite	Preserve			X					
13	**6013**	tulip poplar	Liriodendron tulipifera	12	68	leaning trunk, multiple curves in trunk, leaning canopy, multiple leaders, epicormic sprouting	Onsite	Preserve	X	X	X					
14	**6014**	tulip poplar	Liriodendron tulipifera	12	65	multiple leaders, epicormic sprouting, two leaders broken	Onsite	Preserve			X					
15	**6015**	tulip poplar	Liriodendron tulipifera	24	72	epicormic sprouting, multiple leaders, uneven canopy	Offsite	Preserve			X					
38	**6138**	silver maple	Acer saccharinum	20	72	poor canopy form, lacking strong leader, epicormic sprouting	Offsite	Preserve			X					
39	**6139**	silver maple	Acer saccharinum	24	70	buttressing roots, leaning canopy, epicormic sprouting	Onsite	Preserve	X	X	X					
43	**6143**	tulip poplar	Liriodendron tulipifera	24	65	multiple curves in trunk, epicormic sprouting, poor form	Onsite	Remove								
44	**6144**	tulip poplar	Liriodendron tulipifera	24	70	multiple leaders, uneven canopy	Onsite	Remove								
45	**6145**	tulip poplar	Liriodendron tulipifera	32	70	multiple leaders, poor form	Onsite	Preserve	X	X	X					

NOTES :

1. 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.
2. 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.

THIS PLAN IS *NOT* INTENDED TO BE USED FOR CALCULATING 10-YEAR TREE CANOPY. PLEASE SEE THE LANDSCAPE PLAN ON SHEET 6.

THIS SHEET IS FOR TREE PRESERVATION PURPOSES ONLY

NO.	DATE	REVISION
1.	7-19-16	REVISED TREE INVENTORY (LBD)

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TREE PRESERVATION INVENTORY & DETAILS

SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
01/20/16
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	REVIEW BY	APPROV.	DATE
	REVISIONS			

DESIGN	DRAFT	APPROVED	DATE	SCALE
KJV	KJV	HAF	APR. 2016	HORIZ: --- VERT: ---

SHEET 11 OF 19

PRJ NO: 2014-2541

TYPE: SP EX

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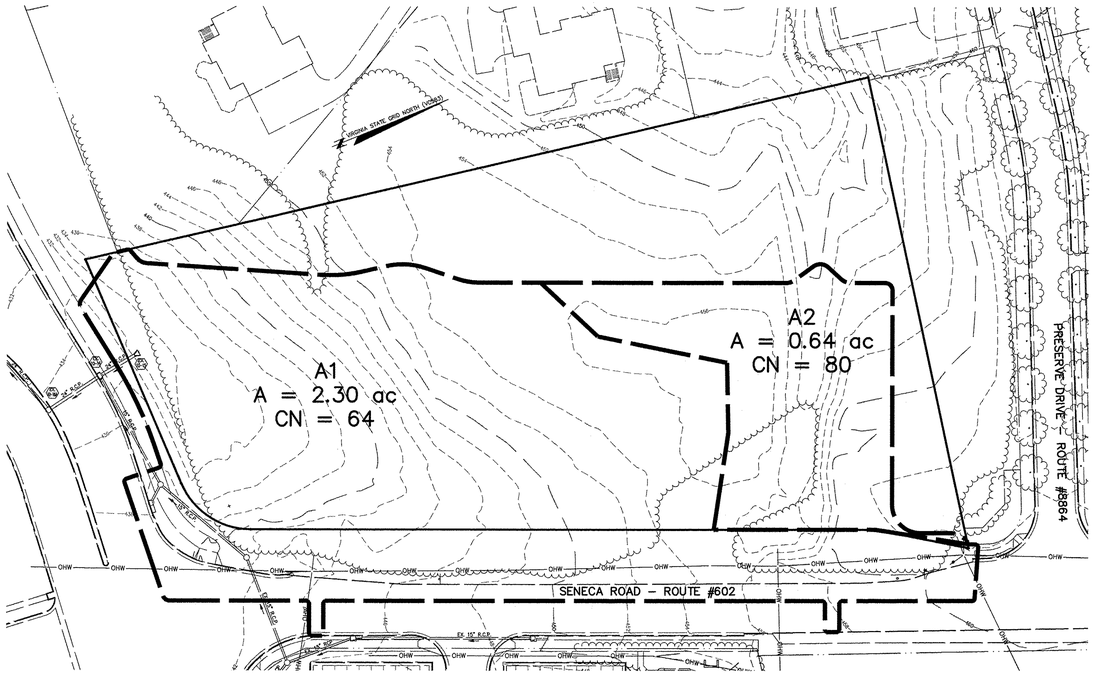
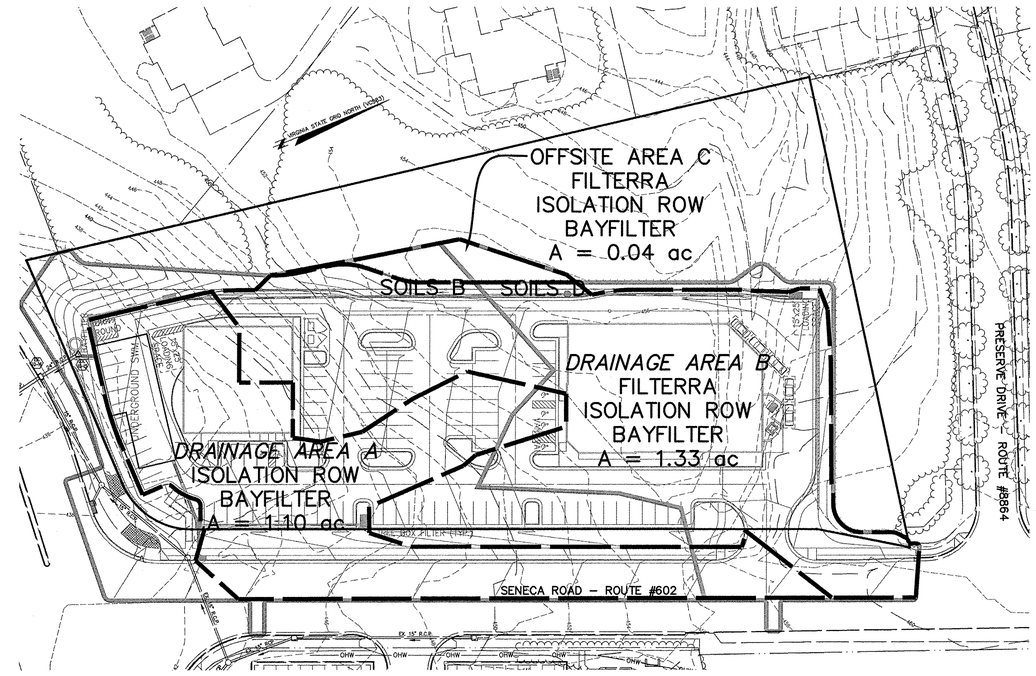


PRE–DEVELOPMENT DRAINAGE MAP

SCALE : 1" = 50'

GRAPHIC SCALE
50 0 25 50 100
SCALE: 1" = 50'



