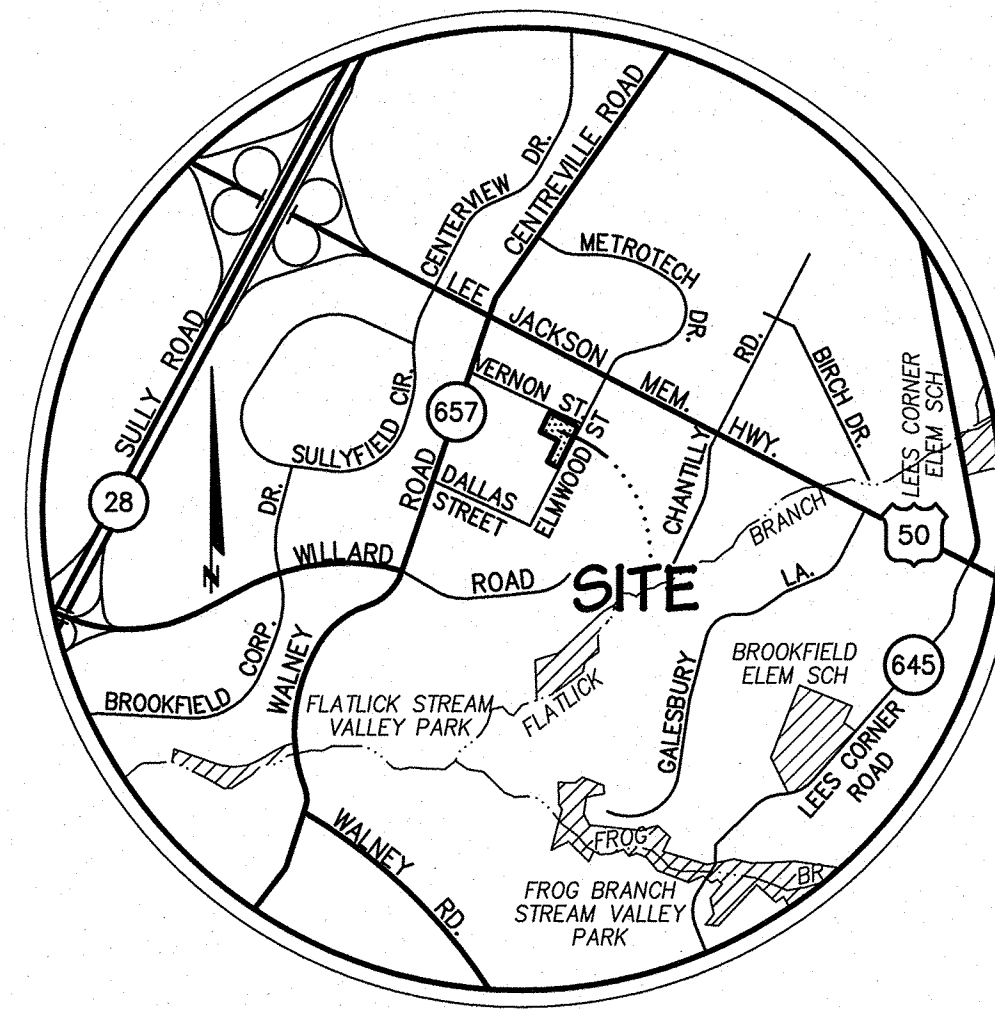


GENERALIZED DEVELOPMENT PLAN

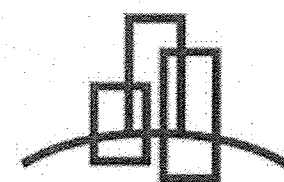
ROCKLAND VILLAGE GREEN

SULLY DISTRICT
FAIRFAX COUNTY, VIRGINIA



VICINITY MAP
 SCALE : 1" = 2000'

ATTORNEY



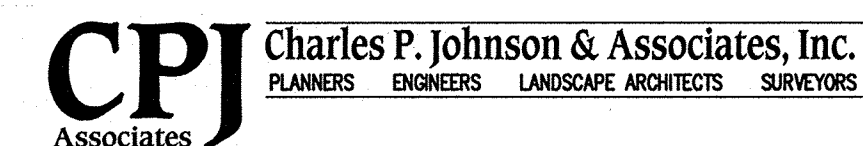
**Walsh Colucci
 LUBELEY & WALSH PC**
 COURTHOUSE PLAZA
 2200 CLARENDON BOULEVARD
 SUITE 1300
 ARLINGTON, VIRGINIA 22201-3359
 (703) 528-4700

APPLICANT



Carrhomes, LLC
 3877 FAIRFAX RIDGE ROAD
 SUITE 105N
 FAIRFAX, VIRGINIA 22030
 (703) 658-6060

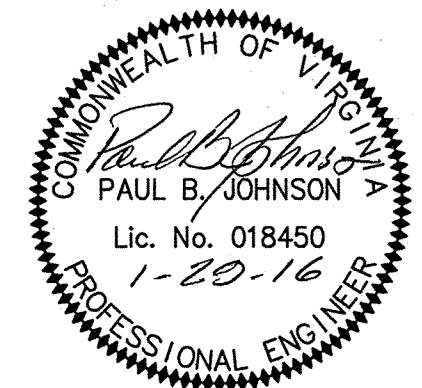
CIVIL ENGINEER



3959 PENDER DRIVE
 SUITE 210
 FAIRFAX, VIRGINIA 22030
 (703) 385-7555

SHEET INDEX

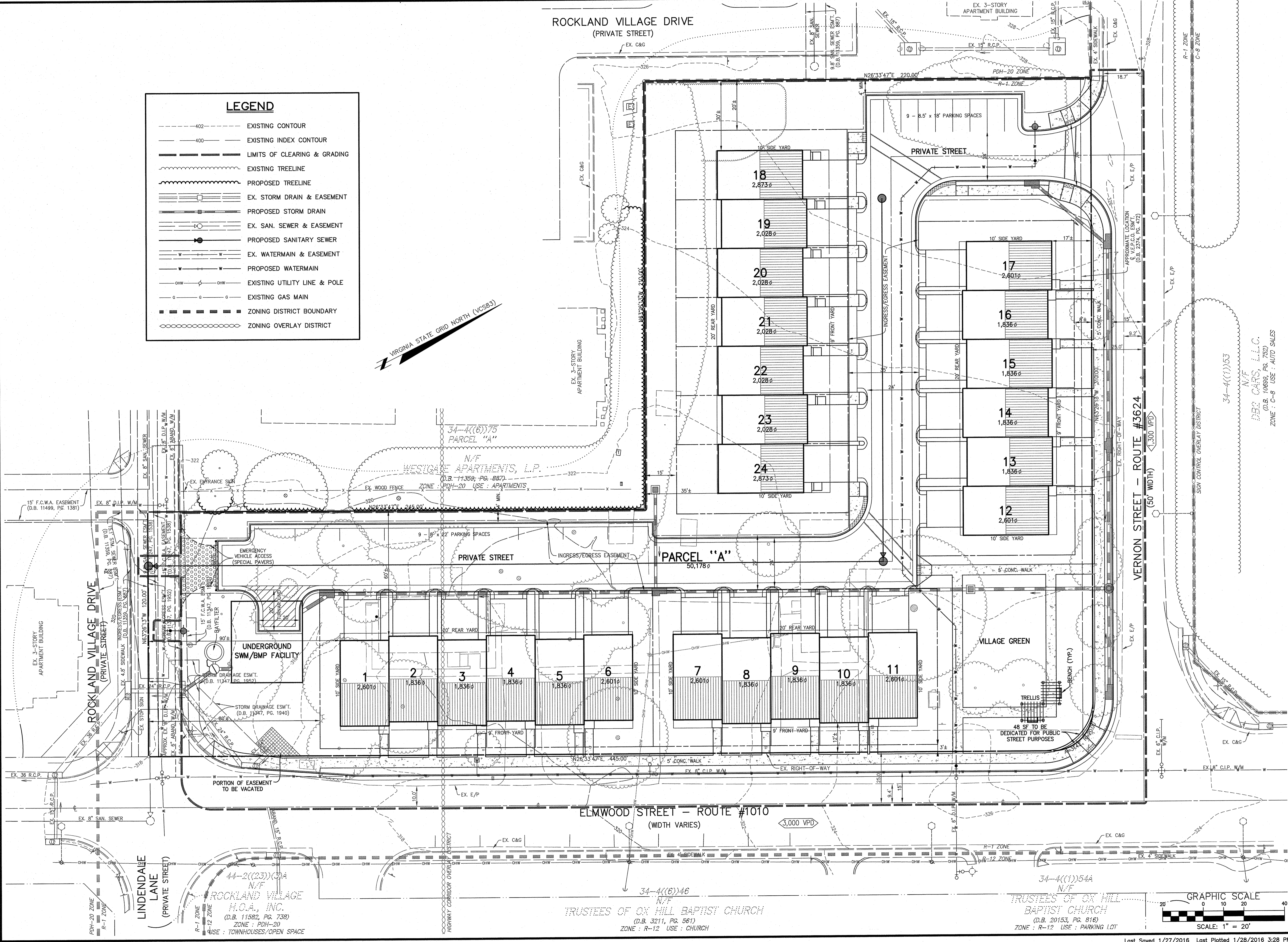
- 1 COVER SHEET
- 2 NOTES & DETAILS
- 3 EXISTING CONDITIONS & VEGETATION MAP
- 4 GENERALIZED DEVELOPMENT PLAN
- 5 LANDSCAPE PLAN
- 6 TREE PRESERVATION PLAN
- 7 TREE PRESERVATION INVENTORY & DETAILS
- 8 STORMWATER AND BMP MAPS AND NARRATIVE
- 9 OVERALL DRAINAGE MAP
- 10 PHOTOS OF SITE OUTFALL
- 11 VIRGINIA RUNOFF REDUCTION METHOD SPREADSHEET
- 12 STORMWATER MANAGEMENT ROUTING
- 13 STORMWATER MANAGEMENT ROUTING & EXISTING STORM SEWER



DATE : JANUARY 27, 2016

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
---	ZONING DISTRICT BOUNDARY
---	ZONING OVERLAY DISTRICT

VIRGINIA STATE GRID NORTH (VCS83)