BMP AND SOILS MAP

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GRAPHIC SCALE
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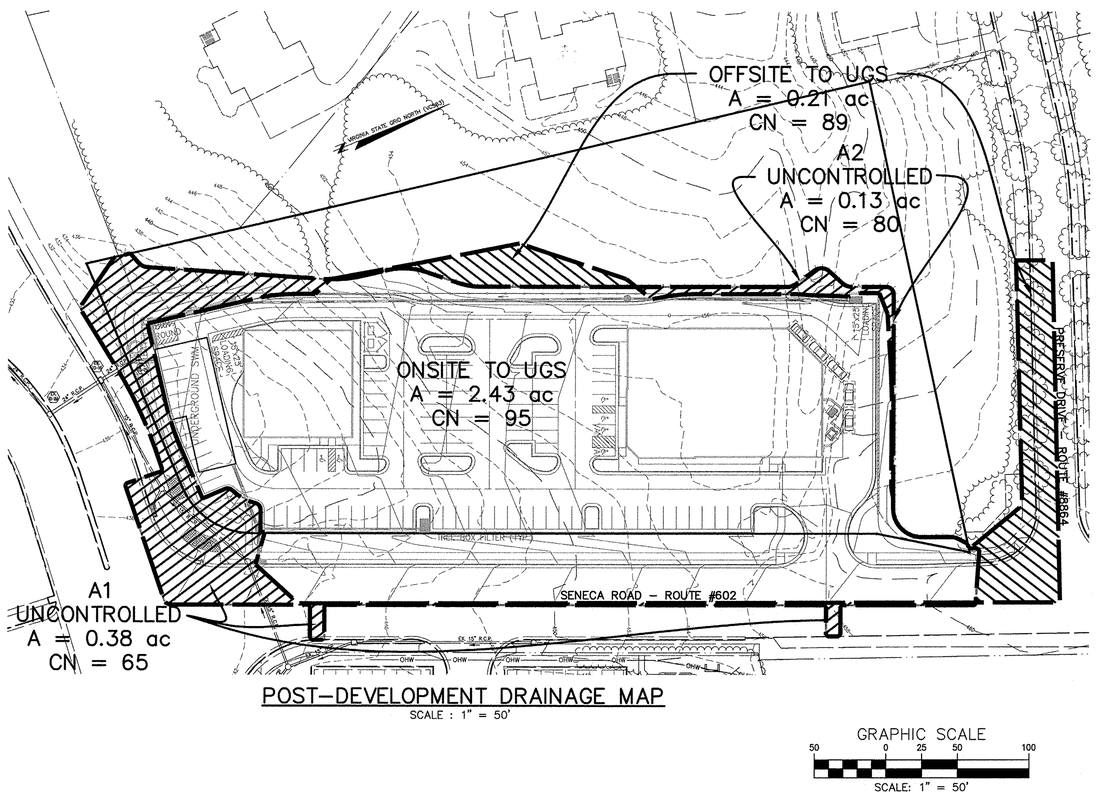
SCALE: 1" = 50'



POST–DEVELOPMENT DRAINAGE MAP

SCALE : 1" = 50'

GRAPHIC SCALE
50 0 25 50 100
SCALE: 1" = 50'

$Q_{Developed} < I.F.*(Q_{pre\text{-}developed}*$ Rvpre-developed)/Rvdeveloped)	
SECTION 124-4-4(b)(1)a.	
STORMWATER CONVEYANCE SYSTEM (1-YR 24 HR)	
Qpre-developed (cfs)	1.27
Rvpre-developed	4484
Total Rvpost-developed	18033
Improvement Factor	0.80
Qdeveloped allowable onsite	0.25
Qoffsite	0.44
Qdeveloped uncontrolled(cfs)	0.28
Qdeveloped allowable total	0.41
Proposed Release from UGS	0.40

Existing Condition

A =	2.94	CN=	67
Q_2 =	2.39	CFS	
Q_{10} =	6.73	CFS	

Offsite to UGS

A =	0.21	CN =	89
Q_2 =	0.58	CFS	
Q_{10} =	0.99	CFS	

Developed Uncontrolled

A =	0.51	CN =	69
Q_2 =	0.49	CFS	
Q_{10} =	1.28	CFS	

Allowable UGS Release

Q_2 =	2.39	+	0.58	-	0.49	=	2.48 CFS
Q_{10} =	6.73	+	0.99	-	1.28	=	6.44 CFS

Proposed UGS Release

Q_2 =	1.59	<	2.48 CFS
Q_{10} =	6.25	<	6.44 CFS

Existing Site Drainage Conditions

A1 AREA =	2.30 AC
CN =	64
Q2 =	1.40 CFS
Q10 =	4.52 CFS

Proposed Site Drainage Conditions

A1 AREA =	0.38 AC
CN =	65
Q2 =	0.26 CFS
Q10 =	0.79 CFS

Existing Site Drainage Conditions

A2 AREA =	0.64 AC
CN =	80
Q2 =	1.20 CFS
Q10 =	2.40 CFS

Proposed Site Drainage Conditions

A2 AREA =	0.13 AC
CN =	80
Q2 =	0.24 CFS
Q10 =	0.49 CFS

OUTFALL, SWM, AND BMP NARRATIVE

THE SITE CONSISTS OF 3.37 ACRES, ON WHICH TWO COMMERCIAL BUILDINGS AND RELATED APPURTENANCES ARE PROPOSED. THE SITE IS MOSTLY WOODED WITH AVERAGE SLOPES OF ABOUT 6%. THERE ARE NO EXISTING BUILDINGS OR PAVEMENT ON THE SITE.

PRE–DEVELOPMENT CONDITIONS

THE SITE FLOWS IN TWO DIFFERENT DIRECTIONS. AREA A1 FLOWS TOWARDS THE SOUTHWEST INTO AN EXISTING CLOSED STORM SYSTEM PROVIDED IN THE RIGHT–OF–WAY. AREA A2 FLOWS NORTHWEST AND IS COLLECTED BY AN EXISTING CLOSED STORM SYSTEM LOCATED IN THE EXISTING SENECA FALLS WOODS SUBDIVISION (SEE FAIRFAX COUNTY PLAN #7491–SD–01). THE STORM SYSTEM IN AREAS A1 AND A2 COLLECT THE ONSITE AND OFFSITE RUNOFF, THEN DISCHARGE DIRECTLY INTO AN EXISTING FLOODPLAIN (SEE SHEET 13 FOR EXISTING STORM SYSTEM MAP).

POST–DEVELOPMENT CONDITIONS

AFTER DEVELOPMENT, THE DRAINAGE PATTERN WILL BE SIMILAR TO THE EXISTING CONDITIONS. AN UNDERGROUND STORAGE (UGS) SYSTEM IS TO BE PROVIDED FOR STORMWATER MANAGEMENT. THIS UGS WILL PROVIDE A REDUCTION AND IMPROVEMENT FACTOR FOR THE PEAK RATE OF THE 1–YEAR 24–HOUR STORM EVENT FOR CHANNEL PROTECTION AND A REDUCTION IN THE 2–YEAR AND 10–YEAR 24–HOUR STORM EVENTS (SEE SHEET 18 FOR UGS ROUTINGS).

THE EXISTING STORM DRAINAGE SYSTEM HAS BEEN ANALYZED AND FOUND TO BE ADEQUATE FOR BOTH PRE– AND POST–DEVELOPMENT CONDITIONS. PEAK FLOWS HAVE BEEN REDUCED FOR OVERLAND FLOW TO AREAS A1 AND A2 BY COLLECTING A PORTION OF THE DEVELOPED SITE INTO THE PROPOSED UNDERGROUND STORMWATER SYSTEM. THE UGS WILL REDUCE PEAK FLOWS IN AREA 1 TO BELOW EXISTING CONDITIONS. AREA A2 WILL HAVE REDUCED FLOWS DUE TO REDUCED DRAINAGE AREA (SEE CALCULATIONS THIS SHEET).

THE OVERALL DRAINAGE AREA MAP SHOWN ON SHEET 14 DEPICTS THE DRAINAGE AREA WHERE THE SITE OUTFALLS INTO THE EXISTING FLOODPLAIN FOR SUGARLAND RUN. THE TOTAL SITE AREA (3.37 ACRES) DRAINING INTO THE EXISTING FLOODPLAIN AT POINT "A" IS LESS THAN 1% OF THE OVERALL DRAINAGE AREA (357.45 ACRES) OF THE SUGARLAND RUN WATERSHED. THE MAJORITY OF THE OUTFALL IS AN EXISTING NATURAL CHANNEL IS WELL–DEFINED, WITH A STONY BOTTOM, VEGETATED BANKS, AND NO SIGNS OF EROSION. SOME OF THE OUTFALL CONSISTS OF AN ENGINEERED CHANNEL. SEE SHEETS 15–16 FOR PICTURES. THERE ARE NO DRAINAGE COMPLAINTS IN THE OUTFALL, THEREFORE, PER CHAPTER 124–4–4(c)(5)a, THE EXTENT OF THE DOWNSTREAM DRAINAGE IS COMPLETED AT POINT "A".

SINCE THE 1–YEAR FLOW WILL BE REDUCED WITH AN IMPROVEMENT FACTOR AND THE 2–YEAR AND 10–YEAR FLOWS FROM THE SITE WILL BE REDUCED BELOW THE EXISTING CONDITION, IT IS THEREFORE THE ENGINEER'S OPINION THAT AN ADEQUATE OUTFALL EXISTS FOR THIS PROJECT, AND THERE WILL BE NO ADVERSE IMPACT ON DOWNSTREAM PROPERTIES DUE TO THIS DEVELOPMENT.

WATER QUALITY REQUIREMENTS HAVE BEEN MET VIA 3 PROPOSED FILTERRAS, A STORMWATER ISOLATION ROW, AND A BAYFILTER LOCATED ONSITE. SEE SHEET 17 FOR RUNOFF REDUCTION METHOD SPREADSHEET CALCULATIONS. THE PROJECT AREA FOR BMP PURPOSES IS CONSIDERED TO BE THE SUBJECT SITE, THE OFFSITE DISTURBED AREA, AND THE OFFSITE AREA DRAINING THROUGH THE SUBJECT SITE.

NO.	DATE	REVISION PRIOR TO APPROVAL
1	7/19/2016	REVISED MAPS, COMPUTATIONS AND NARRATIVE

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OUTFALL NARRATIVE AND SWM MAPS

SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SE 2016–DR–009

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
09/20/16
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	REVIEW BY	APPROVD.	DATE
	REVISIONS			

DESIGN ADC	DRAFT ADC	APPROVED AHW	DATE APR. 2016
SCALE HORIZ.1" = 50' VERT: ---			

SHEET 12 OF 19

PRJ NO: 2014–2541

TYPE: SP EX

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PRE-DEVELOPMENT TO EXISTING STORM DRAIN DESIGN COMPUTATIONS (10-YR)

FROM	TO	DRAIN AREA (ACRES)	RUNOFF COEF. C	C x A INCR.	C x A ACCUM	TIME OF CONCENTRATION tc TO PIPE (min.)	TIME IN PIPE (sec.)	TIME	I	Q (cfs) INCR (c.f.s.)	Q (cfs) ACCUM (c.f.s.)	DESIGN PIPE DIA. In	DESIGN SLOPE Ft/Ft	DESIGN "n"	DESIGN MAX Q (c.f.s.)	DESIGN VEL Ft/Sec	PROFILE LENGTH Ft	PROFILE FALL Ft	PROFILE UPPER INV	PROFILE LOWER INV
EX 10-15	EX 10-16	3.12	0.35	1.09	1.09			5	7.27	7.94	7.94	24	0.0225	0.013	34.01	8.5	31.53	0.71	429.99	429.28
EX 10-16	EX 10-16A	2.53	0.75	1.90	2.99			5	7.27	13.79	21.73	24	0.0128	0.013	25.61	9.2	43.07	0.55	429.13	428.58
EX 10-16A	EX 10-12	0.00	0.00	0.00	2.99			5	7.27	0.00	21.73	24	0.0171	0.013	29.66	10.3	65.40	1.12	428.18	427.06
EX 10-12	EX 10-17A	0.00	0.00	0.00	2.99			5	7.27	0.00	21.73	24	0.0137	0.013	26.58	9.5	86.56	1.19	426.06	424.87
EX 10-17A	EX 10-17	0.00	0.00	0.00	2.99			5	7.27	0.00	21.73	24	0.0102	0.013	22.90	8.4	48.01	0.49	424.47	423.98
EX 10-17	EX 9-1C	0.00	0.00	0.00	2.99			5	7.27	0.00	21.73	24	0.0558	0.013	53.55	15.8	55.73	3.11	423.88	420.77
EX 9-1C	EX 9-1D	0.35	0.35	0.12	3.11			5	7.27	0.89	22.62	30	0.0108	0.013	42.70	8.8	149.17	1.61	420.37	418.76
EX 9-1D	EX 9-1E	1.76	0.60	1.06	4.17			5	7.27	7.68	30.30	30	0.0129	0.013	46.60	10.1	31.89	0.41	405.86	405.45
EX 9-1E	EX 9-1F	0.00	0.00	0.00	4.17			5	7.27	0.00	30.30	30	0.0060	0.013	31.97	7.5	21.49	0.13	397.62	397.49

POST-DEVELOPMENT TO EXISTING STORM DRAIN DESIGN COMPUTATIONS (10-YR)

FROM	TO	DRAIN AREA (ACRES)	RUNOFF COEF. C	C x A INCR.	C x A ACCUM	TIME OF CONCENTRATION tc TO PIPE (min.)	TIME IN PIPE (sec.)	TIME	I	Q (cfs) INCR (c.f.s.)	Q (cfs) ACCUM (c.f.s.)	DESIGN PIPE DIA. In	DESIGN SLOPE Ft/Ft	DESIGN "n"	DESIGN MAX Q (c.f.s.)	DESIGN VEL Ft/Sec	PROFILE LENGTH Ft	PROFILE FALL Ft	PROFILE UPPER INV	PROFILE LOWER INV
1	EX 10-15	UGS RELEASE			0.00			5	7.27	6.25	6.25	15	0.0100	0.013	6.47	6.1	50.00	0.50	430.50	430.00
EX 10-15	EX 10-16	0.97	0.35	0.34	0.34			5	7.27	2.47	8.72	24	0.0228	0.013	34.25	8.8	31.53	0.72	430.00	429.28
EX 10-16	EX 10-16A	2.53	0.75	1.90	2.24			5	7.27	13.79	22.51	24	0.0128	0.013	25.61	9.3	43.07	0.55	429.13	428.58
EX 10-16A	EX 10-12	0.00	0.00	0.00	2.24			5	7.27	0.00	22.51	24	0.0171	0.013	29.66	10.4	65.40	1.12	428.18	427.06
EX 10-12	EX 10-17A	0.00	0.00	0.00	2.24			5	7.27	0.00	22.51	24	0.0137	0.013	26.58	9.5	86.56	1.19	426.06	424.87
EX 10-17A	EX 10-17	0.00	0.00	0.00	2.24			5	7.27	0.00	22.51	24	0.0102	0.013	22.90	8.4	48.01	0.49	424.47	423.98
EX 10-17	EX 9-1C	0.00	0.00	0.00	2.24			5	7.27	0.00	22.51	24	0.0558	0.013	53.55	16.2	55.73	3.11	423.88	420.77
EX 9-1C	EX 9-1D	0.35	0.35	0.12	2.36			5	7.27	0.89	23.40	30	0.0108	0.013	42.70	8.9	149.17	1.61	420.37	418.76
EX 9-1D	EX 9-1E	1.76	0.60	1.06	3.42			5	7.27	7.68	31.08	30	0.0129	0.013	46.60	10.1	31.89	0.41	405.86	405.45
EX 9-1E	EX 9-1F	0.00	0.00	0.00	3.42			5	7.27	0.00	31.08	30	0.0060	0.013	31.97	#N/A	21.49	0.13	397.62	397.49