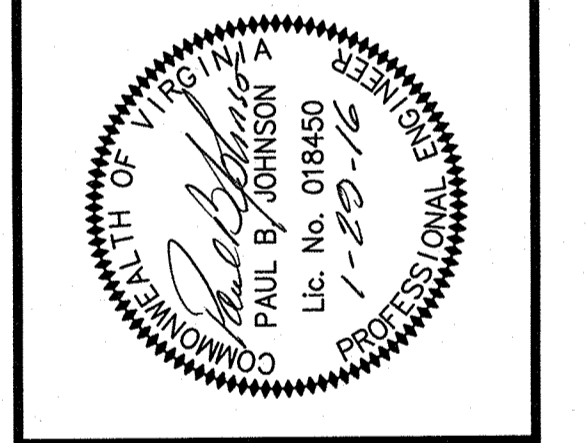
NO. DATE REVISION PRIOR TO APPROVAL

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GENERALIZED DEVELOPMENT PLAN

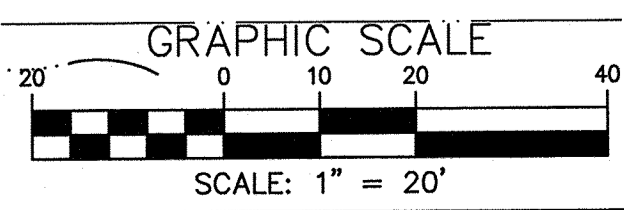
ROCKLAND VILLAGE GREEN

SULLY DISTRICT
 FAIRFAX COUNTY, VIRGINIA

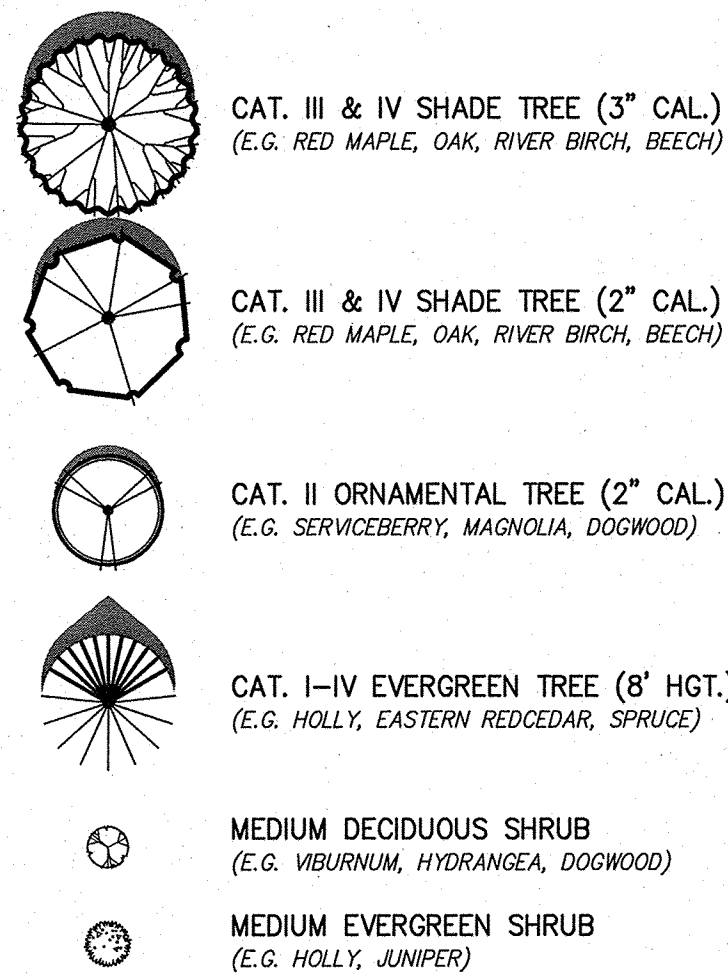


DESIGN	DRAFT	DATE	DESCRIPTION	REVISIONS
KJV	KJV			
HMF	HMF			
JAN	JAN	2016		
SCALE	SCALE	20'		
VERT.	VERT.			

SHEET	4	OF	13
PRJ NO:	2015-2551		
TYPE:	GDP		



LEGEND



* 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.

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	29,100 SF	
B	Percentage of gross site area covered by existing tree canopy	28.6 %	
C	Percentage of 10-year canopy required for site	15 %	
D	Percentage of 10-year canopy requirement that should be met through tree preservation	28.6 %	
E	Proposed percentage of canopy requirement that will be met through tree preservation	0.0 %	
F	Has the Tree Preservation Target minimum been met?	NO	
G	If no, provide sheet number where deviation approval is located	SHEET 2	

B. Tree Canopy Requirement			
1	Identify gross site area	101,914 SF	
2	Subtract area dedicated to road frontage and parks	48 SF	
3	Subtract area of exemptions	0 SF	
4	Adjusted gross site area (B1 - B2 - B3)	101,866 SF	
5	Identify site's zoning and/or use	R-12	
6	Percentage of 10-year canopy required	15 %	
7	Area of 10-year canopy required (B4 x B6)	15,280 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	4,363 SF	
2	Total canopy area meeting standards of §12-0200	0 SF	
3	x 1.25	0 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	Total of C3, C5, C7, C9, and C11	0 SF	

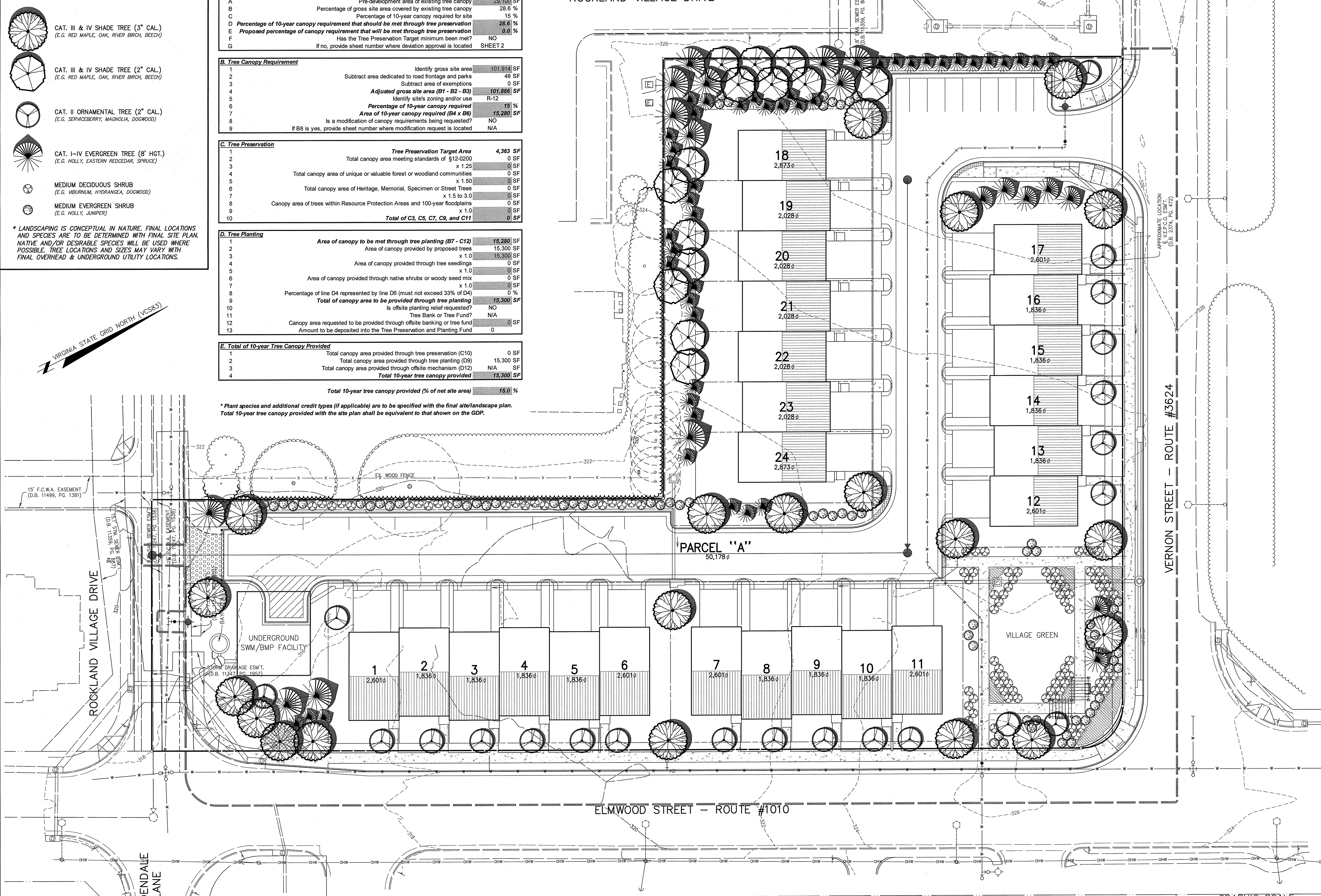
D. Tree Planting			
1	Area of canopy to be met through tree planting (B7 - C12)	15,280 SF	
2	Area of canopy provided by proposed trees	15,300 SF	
3	x 1.0	15,300 SF	
4	Area of canopy provided through tree seedlings	0 SF	
5	x 1.0	0 SF	
6	Area of canopy provided through native shrubs or woody seed mix	0 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	15,300 SF	
10	Is onsite 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)	0 SF	
2	Total canopy area provided through tree planting (D9)	15,300 SF	
3	Total canopy area provided through offsite mechanism (D12)	N/A	
4	Total 10-year tree canopy provided	15,300 SF	

Total 10-year tree canopy provided (% of net site area) **15.0 %**

* 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 GDP.