EXISTING STORM SEWER MAP

SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SE 2016-DR-009

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
09/26/16
PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	BY	APPRVD	DATE
1	7/19/2016	REVISED UGS RELEASE			

REVISIONS

REVIEW

CPJ Associates
Charles P. Johnson & Associates, Inc.
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DESIGN KJV	DRAFT KJV
APPROVED HMF	DATE APR. 2016
SCALE HORIZ: 1" = 30' VERT: ---	

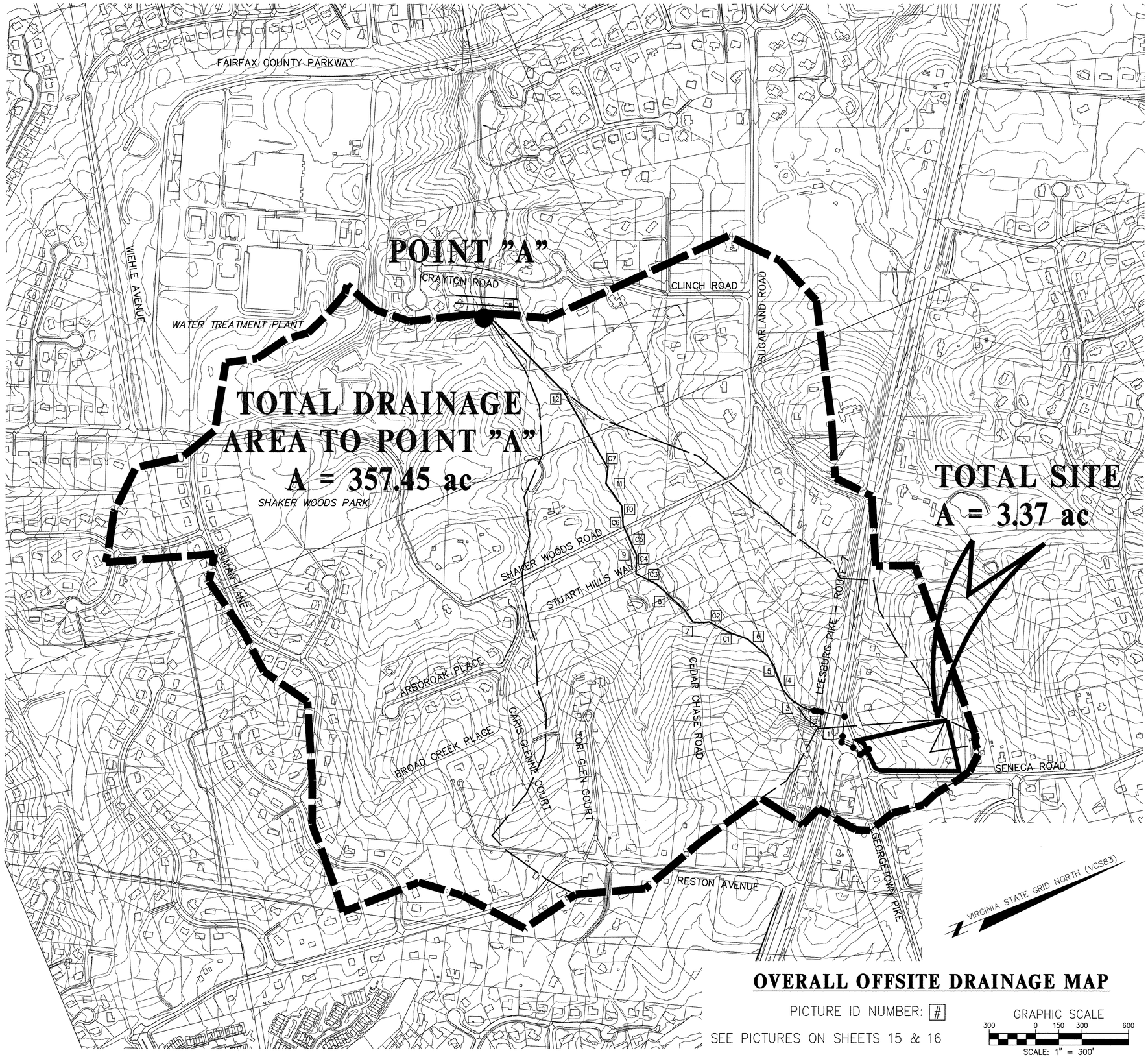
SHEET 13 OF 19

PRJ NO: 2014-2541

TYPE: SP EX

Attached Xrefs: 00-D0500/00-D0700

kvestal



OVERALL OFFSITE DRAINAGE MAP

PICTURE ID NUMBER: #

SEE PICTURES ON SHEETS 15 & 16

GRAPHIC SCALE
300 0 150 300 600
SCALE: 1" = 300'

OVERALL DRAINAGE MAP

SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
01/26/16
PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	REVIEW BY	APPRVD DATE
1	7/19/2016	REVISED SITE AREA		
		REVISION PRIOR TO APPROVAL		

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DESIGN ADC	DRAFT ADC		
APPROVED			
DATE	APR. 2016	SCALE	HORIZ: 1" = 300' VERT: ---

SHEET 14 OF 19

PRJ NO: 2014-2541

TYPE: SP EX

SF 2016-DR-009

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PHOTOS OF SITE OUTFALL

SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
07/20/16
PROFESSIONAL ENGINEER

NO.	DATE	REVISION PRIOR TO APPROVAL

NO.	DESCRIPTION	REVIEW BY	APPRVD.	DATE

REVISIONS

DESIGN ADC | DRAFT ADC
APPROVED HMF
DATE APR. 2016
SCALE HORIZ: --- VERT: ---

SHEET 15 OF 19

PRJ. NO: 2014-2541
TYPE: SP EX

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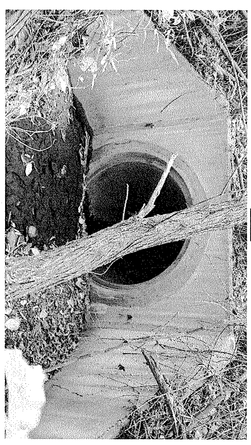
C1

C2



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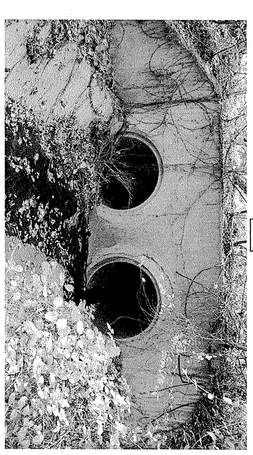

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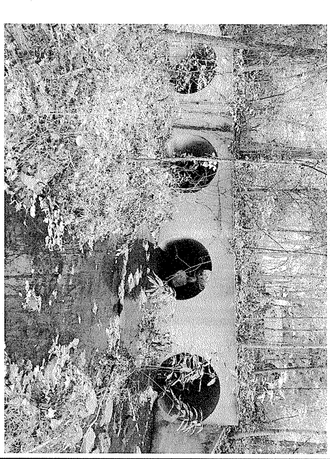

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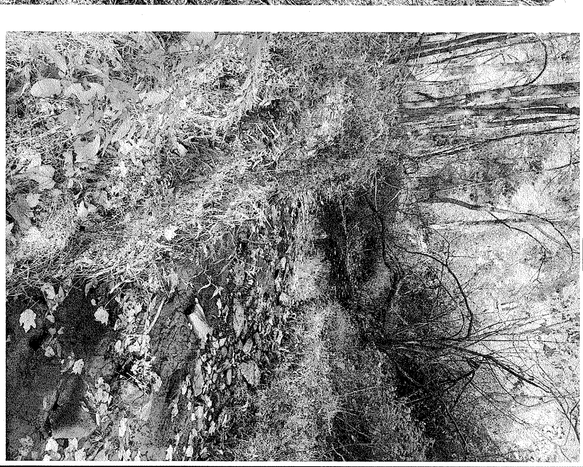

12

PHOTOS OF SITE OUTFALL

SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
09/26/16
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	REVIEW BY	APPRVD.	DATE
	REVISIONS			

NO.	DATE	REVISION PRIOR TO APPROVAL

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DESIGN	ADC
DRAFT	ADC
APPROVED	HMF
DATE	APR. 2016
SCALE HORIZ:	---
SCALE VERT:	---
SHEET	16
OF	19
PRJ NO.	2014-2541
TYPE:	SP EX

Attached Xrefs:

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kvestal

Virginia Runoff Reduction Method ReDevelopment Worksheet - v2.8 - June 2014
To be used w/ 2011 BMP Standards and Specifications
Site Data

Project Name: Seneca Place
Date: 7/13/2016

data input cells
calculation cells
constant values

Post-ReDevelopment Project & Land Cover Information

Total Disturbed Acreage 2.94

Constants

Annual Rainfall (inches)	43
Target Rainfall Event (inches)	1.00
Phosphorus EMC (mg/L)	0.26
Target Phosphorus Target Load (lb/acre/yr)	0.41
Pj	0.90

Nitrogen EMC (mg/L) 1.86

Pre-ReDevelopment 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	1.38	0.00	0.85	2.23
Managed Turf (acres) – disturbed, graded for yards or other turf to be mowed/managed	0.00	0.32	0.00	0.14	0.46
Impervious Cover (acres)	0.00	0.19	0.00	0.06	0.25
				Total	2.94

Post-ReDevelopment 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	0.00	0.00	0.00	0.00
Managed Turf (acres) – disturbed, graded for yards or other turf to be mowed/managed	0.00	0.52	0.00	0.21	0.73
Impervious Cover (acres)	0.00	1.37	0.00	0.84	2.21
				Total	2.94
Area Check	Okay	Okay	Okay	Okay	

Rv Coefficients

	A soils	B Soils	C Soils	D Soils
Forest/Open Space	0.02	0.03	0.04	0.05
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

Land Cover Summary Pre-ReDevelopment	Listed	Adjusted[1]
Forest/Open Space Cover (acres)	2.23	0.27
Composite Rv(forest)	0.04	0.04
% Forest	76%	28%
Managed Turf Cover (acres)	0.46	0.46
Composite Rv(turf)	0.22	0.22
% Managed Turf	16%	47%
Impervious Cover (acres)	0.25	0.25
Rv(impervious)	0.95	0.95
% Impervious	9%	26%
Total Site Area (acres)	2.94	0.98
Site Rv	0.14	0.35
Pre-Development Treatment Volume (acre-ft)	0.0350	0.0288
Pre-Development Treatment Volume (cubic feet)	1,526	1,256
Pre-Development Load (TP) (lb/yr)	0.96	0.79

Land Cover Summary Post-ReDevelopment	
Forest/Open Space Cover	0.00
Composite Rv(forest)	0.00
% Forest	0%
Managed Turf Cover (acres)	0.73
Composite Rv(turf)	0.21
% Managed Turf	74%
ReDev. Impervious Cover (acres)	0.25
Rv(impervious)	0.95
% Impervious	26%
Total ReDev. Site Area (acres)	0.98
ReDev. Site Rv	0.40
Post-ReDevelopment Treatment Volume (acre-ft)	0.0328
Post-ReDevelopment Treatment Volume (cubic feet)	1,430
Post-ReDevelopment Load (TP) (lb/yr)	0.90

Land Cover Summary Post-ReDevelopment New Impervious	
New Impervious Cover (acres)	1.96
Rv(impervious)	0.95
% Impervious	100%
Total New Dev. Site Area (acres)	1.96
New Dev. Site Rv	0.95
Post-Development Treatment Volume (acre-ft)	0.1552
Post-Development Treatment Volume (cubic feet)	6,759
Post-Development Load (TP) (lb/yr)	4.25

[1] *Adjusted* **Land Cover Summary** reflects the pre redevelopment land cover minus the pervious land cover (forest/open space or managed turf) acreage proposed for new impervious cover. The adjusted total acreage is consistent with the Post Redevelopment acreage (minus the acreage of new impervious cover). The load reduction requriement for the new impervious cover to meet the new development load limit is computed in **Column I**.

Maximum % Reduction Required Below Pre-ReDevelopment Load	20%
TP Load Reduction Required for Redeveloped Area (lb/yr)	0.27
TP Load Reduction Required for New Impervious Area (lb/yr)	3.44
Total Load Reduction Required (lb/yr)	3.71
Pre-Development Load (TN) (lb/yr)	6.85
Post-Development Load (TN) (lb/yr)	38.81

Drainage Area A

Drainage Area A Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres) – undisturbed, protected forest/open space or reforested land	0.00	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres) – disturbed, graded for yards or other turf to be mowed/managed	0.00	0.16	0.00	0.03	0.19	0.21
Impervious Cover (acres)	0.00	0.74	0.00	0.17	0.91	0.95
				Total	1.10	

TOTAL IMPERVIOUS COVER TREATED (ac)	0.91
TOTAL TURF AREA TREATED (ac)	0.19
AREA CHECK OK.	
Post Development Treatment Volume (cf)	3282
PHOSPHORUS REMOVAL BY PRACTICES THAT DO NOT REDUCE RUNOFF VOLUME IN D.A. A	1.44
TOTAL PHOSPHORUS REMOVAL IN D.A. A (lb/yr)	1.44

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
Bayfilter with Isolator Row	impervious acres draining to device	0% runoff volume reduction	0.00	0.91	0.00	0	3138	70	0.00	1.97	1.38	0.59	
	turf acres draining to device	0% runoff volume reduction	0.00	0.19	0.00	0	655	70	0.00	0.09	0.06	0.03	

Drainage Area B

Drainage Area B Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres) – undisturbed, protected forest/open space or reforested land	0.00	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres) – disturbed, graded for yards or other turf to be mowed/managed	0.00	0.02	0.00	0.05	0.07	0.24
Impervious Cover (acres)	0.00	0.60	0.00	0.66	1.26	0.95
				Total	1.33	

TOTAL IMPERVIOUS COVER TREATED (ac)	1.26
TOTAL TURF AREA TREATED (ac)	0.07
AREA CHECK OK.	
Post Development Treatment Volume (cf)	4405
PHOSPHORUS REMOVAL BY PRACTICES THAT DO NOT REDUCE RUNOFF VOLUME IN D.A. B	2.35
TOTAL PHOSPHORUS REMOVAL IN D.A. B (lb/yr)	2.35