ROCKLAND VILLAGE DRIVE



PARCEL "A"
50,178 sq

VILLAGE GREEN

ELMWOOD STREET - ROUTE #1010

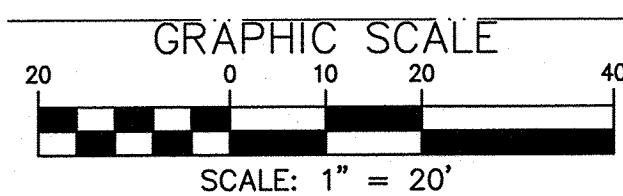
VERNON STREET - ROUTE #3624

ROCKLAND VILLAGE DRIVE

LINDENDALE LANE

UNDERGROUND SWM/BMP FACILITY

THIS SHEET IS FOR LANDSCAPE PURPOSES ONLY



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LANDSCAPE PLAN

ROCKLAND VILLAGE GREEN

SULLY DISTRICT
FAIRFAX COUNTY, VIRGINIA






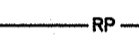


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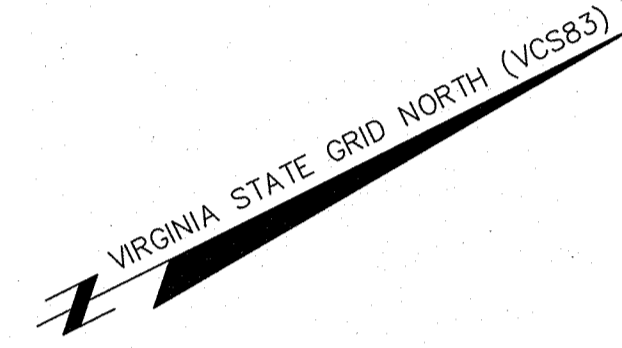
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SHEET 5 OF 13
PRJ NO: 2015-2551
TYPE: GDP

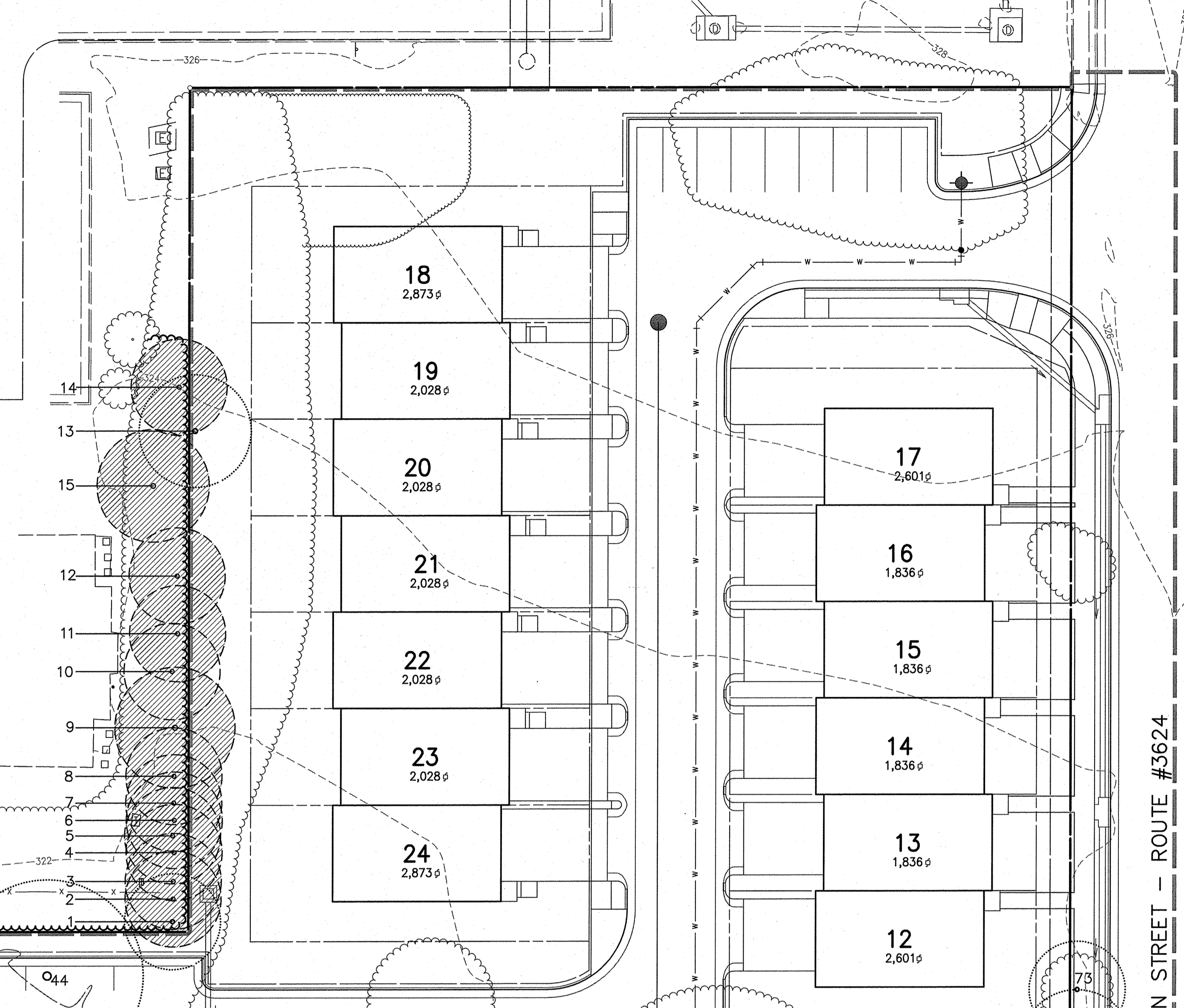
THIS PLAN IS *NOT* INTENDED TO BE USED FOR CALCULATING 10-YEAR TREE CANOPY. PLEASE SEE THE LANDSCAPE PLAN ON SHEET 5.

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



ROCKLAND VILLAGE DRIVE



VERNON STREET - ROUTE #3624

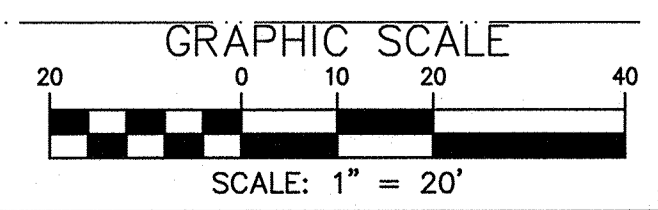
ELMWOOD STREET - ROUTE #1010

ROCKLAND VILLAGE DRIVE

LINDDALE LANE

BAY FILTER
UNDERGROUND SWM/BMP FACILITY

THIS SHEET IS FOR TREE PRESERVATION PURPOSES ONLY



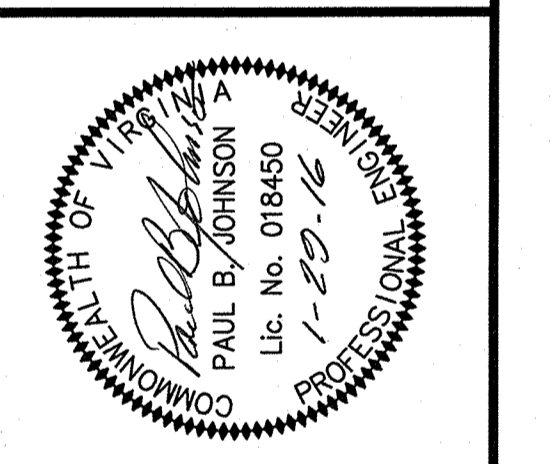
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TREE PRESERVATION PLAN