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

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
14. Manufactured BMP													
Filterra and Bayfilter with Isolator Row	impervious acres draining to device	0% runoff volume reduction	0.00	1.26	0.00	0	4345	85	0.00	2.73	2.32	0.41	
	turf acres draining to device	0% runoff volume reduction	0.00	0.07	0.00	0	241	85	0.00	0.04	0.03	0.01	

Drainage Area C

Drainage Area C Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres) – undisturbed, protected forest/open space or reforested land	0.00	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres) – disturbed, graded for yards or other turf to be mowed/managed	0.00	0.01	0.00	0.03	0.04	0.24
Impervious Cover (acres)	0.00	0.00	0.00	0.00	0.00	0.00
				Total	0.04	

TOTAL IMPERVIOUS COVER TREATED (ac)	0.00
TOTAL TURF AREA TREATED (ac)	0.04
AREA CHECK OK.	
Post Development Treatment Volume (cf)	34
PHOSPHORUS REMOVAL BY PRACTICES THAT DO NOT REDUCE RUNOFF VOLUME IN D.A. C	0.02
TOTAL PHOSPHORUS REMOVAL IN D.A. C (lb/yr)	0.02

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

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
14. Manufactured BMP													
Filterra and Bayfilter with Isolator Row	impervious acres draining to device	0% runoff volume reduction	0.00	0.00	0.00	0	0	85	0.00	0.00	0.00	0.00	
	turf acres draining to device	0% runoff volume reduction	0.00	0.04	0.00	0	34	85	0.00	0.02	0.02	0.00	

Site Results

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
IMPERVIOUS COVER	0.91	1.26	0.00	0.00	0.00	OK.
IMPERVIOUS COVER TREATED	0.91	1.26	0.00	0.00	0.00	OK.
TURF AREA	0.19	0.07	0.04	0.00	0.00	OK.
TURF AREA TREATED	0.19	0.07	0.04	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Phosphorous

TOTAL PHOSPHOROUS LOAD REDUCTION REQUIRED (LB/YEAR)	3.71
RUNOFF REDUCTION (cf)	0
PHOSPHOROUS LOAD REDUCTION ACHIEVED (LB/YR)	3.81
ADJUSTED POST-DEVELOPMENT PHOSPHOROUS LOAD (TP) (lb/yr)	1.34
REMAINING PHOSPHOROUS LOAD REDUCTION (LB/YR) NEEDED	CONGRATULATIONS!! YOU EXCEEDED THE TARGET REDUCTION BY 0.1 LB/YEAR!!

Update Summary Sheet

Print

Site Data Summary

Total Rainfall = 43 inches

Site Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest (acres)	0.00	0.00	0.00	0.00	0.00	*0.00*
Turf (acres)	0.00	0.52	0.00	0.21	0.73	*24.83*
Impervious (acres)	0.00	1.37	0.00	0.84	2.21	*75.17*
					2.94	*100.00*

Site Rv	0.77
Post Development Treatment Volume (ft^3)	8189
Post Development TP Load (lb/yr)	5.15
Post Development TN Load (lb/yr)	36.81
Total TP Load Reduction Required (lb/yr)	3.71
Total Runoff Volume Reduction (ft^3)	0
Total TP Load Reduction Achieved (lb/yr)	4
Total TN Load Reduction Achieved (lb/yr)	0.00
Adjusted Post Development TP Load (lb/yr)	1.34
Remaining Phosphorous Load Reduction (Lb/yr) Required	0.00

Drainage Area Summary

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	Total
Forest (acres)	0.00	0.00	0.00	0.00	0.00	*0.00*
Turf (acres)	0.19	0.07	0.04	0.00	0.00	*0.30*
Impervious (acres)	0.91	1.26	0.00	0.00	0.00	*2.17*
						2.47

Drainage Area Compliance Summary

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	Total
TP Load Red. (lb/yr)	1.44	2.35	0.02	0.00	0.00	*3.81*
TN Load Red. (lb/yr)	0.00	0.00	0.00	0.00	0.00	*0.00*

Drainage Area A Summary

Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest (acres)	0.00	0.00	0.00	0.00	0.00	*0.00*
Turf (acres)	0.00	0.16	0.00	0.03	0.19	*17.27*
Impervious (acres)	0.00	0.74	0.00	0.17	0.91	*82.73*
					1.10	

BMP Selections

Practice	Credit Area (acres)		Downstream Practice
Bayfilter with Isolator Row	Impervious:	0.91	
	Turf (Pervious):	0.19	

Total Impervious Cover Treated (acres)	0.91
Total Turf Area Treated (acres)	0.19
Total TP Load Reduction Achieved in D.A. A (lb/yr)	1.44
Total TN Load Reduction Achieved in D.A. A (lb/yr)	0.00

Drainage Area B Summary

Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest (acres)	0.00	0.00	0.00	0.00	0.00	*0.00*
Turf (acres)	0.00	0.02	0.00	0.05	0.07	*5.26*
Impervious (acres)	0.00	0.60	0.00	0.66	1.26	*94.74*
					1.33	

BMP Selections

Practice	Credit Area (acres)		Downstream Practice
Filterra and Bayfilter with Isolator Row	Impervious:	1.26	
	Turf (Pervious):	0.07	

Total Impervious Cover Treated (acres)	1.26
Total Turf Area Treated (acres)	0.07
Total TP Load Reduction Achieved in D.A. A (lb/yr)	2.35
Total TN Load Reduction Achieved in D.A. A (lb/yr)	0.00

Drainage Area C Summary

Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest (acres)	0.00	0.00	0.00	0.00	0.00	*0.00*
Turf (acres)	0.00	0.01	0.00	0.03	0.04	*100.00*
Impervious (acres)	0.00	0.00	0.00	0.00	0.00	*0.00*
					0.04	

BMP Selections

Practice	Credit Area (acres)	Downstream Practice

Total Impervious Cover Treated (acres)	0.00
Total Turf Area Treated (acres)	0.04
Total TP Load Reduction Achieved in D.A. A (lb/yr)	0.02
Total TN Load Reduction Achieved in D.A. A (lb/yr)	0.00

Channel and Flood Protection

	Weighted CN	1-year storm Adjusted CN	2-year storm Adjusted CN	10-year storm Adjusted CN
Target Rainfall Event (in)		2.62	3.17	4.87
D.A. A CN	92	92	92	92
D.A. B CN	97	97	97	97
D.A. C CN	75	75	75	75

NO.	DATE	DESCRIPTION	BY	APPROD.
1	7/19/16	REVISED VRRM SPREADSHEET REVISION PRIOR TO APPROVAL		

REVISIONS

CPJ Associates
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RUNOFF REDUCTION METHOD SPREADSHEET

SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SE 2016-DR-009

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 039937
07/19/16
PROFESSIONAL ENGINEER