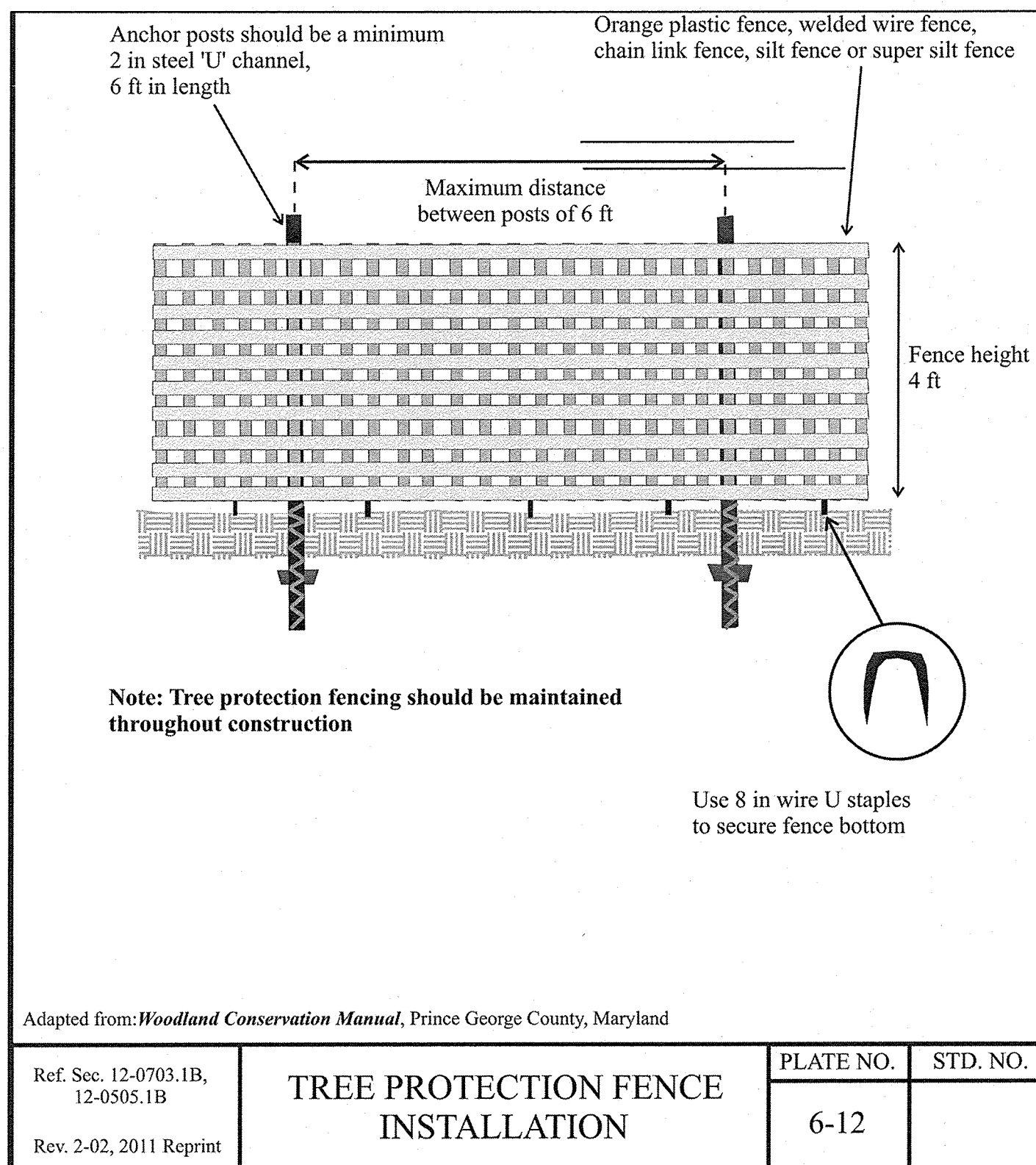
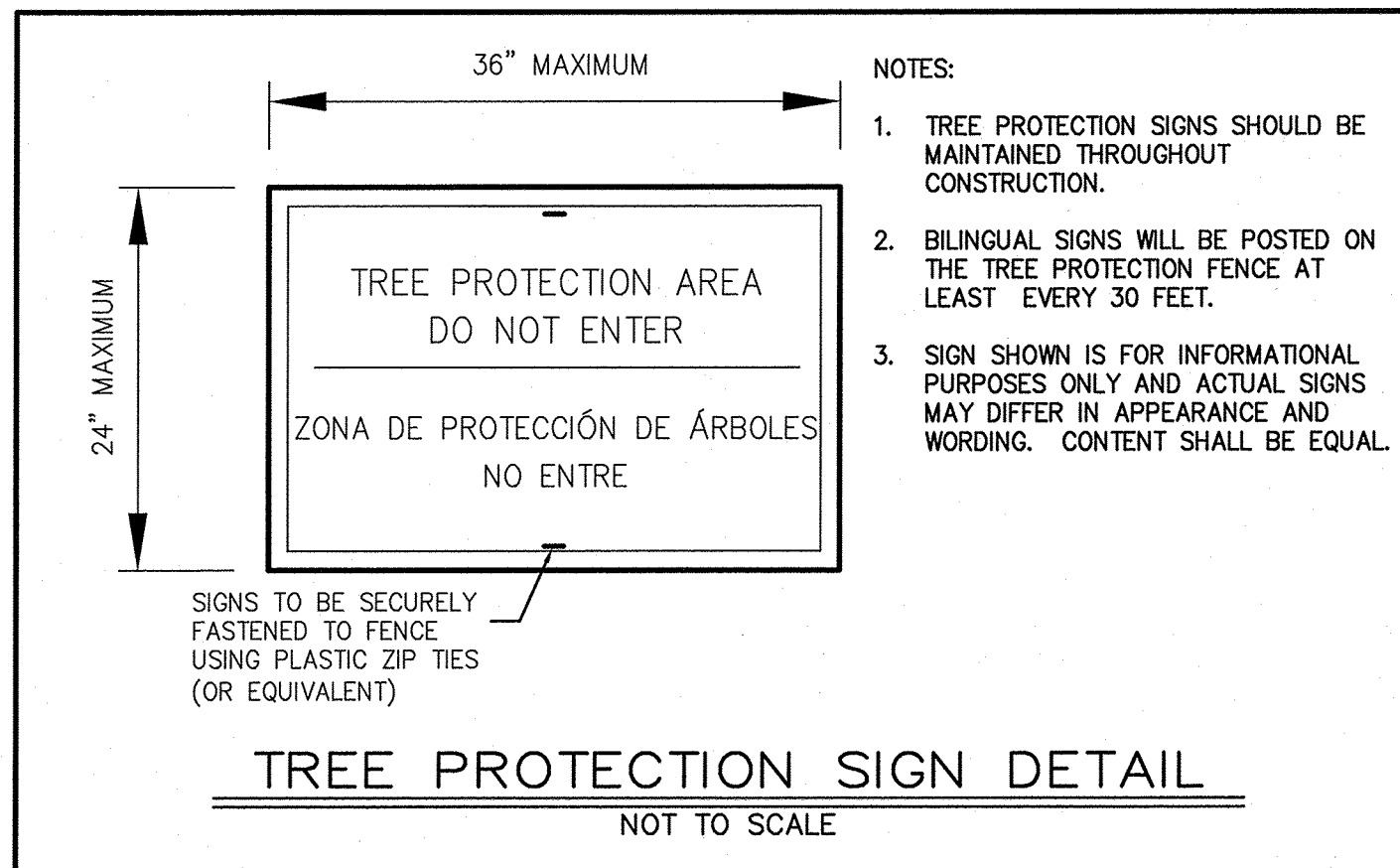
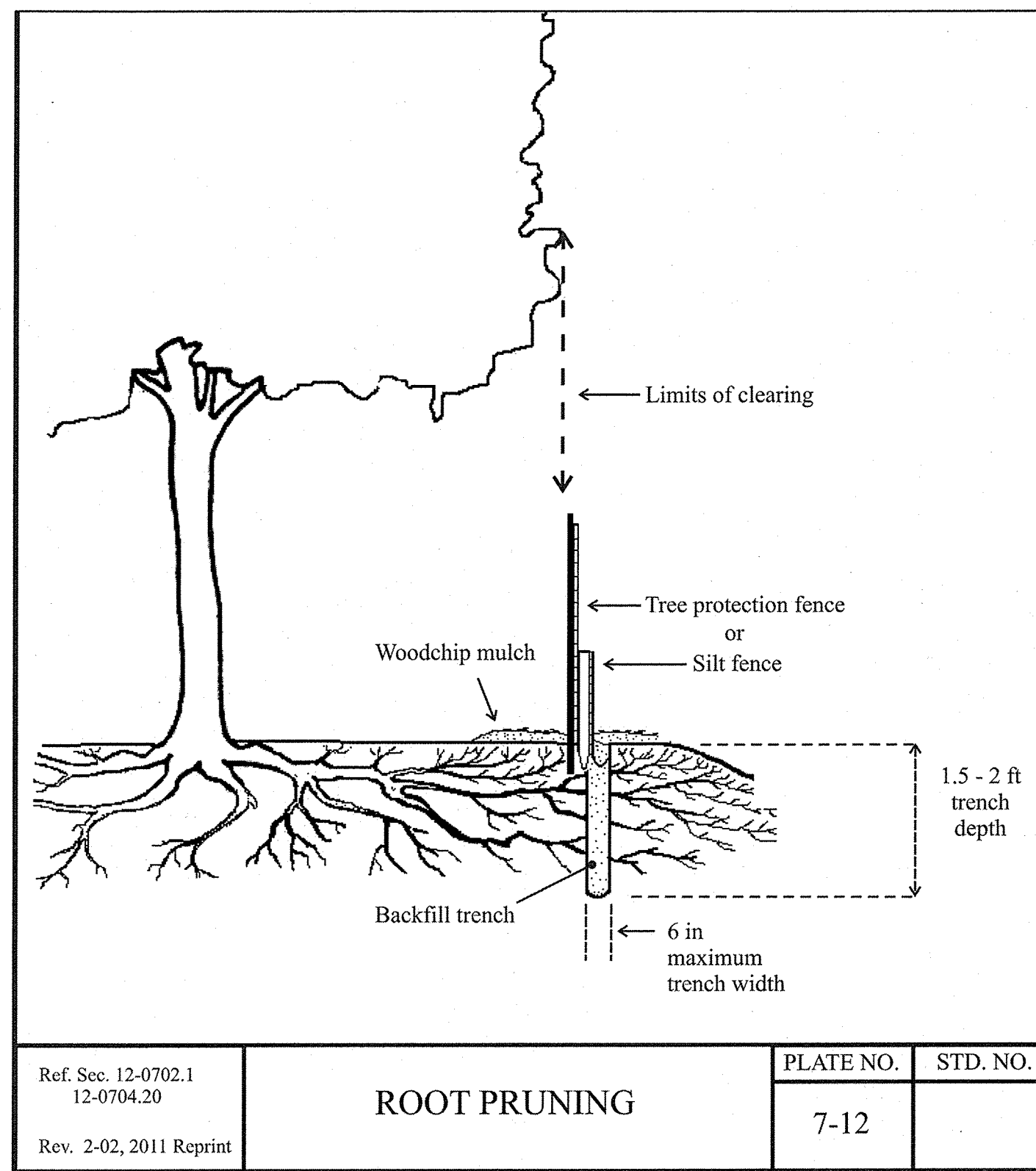
ROCKLAND VILLAGE GREEN

SULLY DISTRICT
FAIRFAX COUNTY, VIRGINIA



NO.	DESCRIPTION	REVISIONS	DATE	BY

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APPROVED	DATE	VERT: ---
HMF		
SHEET	OF	
6	13	
PRJ NO: 2015-2551		
TYPE: GDP		



TREE INVENTORY AND ACTIVITIES SPREADSHEET

Tree #	Tree # (Survey)	COMMON NAME	SCIENTIFIC BINOMIAL	DBH(in)	CONDITION	COMMENTS	LOCATION	STATUS	ACTIVITIES						
									ROOT PRUNE	MULCH	TREE FENCE	FERTILIZE	CABLE	CANBLSTAT	TREAT PRETS
1	1	black walnut	Juglans nigra	12	72	multiple leaders, multiple curves in trunk, buttressing roots, crowding, uneven canopy	offsite	remove							
2	2	Eastern redcedar	Juniperus virginiana	12	72	dual trunks, epicormic sprouting, broken branches, crowding	offsite	preserve	X	X	X				
3	3	Eastern redcedar	Juniperus virginiana	12	73	epicormic sprouting, crowding, leaning canopy, debris at base	offsite	preserve	X	X	X				
4	4	Eastern redcedar	Juniperus virginiana	12	72	dual leaders, debris at base, epicormic sprouting, crowding	offsite	preserve	X	X	X				
5	5	Eastern redcedar	Juniperus virginiana	12	74	debris at base, epicormic sprouting, crowding	offsite	preserve	X	X	X				
6	6	Eastern redcedar	Juniperus virginiana	12	72	epicormic sprouting, crowding	offsite	preserve	X	X	X				
7	7	Eastern redcedar	Juniperus virginiana	12	74	crowding, leaning canopy, uneven canopy	offsite	preserve	X	X	X				
8	8	Eastern redcedar	Juniperus virginiana	12	70	crowding, uneven canopy, large scar on trunk, epicormic sprouting, dual leaders	offsite	preserve	X	X	X				
9	9	Eastern redcedar	Juniperus virginiana	15	72	crowding, epicormic sprouting	offsite	preserve	X	X	X				
10	10	Eastern redcedar	Juniperus virginiana	12	73	multiple leaders, crowding, epicormic sprouting	offsite	preserve	X	X	X				
11	11	Eastern redcedar	Juniperus virginiana	12	74	crowding, epicormic sprouting	offsite	preserve	X	X	X				
12	12	Eastern redcedar	Juniperus virginiana	12	71	leaning trunk, vine coverage, multiple curves in trunk	offsite	preserve	X	X	X				
13	13	American elm	Ulmus americana	14	72	multiple leaders, epicormic sprouting, vine coverage	onsite	remove							
14	14	Eastern redcedar	Juniperus virginiana	12	72	epicormic sprouting, crowding, rubbing branches	offsite	preserve	X	X	X				
15	15	Eastern redcedar	Juniperus virginiana	14	70	dual trunks, extensive epicormic sprouting, uneven canopy	offsite	preserve	X	X	X				
19	8219	Eastern redcedar	Juniperus virginiana	15	74	good condition	onsite	remove							
30	8230	red maple	Acer rubrum	20	65	buttressing roots, multiple leders, large crack in trunk and decay of heartwood, broken branches	offsite	preserve	X	X	X				
39	8239	Eastern white pine	Pinus strobus	24	72	multiple leaders, uneven canopy, power lines through canopy	onsite	remove							
44	8244	silver maple	Acer saccharinum	24	73	buttressing roots, multiple leders, included bark, dense canopy	onsite	remove							
73	8673	Eastern redbud	Cercis canadensis	12	65	multiple trunks, poor form, broken branches, epicormic sprouting	offsite	remove							
74	8674	Eastern redbud	Cercis canadensis	14	65	multiple trunks, poor form, broken branches, epicormic sprouting, dense and twiggy canopy	offsite	remove							
80	8680	Eastern redbud	Cercis canadensis	15	65	multiple trunks, poor form, broken branches, epicormic sprouting	offsite	remove							
82	8682	Eastern redbud	Cercis canadensis	15	50	multiple leaders, uneven canopy, broken limbs leaning against trunk, extensive dieback, sparse canopy	offsite	remove							
85	8185	Eastern white pine	Pinus strobus	15	76	good condition	onsite	remove							
86	8286	pin oak	Quercus palustris	24	72	multiple leaders, limb dieback, epicormic sprouting, dense canopy	offsite	preserve	X	X	X				

NOTES :

- AS STATED BY SECTION 12-0507.1B AND SECTION 12-0507.2B 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 INSIDE ONE OF THE TWO FOLLOWING AREAS WILL BE IDENTIFIED IN THE TREE INVENTORY.
AREA 1. 100 FEET OR LESS FROM THE PROPOSED LIMITS OF CLEARING AND GRADING WITHIN THE UNDISTURBED AREA.
AREA 2. 10 FEET OR LESS FROM THE PROPOSED LIMITS OF CLEARING AND GRADING WITHIN THE DISTURBED AREA.
- AS STATED BY SECTION 12-0507.2C, A TREE INVENTORY AND POOR CONDITION ANALYSIS SHALL BE DONE FOR TREES WHICH ARE 12 INCHES IN DIAMETER OR GREATER THAT RESIDE ON OFFSITE PROPERTIES 25 FEET OR LESS FROM THE PROPOSED LIMITS OF CLEARING.
- VINES SHOULD BE CUT AND CLEARED FROM THE GROUND TO 1 FOOT UP THE TRUNK AS WELL AS A 3 FOOT RADIUS AROUND THE BASE. VINES THAT CAN BE REMOVED FROM THE LIMBS WITHOUT DAMAGING THE BARK OR THE STRUCTURAL INTEGRITY OF THE LIMB SHALL BE REMOVED WHILE THE REMAINING VINES WILL BE ALLOWED TO WITHER.

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.

- 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.
- 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, superintendent, clearing contractor, UFM/DPWES representative and hired arborist/forester (should one be required by UFM/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.
- 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 UFM/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.
- Protection of Existing Understorey 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 UFM/DPWES.
- 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 UFM.
- Root Pruning: Tree preservation Areas shall be root pruned along the limits of clearing as noted 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.
- 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.
- 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 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 UFM/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. UFM 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 UFM.
- 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.
- 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.
- Site Monitoring: During any clearing or tree/vegetation structure removal or transplantation of vegetation on the subject site, if required by UFM/DPWES, a certified arborist shall be present to monitor the process and ensure that the activities are conducted as approved by UFM. The arborist should monitor all tree preservation efforts in order to ensure conformance with all tree preservation conditions, and UFM 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 should be notified of the name and contact information of the arborist responsible for site monitoring at the tree preservation walk-through meeting.

THIS PLAN IS *NOT* INTENDED TO BE USED FOR CALCULATING 10-YEAR TREE CANOPY. PLEASE SEE THE LANDSCAPE PLAN ON SHEET 5.

THIS SHEET IS FOR TREE PRESERVATION PURPOSES ONLY

NO. DATE REVISION PRIOR TO APPROVAL

ROCKLAND VILLAGE GREEN

SULLY DISTRICT
FAIRFAX COUNTY, VIRGINIA

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LBD
APPROVED HWF
DATE JAN. 2016
SCALE
HORIZ: ---
VERT: ---

SHEET 7 OF 13

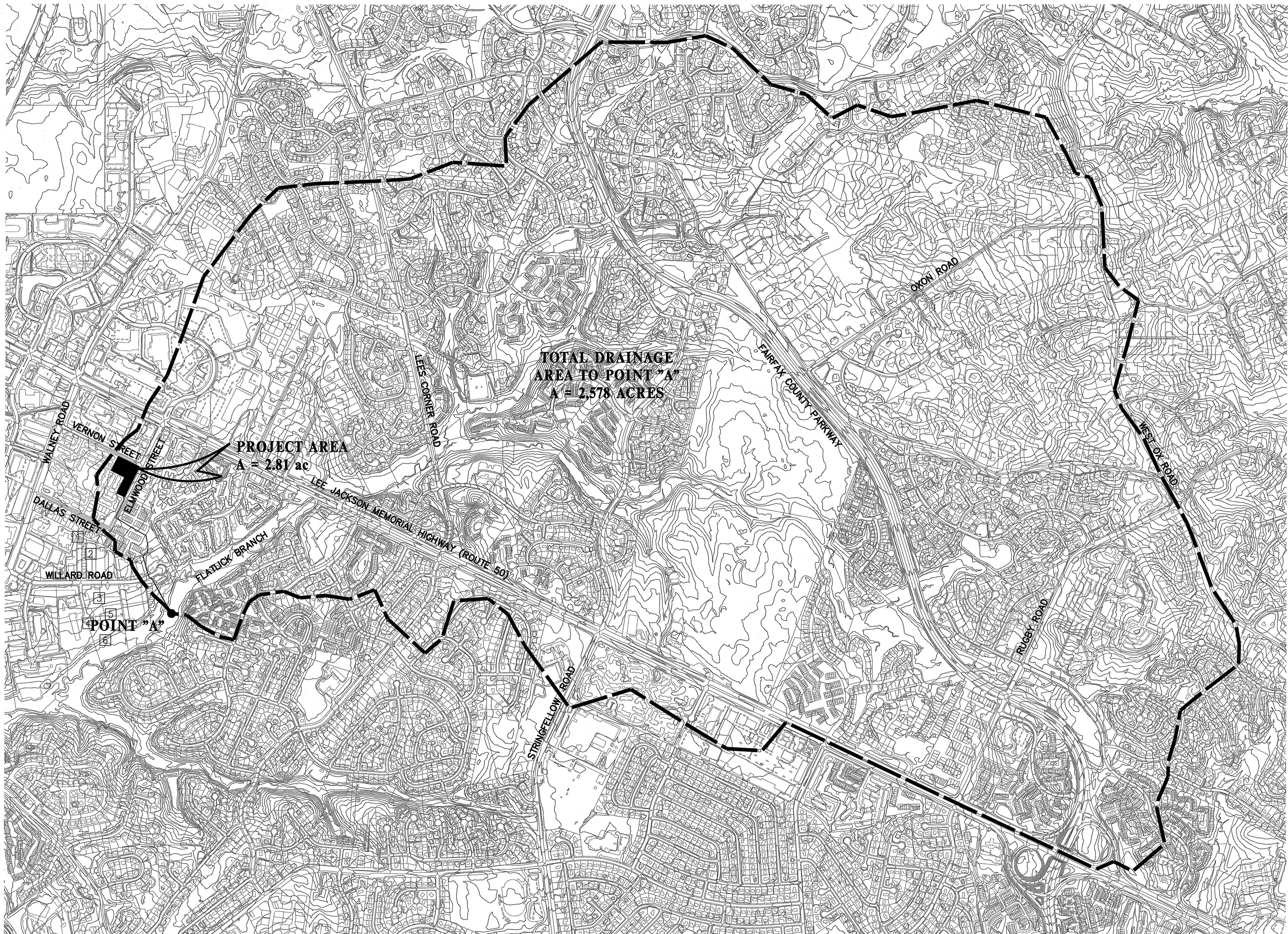
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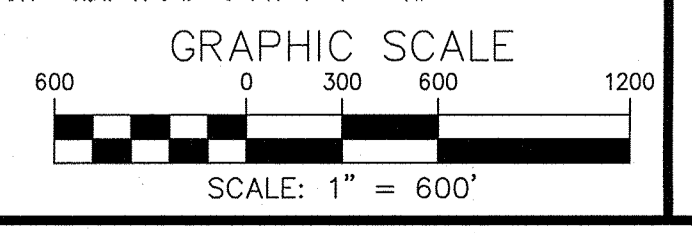
NO. DESCRIPTION REVISIONS