DESIGN ADC | DRAFT ADC | APPROVED HMF | DATE APR. 2016 | SCALE HORIZ: --- VERT: ---

SHEET 17 OF 19

PRJ NO: 2014-2541

TYPE: SP EX

Attached Xrefs: 00-D0700/00-D0500/6-4/FairfaxCountyTaxMap/11-2

Last Saved 9/23/2016 Last Plotted 9/23/2016 4:55 PM Sheet N:\14541\DWG\00-D2301

ROUTING: 1–YEAR

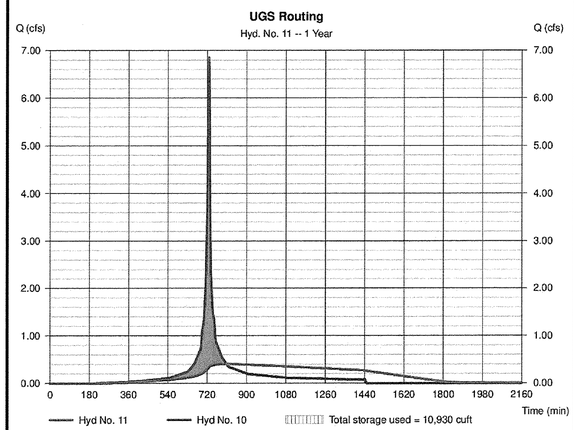
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 — Friday, Jul 15, 2016

Hyd. No. 11

UGS Routing

Hydrograph type	= Reservoir	Peak discharge	= 0.405 cfs
Storm frequency	= 1 yrs	Time to peak	= 808 min
Time interval	= 1 min	Hyd. volume	= 20,136 cuft
Inflow hyd. No.	= 10 - Total to UGS	Max. Elevation	= 436.74 ft
Reservoir name	= UGS	Max. Storage	= 10,930 cuft

Storage Indication method used.



ROUTING: 10–YEAR

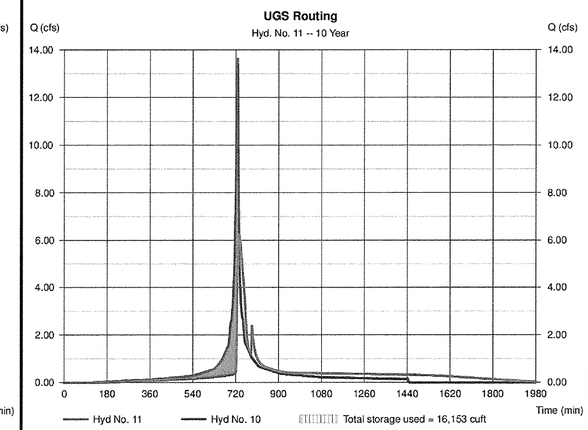
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 — Friday, Jul 15, 2016

Hyd. No. 11

UGS Routing

Hydrograph type	= Reservoir	Peak discharge	= 6.247 cfs
Storm frequency	= 10 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 41,892 cuft
Inflow hyd. No.	= 10 - Total to UGS	Max. Elevation	= 440.48 ft
Reservoir name	= UGS	Max. Storage	= 16,153 cuft

Storage Indication method used.



ROUTING: 2–YEAR

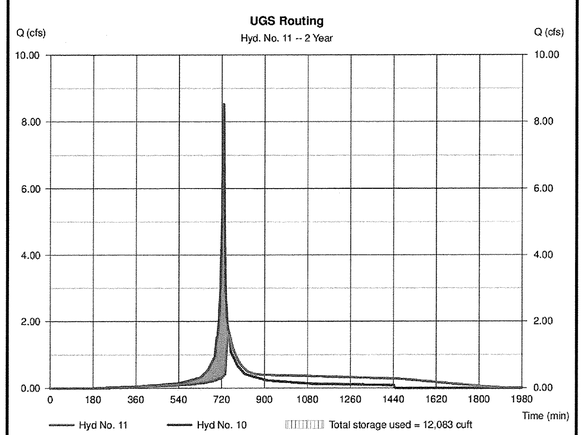
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 — Friday, Jul 15, 2016

Hyd. No. 11

UGS Routing

Hydrograph type	= Reservoir	Peak discharge	= 1.587 cfs
Storm frequency	= 2 yrs	Time to peak	= 752 min
Time interval	= 1 min	Hyd. volume	= 25,400 cuft
Inflow hyd. No.	= 10 - Total to UGS	Max. Elevation	= 437.34 ft
Reservoir name	= UGS	Max. Storage	= 12,083 cuft

Storage Indication method used.



UGS DATA

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 — Friday, Jul 15, 2016

Pond No. 1 - UGS

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	430.50	n/a	0	0
1.00	431.50	n/a	1,167	1,167
2.00	432.50	n/a	1,167	2,334
3.00	433.50	n/a	1,168	3,502
4.00	434.50	n/a	2,433	5,935
5.00	435.50	n/a	2,338	8,273
6.00	436.50	n/a	2,185	10,458
7.00	437.50	n/a	1,942	12,400
8.00	438.50	n/a	1,454	13,854
9.00	439.50	n/a	1,168	15,022
10.00	440.50	n/a	1,167	16,189

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	2.50	11.00	0.00
Span (in)	= 15.00	2.50	11.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 430.50	430.50	436.75	0.00
Length (ft)	= 50.00	1.00	1.00	0.00
Slope (%)	= 1.00	1.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest EL (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr)	= 0.000 (by Wet area)
TW Elev. (ft)	= 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	430.50	0.00	0.00	0.00	---	---	---	---	---	---	---	0.000
1.00	1,167	431.50	0.15 ic	0.15 ic	0.00	---	---	---	---	---	---	---	0.149
2.00	2,334	432.50	0.23 ic	0.22 ic	0.00	---	---	---	---	---	---	---	0.219
3.00	3,502	433.50	0.27 ic	0.27 ic	0.00	---	---	---	---	---	---	---	0.273
4.00	5,935	434.50	0.33 ic	0.32 ic	0.00	---	---	---	---	---	---	---	0.317
5.00	8,273	435.50	0.37 ic	0.36 ic	0.00	---	---	---	---	---	---	---	0.357
6.00	10,458	436.50	0.39 ic	0.39 ic	0.00	---	---	---	---	---	---	---	0.392
7.00	12,400	437.50	0.43 ic	0.42 ic	1.71 ic	---	---	---	---	---	---	---	2.130
8.00	13,854	438.50	0.46 ic	0.46 ic	3.61 ic	---	---	---	---	---	---	---	4.066
9.00	15,022	439.50	0.46 ic	0.46 ic	4.81 ic	---	---	---	---	---	---	---	5.293
10.00	16,189	440.50	0.51 ic	0.51 ic	5.76 ic	---	---	---	---	---	---	---	6.275

NO.	DATE	REVISION
1	7/19/2016	REVISED UGS AND ROUTINGS PRIOR TO APPROVAL

CPJ Associates
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STORMWATER ROUTINGS

SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SE 2016–DR–009

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
09/24/16
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	DATE	APPRVD	REVIEW BY
	REVISIONS			