REVIEW APPROVAL DATE

Attached Xrefs: 00-66800/00-RO301/00-RO401/00-RO407/00-RO408/00-RO409/00-RO410/00-RO411/00-RO412/00-RO413/00-RO414/00-RO415/00-RO416/00-RO417/00-RO418/00-RO419/00-RO420/00-RO421/00-RO422/00-RO423/00-RO424/00-RO425/00-RO426/00-RO427/00-RO428/00-RO429/00-RO430/00-RO431/00-RO432/00-RO433/00-RO434/00-RO435/00-RO436/00-RO437/00-RO438/00-RO439/00-RO440/00-RO441/00-RO442/00-RO443/00-RO444/00-RO445/00-RO446/00-RO447/00-RO448/00-RO449/00-RO450/00-RO451/00-RO452/00-RO453/00-RO454/00-RO455/00-RO456/00-RO457/00-RO458/00-RO459/00-RO460/00-RO461/00-RO462/00-RO463/00-RO464/00-RO465/00-RO466/00-RO467/00-RO468/00-RO469/00-RO470/00-RO471/00-RO472/00-RO473/00-RO474/00-RO475/00-RO476/00-RO477/00-RO478/00-RO479/00-RO480/00-RO481/00-RO482/00-RO483/00-RO484/00-RO485/00-RO486/00-RO487/00-RO488/00-RO489/00-RO490/00-RO491/00-RO492/00-RO493/00-RO494/00-RO495/00-RO496/00-RO497/00-RO498/00-RO499/00-RO500/00-RO501/00-RO502/00-RO503/00-RO504/00-RO505/00-RO506/00-RO507/00-RO508/00-RO509/00-RO510/00-RO511/00-RO512/00-RO513/00-RO514/00-RO515/00-RO516/00-RO517/00-RO518/00-RO519/00-RO520/00-RO521/00-RO522/00-RO523/00-RO524/00-RO525/00-RO526/00-RO527/00-RO528/00-RO529/00-RO530/00-RO531/00-RO532/00-RO533/00-RO534/00-RO535/00-RO536/00-RO537/00-RO538/00-RO539/00-RO540/00-RO541/00-RO542/00-RO543/00-RO544/00-RO545/00-RO546/00-RO547/00-RO548/00-RO549/00-RO550/00-RO551/00-RO552/00-RO553/00-RO554/00-RO555/00-RO556/00-RO557/00-RO558/00-RO559/00-RO560/00-RO561/00-RO562/00-RO563/00-RO564/00-RO565/00-RO566/00-RO567/00-RO568/00-RO569/00-RO570/00-RO571/00-RO572/00-RO573/00-RO574/00-RO575/00-RO576/00-RO577/00-RO578/00-RO579/00-RO580/00-RO581/00-RO582/00-RO583/00-RO584/00-RO585/00-RO586/00-RO587/00-RO588/00-RO589/00-RO590/00-RO591/00-RO592/00-RO593/00-RO594/00-RO595/00-RO596/00-RO597/00-RO598/00-RO599/00-RO600/00-RO601/00-RO602/00-RO603/00-RO604/00-RO605/00-RO606/00-RO607/00-RO608/00-RO609/00-RO610/00-RO611/00-RO612/00-RO613/00-RO614/00-RO615/00-RO616/00-RO617/00-RO618/00-RO619/00-RO620/00-RO621/00-RO622/00-RO623/00-RO624/00-RO625/00-RO626/00-RO627/00-RO628/00-RO629/00-RO630/00-RO631/00-RO632/00-RO633/00-RO634/00-RO635/00-RO636/00-RO637/00-RO638/00-RO639/00-RO640/00-RO641/00-RO642/00-RO643/00-RO644/00-RO645/00-RO646/00-RO647/00-RO648/00-RO649/00-RO650/00-RO651/00-RO652/00-RO653/00-RO654/00-RO655/00-RO656/00-RO657/00-RO658/00-RO659/00-RO660/00-RO661/00-RO662/00-RO663/00-RO664/00-RO665/00-RO666/00-RO667/00-RO668/00-RO669/00-RO670/00-RO671/00-RO672/00-RO673/00-RO674/00-RO675/00-RO676/00-RO677/00-RO678/00-RO679/00-RO680/00-RO681/00-RO682/00-RO683/00-RO684/00-RO685/00-RO686/00-RO687/00-RO688/00-RO689/00-RO690/00-RO691/00-RO692/00-RO693/00-RO694/00-RO695/00-RO696/00-RO697/00-RO698/00-RO699/00-RO700/00-RO701/00-RO702/00-RO703/00-RO704/00-RO705/00-RO706/00-RO707/00-RO708/00-RO709/00-RO710/00-RO711/00-RO712/00-RO713/00-RO714/00-RO715/00-RO716/00-RO717/00-RO718/00-RO719/00-RO720/00-RO721/00-RO722/00-RO723/00-RO724/00-RO725/00-RO726/00-RO727/00-RO728/00-RO729/00-RO730/00-RO731/00-RO732/00-RO733/00-RO734/00-RO735/00-RO736/00-RO737/00-RO738/00-RO739/00-RO740/00-RO741/00-RO742/00-RO743/00-RO744/00-RO745/00-RO746/00-RO747/00-RO748/00-RO749/00-RO750/00-RO751/00-RO752/00-RO753/00-RO754/00-RO755/00-RO756/00-RO757/00-RO758/00-RO759/00-RO760/00-RO761/00-RO762/00-RO763/00-RO764/00-RO765/00-RO766/00-RO767/00-RO768/00-RO769/00-RO770/00-RO771/00-RO772/00-RO773/00-RO774/00-RO775/00-RO776/00-RO777/00-RO778/00-RO779/00-RO780/00-RO781/00-RO782/00-RO783/00-RO784/00-RO785/00-RO786/00-RO787/00-RO788/00-RO789/00-RO790/00-RO791/00-RO792/00-RO793/00-RO794/00-RO795/00-RO796/00-RO797/00-RO798/00-RO799/00-RO800/00-RO801/00-RO802/00-RO803/00-RO804/00-RO805/00-RO806/00-RO807/00-RO808/00-RO809/00-RO810/00-RO811/00-RO812/00-RO813/00-RO814/00-RO815/00-RO816/00-RO817/00-RO818/00-RO819/00-RO820/00-RO821/00-RO822/00-RO823/00-RO824/00-RO825/00-RO826/00-RO827/00-RO828/00-RO829/00-RO830/00-RO831/00-RO832/00-RO833/00-RO834/00-RO835/00-RO836/00-RO837/00-RO838/00-RO839/00-RO840/00-RO841/00-RO842/00-RO843/00-RO844/00-RO845/00-RO846/00-RO847/00-RO848/00-RO849/00-RO850/00-RO851/00-RO852/00-RO853/00-RO854/00-RO855/00-RO856/00-RO857/00-RO858/00-RO859/00-RO860/00-RO861/00-RO862/00-RO863/00-RO864/00-RO865/00-RO866/00-RO867/00-RO868/00-RO869/00-RO870/00-RO871/00-RO872/00-RO873/00-RO874/00-RO875/00-RO876/00-RO877/00-RO878/00-RO879/00-RO880/00-RO881/00-RO882/00-RO883/00-RO884/00-RO885/00-RO886/00-RO887/00-RO888/00-RO889/00-RO890/00-RO891/00-RO892/00-RO893/00-RO894/00-RO895/00-RO896/00-RO897/00-RO898/00-RO899/00-RO900/00-RO901/00-RO902/00-RO903/00-RO904/00-RO905/00-RO906/00-RO907/00-RO908/00-RO909/00-RO910/00-RO911/00-RO912/00-RO913/00-RO914/00-RO915/00-RO916/00-RO917/00-RO918/00-RO919/00-RO920/00-RO921/00-RO922/00-RO923/00-RO924/00-RO925/00-RO926/00-RO927/00-RO928/00-RO929/00-RO930/00-RO931/00-RO932/00-RO933/00-RO934/00-RO935/00-RO936/00-RO937/00-RO938/00-RO939/00-RO940/00-RO941/00-RO942/00-RO943/00-RO944/00-RO945/00-RO946/00-RO947/00-RO948/00-RO949/00-RO950/00-RO951/00-RO952/00-RO953/00-RO954/00-RO955/00-RO956/00-RO957/00-RO958/00-RO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PICTURE ID NUMBER:
 SEE PICTURES ON SHEET 10



NO.	DATE	REVISION	PRIOR TO APPROVAL
CPJ Charles P. Johnson & Associates, Inc. Associates Civil and Environmental Engineers • Planners • Landscape • Architects • Surveyors 5699 Pender Dr., Ste. 210 Fairfax, VA 22030 703-385-7555 Fax: 703-275-6595 www.cpja.com • Silver Spring, MD • Gaithersburg, MD • Annapolis, MD • College Park, MD • Frederick, MD • Fairfax, VA			

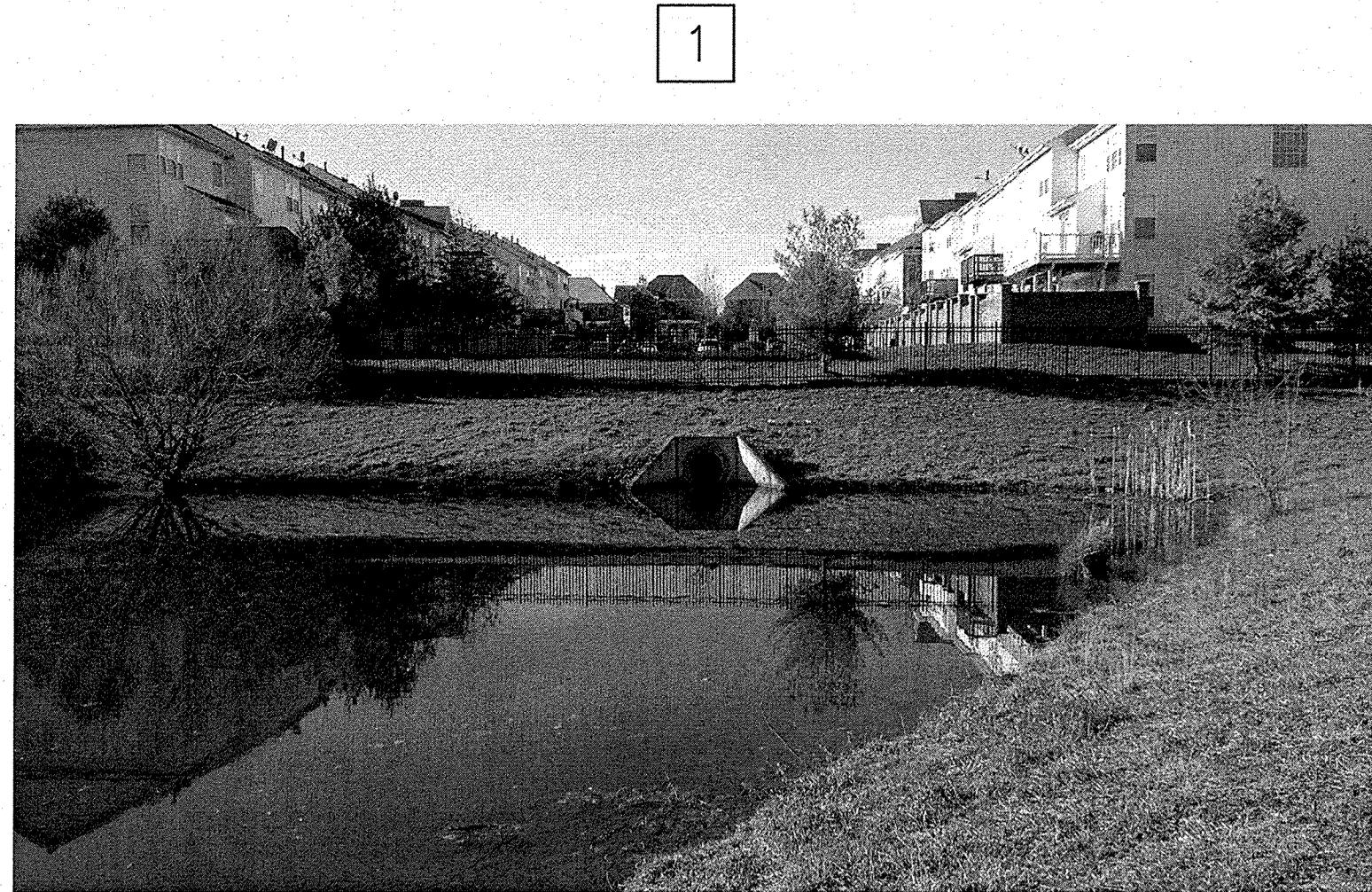
OVERALL DRAINAGE MAP

ROCKLAND VILLAGE GREEN

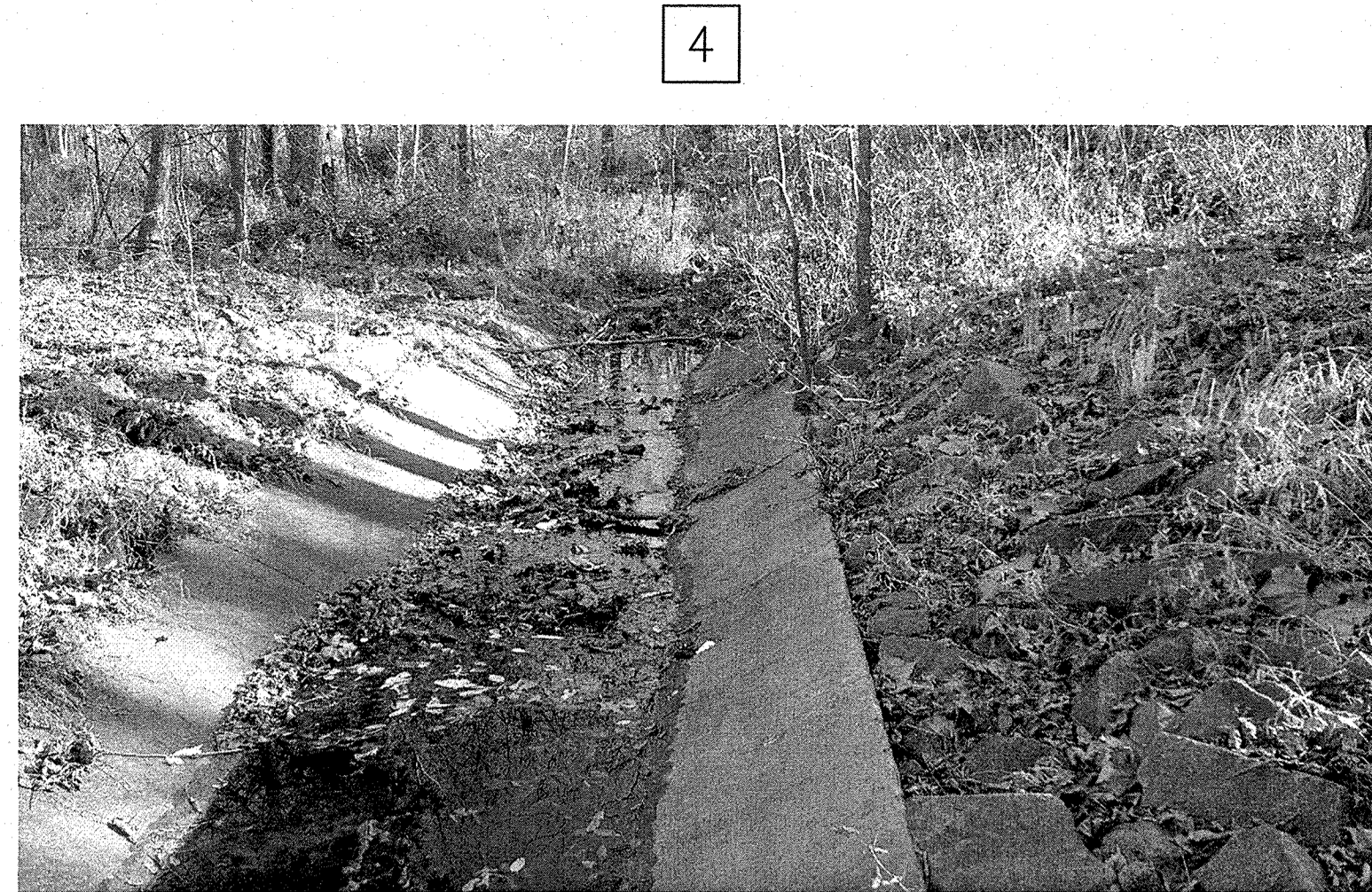
SULLY DISTRICT
 FAIRFAX COUNTY, VIRGINIA



DESIGN	DRAFT	NO.	DATE	SCALE	TYPE
ADC	APPROVED	JAN. 2016	SCALE	HORIZI	VERT.
SHEET 9 OF 13		PRJ NO: 2015-2551		TYPE: GDP	
REVISIONS		DESCRIPTION		DATE	



1



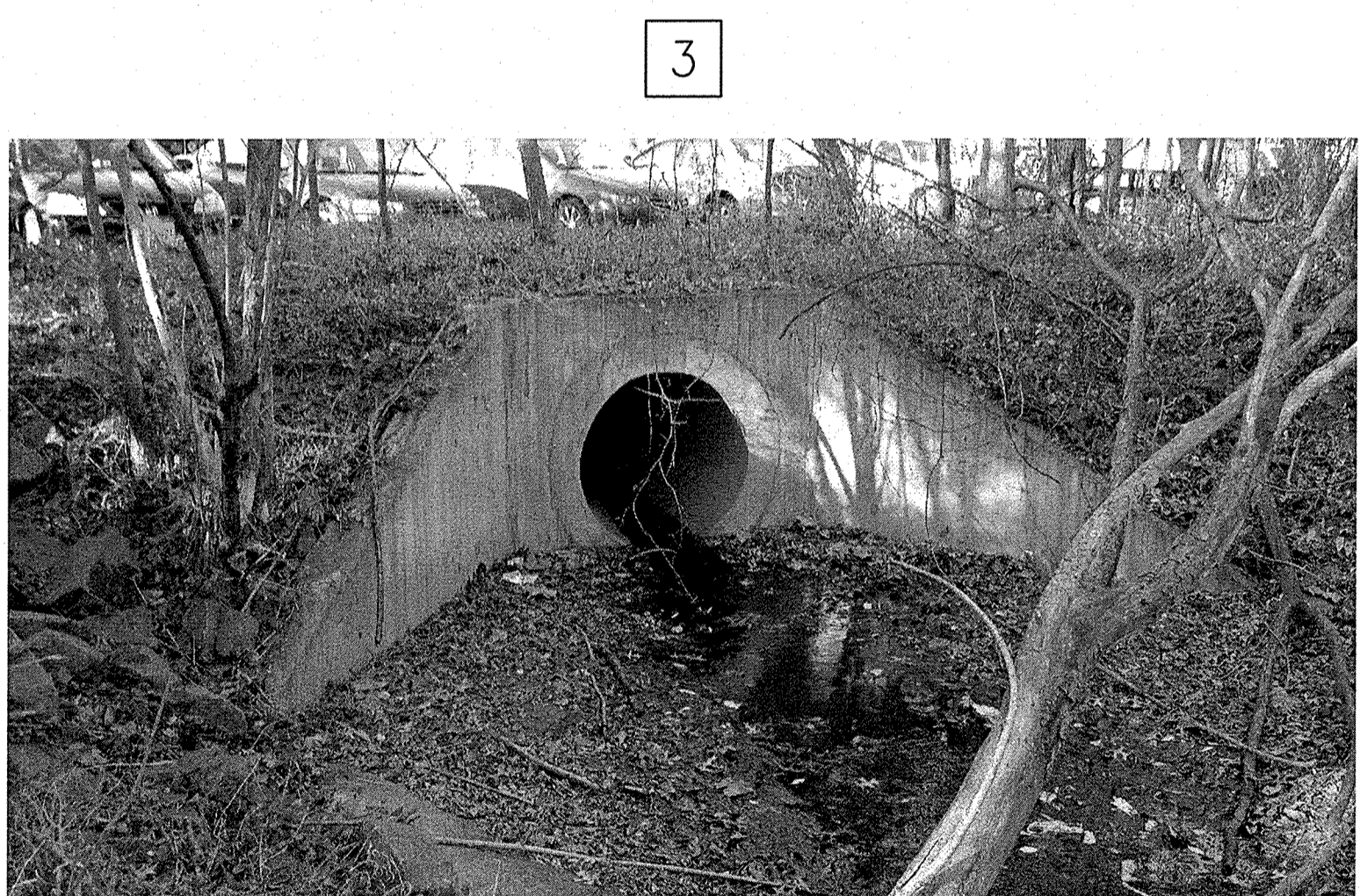
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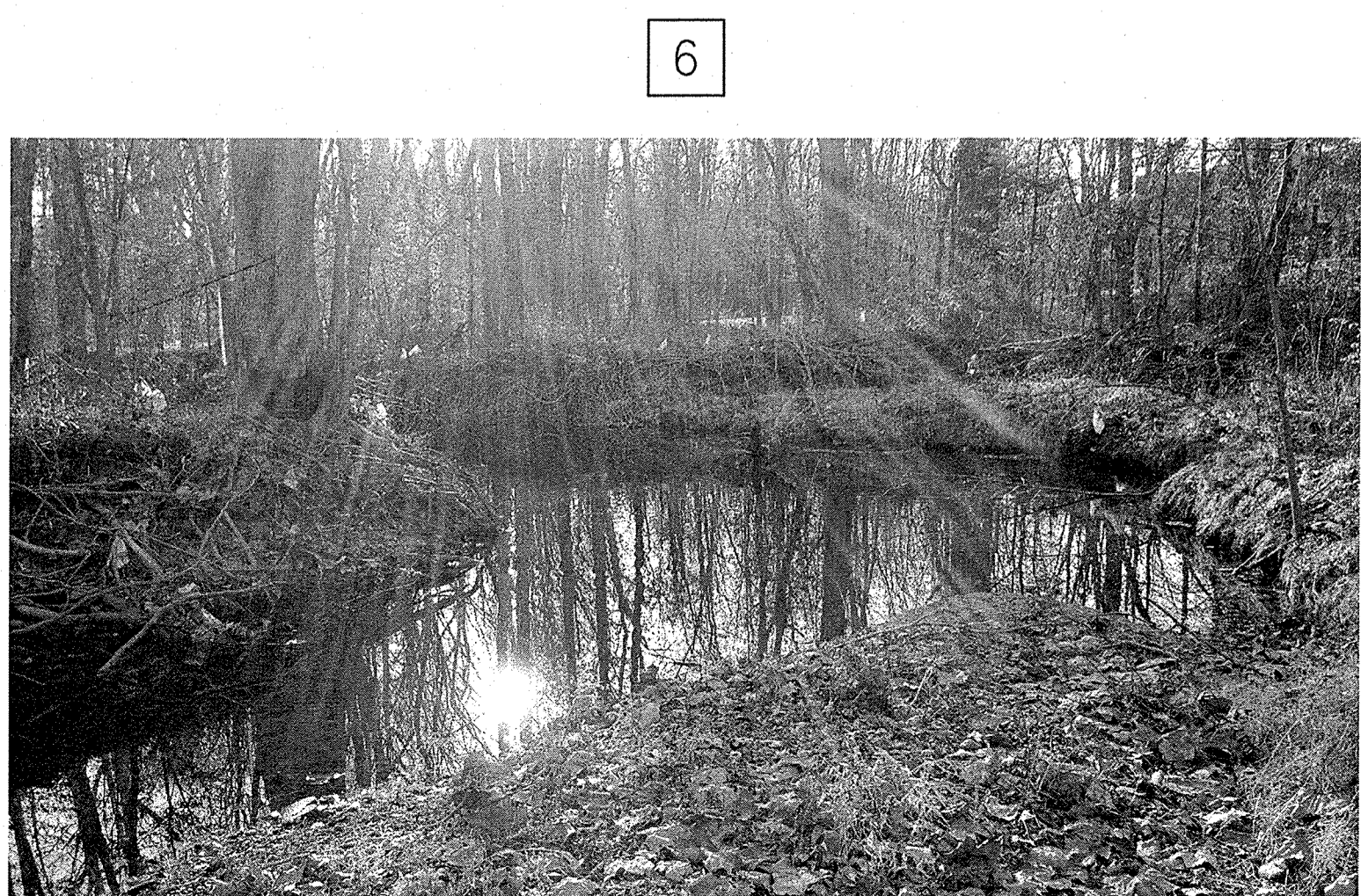
2