DESIGN ADC	DRAFT ADC
APPROVED HMF	
DATE APR. 2016	SCALE HORIZ: --- VERT: ---

SHEET 18 OF 19

PRJ NO: 2014–2541

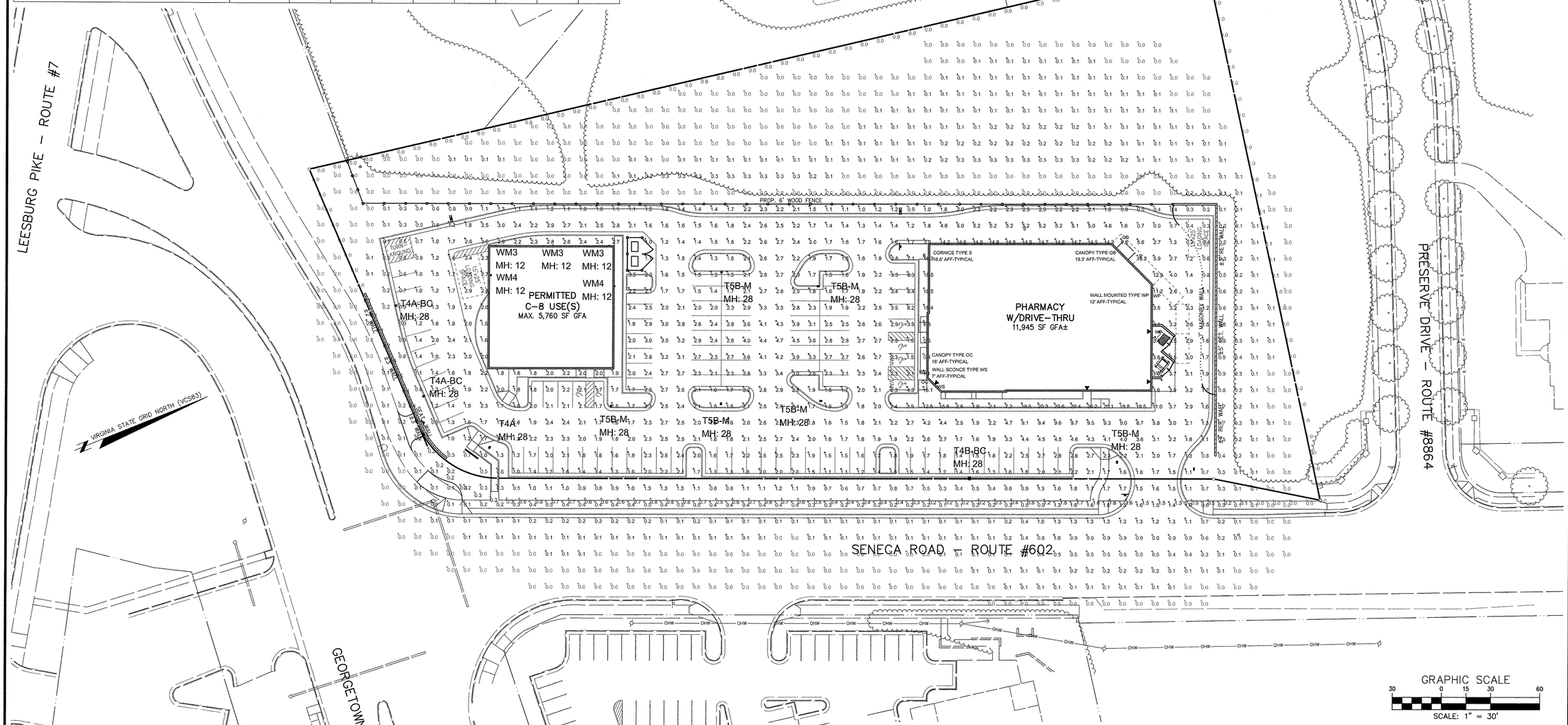
TYPE: SP EX

Attached Xrefs: 00–00700/00–00500/6–4/FairfaxCountyTonMap/11–2

Luminaire Schedule									
Project: HUBBELL LIGHTING									
Symbol	Label	Qty	Arrangement	Description	Lum. Lumens	LMF	Lum. Watts	Arr. Watts	Total Watts
	T4A	1	SINGLE	CL1-30L-4K-4	7726	0.903	70	70	70
	T4A-BC	2	SINGLE	CL1-30L-4K-4-BC	6318	0.903	70	70	140
	T4B-BC	1	SINGLE	CL1-60L-4K-4-BC	12392	0.903	135	135	135
	T5B-M	6	SINGLE	CL1-60L-4K-5M	15421	0.903	135	135	810
	WM3	3	SINGLE	LNC2-12LU-4K-3	2662	0.903	28.4	28.4	85.2
	WM4	2	SINGLE	LNC2-12LU-4K-4	2715	0.903	28.3	28.3	56.6

Luminaire Schedule						
Project: FIXTURES BY OTHERS - HUBBELL IS NOT RESPONSIBLE FOR THE PERFORMANCE OF LUMINAIRES MANUFACTURED BY OTHERS						
Symbol	Label	Qty	Arrangement	Description	Lum. Lumens	LMF
	OB	4	SINGLE	PT2013-E0155	1130	0.855
	OC	1	SINGLE	EVO 41/29 8AR 120	3108	0.903
	S4	3	GROUP	ECVLXWET-4-120-4K-2780	N.A.	0.903
	S6	44	GROUP	ECVLXWET-6-120-4K-2780	N.A.	0.903
	WP	3	SINGLE	DSXW1 LED 10C 1000 40K TFTM MVOLT	3944	0.903
	WS	2	SINGLE	AZ-5L-LED75-4K-(2)EBU-BB-CTB-BZ	5187	0.903

Calculation Summary									
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	PtSpcLr	PtSpcTb
Adjacent C-8 Permitted Parking Area	Illuminance	Fc	2.03	4.4	0.6	3.38	7.33	10	10
All CalcPts Extending Out To Zero Foot-Candles	Illuminance	Fc	1.31	20.6	0.0	N.A.	N.A.	10	10
Boundary	Illuminance	Fc	0.23	1.7	0.0	N.A.	N.A.	10	N.A.
CVS Parking Area	Illuminance	Fc	3.08	20.6	1.1	2.80	18.73	10	10



NOT A CONSTRUCTION DOCUMENT - FOR DESIGN PURPOSES ONLY

FOR PRICING & CUT SHEETS
NESCO
40 HUDSON RD.
CANTON, MA 02021
TEL: 781-828-9494
EMAIL:CVSplans@needhamelectric.com

1. THIS LIGHTING DESIGN IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO HUBBELL LIGHTING. SITE DETAILS PROVIDED HEREON ARE REPRODUCED ONLY AS A VISUALIZATION AID. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION, CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, ETC.) SHOULD BE COORDINATED WITH THE CONTRACTOR AND/OR SPECIFIER RESPONSIBLE FOR THE PROJECT.

2. LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP, BALLAST, AND LUMINAIRE MAY AFFECT FIELD RESULTS.

3. CONFORMANCE TO FACILITY CODE AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.

TITLE: PHOTOMETRIC PLAN
CVS #10684
GREAT FALLS, VA

REVISED FROM DRAWING NUMBER(S): 1677491, 1678996, 1679460

HUBBELL® — Hubbell Lighting, Inc. 701 MILLENNIUM BLVD. GREENVILLE, SC 29607

DN BY: ADC	DATE: 1-19-16	CHK BY:
REV BY: YWY	DATE: 7-18-16	SCALE: AS NOTED
QUOTE: N/A	DRAWING / DESIGN NO.: 1679488	

NO.	DATE	REVISION
1.	7-19-16	NEW SHEET

PRIOR TO APPROVAL

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PHOTOMETRIC PLAN

SENECA CORNER

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA — BRIAN R. THOMAS — Lic. No. 038937 — 08/24/16 — PROFESSIONAL ENGINEER

NO.	DESCRIPTION	REVIEW APPROVAL DATE	BY
	REVISIONS		

DESIGN	DRAFT	APPROVED	DATE APR. 2016	SCALE HORIZ: 1" = 30' VERT: ---
SHEET 19	OF 19			
PRJ NO: 2014-2541				
TYPE: SP EX				

SE 2016-DR-009

Attached Xrefs: 00-D0500/00-D0700

Last Saved 8/22/2016 Last Plotted 9/23/2016 4:32 PM Sheet N:\14541\DWG\00-D0602