5



3



6

SEE SHEET 9 FOR PICTURES LOCATIONS

NO.	DATE	REVISION	PRIOR TO APPROVAL

CPJ Charles P. Johnson & Associates, Inc.
 Civil and Environmental Engineers • Planners • Landscape • Architects • Surveyors
 5959 Pender Dr., Ste. 210 Fairfax, VA 22030 703-585-7555 Fax: 703-275-8985
 www.cpja.com • Silver Spring, MD • Gaithersburg, MD • Annapolis, MD • College Park, MD • Frederick, MD • Fairfax, VA

PHOTOS OF SITE OUTFALL
ROCKLAND VILLAGE GREEN
 SULLY DISTRICT
 FAIRFAX COUNTY, VIRGINIA



NO.	DESCRIPTION	REVISIONS	BY	DATE

DESIGN	BY: ADC	DATE: JAN. 2016
APPROVED	BY: ADC	SCALE: ---
SHEET	10	OF 13
PRJ NO:	2015-2551	
TYPE:	GDP	

Virginia Runoff Reduction Method ReDevelopment Worksheet - v2.8 - June 2014

To be used w/ 2011 BMP Standards and Specifications

Site Data

Project Name: Carrhomes at Rockland Village
Date: 12/14/15

data input cells
calculation cells
constant values

Post-Redevelopment Project & Land Cover Information Total Disturbed Acreage 2.81

Constants

Table with columns for Annual Rainfall (43), Target Rainfall Event (1.00), Phosphorus EMC (0.26), Target Phosphorus Load (0.41), Pj (0.90), Nitrogen EMC (1.86)

Pre-Redevelopment Land Cover (acres)

Table with columns for A soils, B Soils, C Soils, D Soils, Totals for Forest/Open Space, Managed Turf, Impervious Cover

Post-Redevelopment Land Cover (acres)

Table with columns for A soils, B Soils, C Soils, D Soils, Totals for Forest/Open Space, Managed Turf, Impervious Cover

Area Check

Okay Okay Okay Okay

Rv Coefficients

Table with columns for A soils, B Soils, C Soils, D Soils for Forest/Open Space, Managed Turf, Impervious Cover

Land Cover Summary

Summary table comparing Listed and Adjusted land cover for Forest/Open Space, Managed Turf, Impervious Cover

Site Rv

0.42 0.53

Pre-Development Treatment Volume (acre-ft)

0.0276 0.0741

Pre-Development Treatment Volume (cubic feet)

4,253 3,227

Pre-Development Load (TP) (lb/yr)

2.67 2.03

Adjusted Land Cover Summary reflects the pre redevelopment land cover minus the previous land cover (forest/open space or managed turf) acreage proposed for new impervious cover.

Maximum % Reduction Required Below Pre-Redevelopment Load 20%

TP Load Reduction Required for Redeveloped Area (lb/yr) 0.41 TP Load Reduction Required for New Impervious Area (lb/yr) 1.99

Total Load Reduction Required (lb/yr) 2.39

Pre-Development Load (TN) (lb/yr) 19.11

Post-Development Load (TN) (lb/yr) 32.02

Drainage Area A

Drainage Area A Land Cover (acres)

Table with columns for A soils, B Soils, C Soils, D Soils, Totals, Land Cover Rv for Forest/Open Space, Managed Turf, Impervious Cover

Table with columns for Credit, Unit, Description of Credit, Credit Area (acres), Volume from Upstream RR Practice (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

Site Results

Table with columns for D.A. A, D.A. B, D.A. C, D.A. D, D.A. E, AREA CHECK for IMPERVIOUS COVER, IMPERVIOUS COVER TREATED, TURF AREA, TURF AREA TREATED, AREA CHECK

Phosphorous

Table with columns for TOTAL PHOSPHOROUS LOAD REDUCTION REQUIRED (LB/YEAR) 2.39, RUNOFF REDUCTION (cf) 0, PHOSPHOROUS LOAD REDUCTION ACHIEVED (LB/YR) 2.69, ADJUSTED POST-DEVELOPMENT PHOSPHOROUS LOAD (TP) (lb/yr) 1.78, REMAINING PHOSPHOROUS LOAD REDUCTION (LB/YR) NEEDED CONGRATULATIONS!! YOU EXCEEDED THE TARGET REDUCTION BY 0.3 LB/YEAR!!

Virginia Runoff Reduction Method ReDevelopment Worksheet - v2.8 - June 2014

Site Data Summary

Total Rainfall = 43 inches

Site Land Cover Summary

Table with columns for A Soils, B Soils, C Soils, D Soils, Total, % of Total for Forest (acres), Turf (acres), Impervious (acres)

Site Rv

Table with columns for Post Development Treatment Volume (ft³) 7124, Post Development TP Load (lb/yr) 4.48, Post Development TN Load (lb/yr) 32.02, Total TP Load Reduction Required (lb/yr) 2.39

Table with columns for Total Runoff Volume Reduction (ft³) 0, Total TP Load Reduction Achieved (lb/yr) 3, Total TN Load Reduction Achieved (lb/yr) 0.00, Adjusted Post Development TP Load (lb/yr) 1.78, Remaining Phosphorous Load Reduction (Lb/yr) Required 0.00

Drainage Area Summary

Table with columns for D.A. A, D.A. B, D.A. C, D.A. D, D.A. E, Total for Forest (acres), Turf (acres), Impervious (acres)

Drainage Area Compliance Summary

Table with columns for D.A. A, D.A. B, D.A. C, D.A. D, D.A. E, Total for TP Load Red. (lb/yr), TN Load Red. (lb/yr)

Channel and Flood Protection

Table with columns for Weighted CN, 1-year storm Adjusted CN, 2-year storm Adjusted CN, 10-year storm Adjusted CN for Target Rainfall Event (in), D.A. A CN

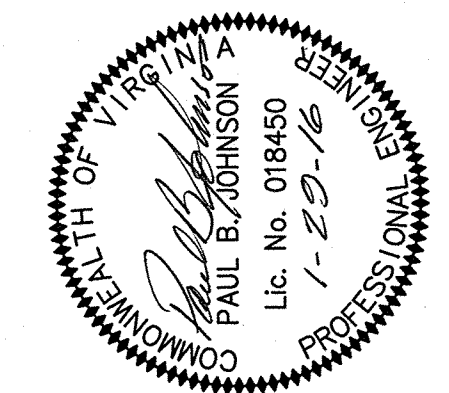
Summary table for IMPERVIOUS COVER TREATED (1.62), TURF AREA TREATED (0.60), PHOSPHORUS REMOVAL BY PRACTICES, NITROGEN REMOVAL BY PRACTICES

VIRGINIA RUNOFF REDUCTION METHOD SPREADSHEET

ROCKLAND VILLAGE GREEN

SULLY DISTRICT FAIRFAX COUNTY, VIRGINIA

CPJ Charles P. Johnson & Associates, Inc. Logo and contact information including address, phone, and website.

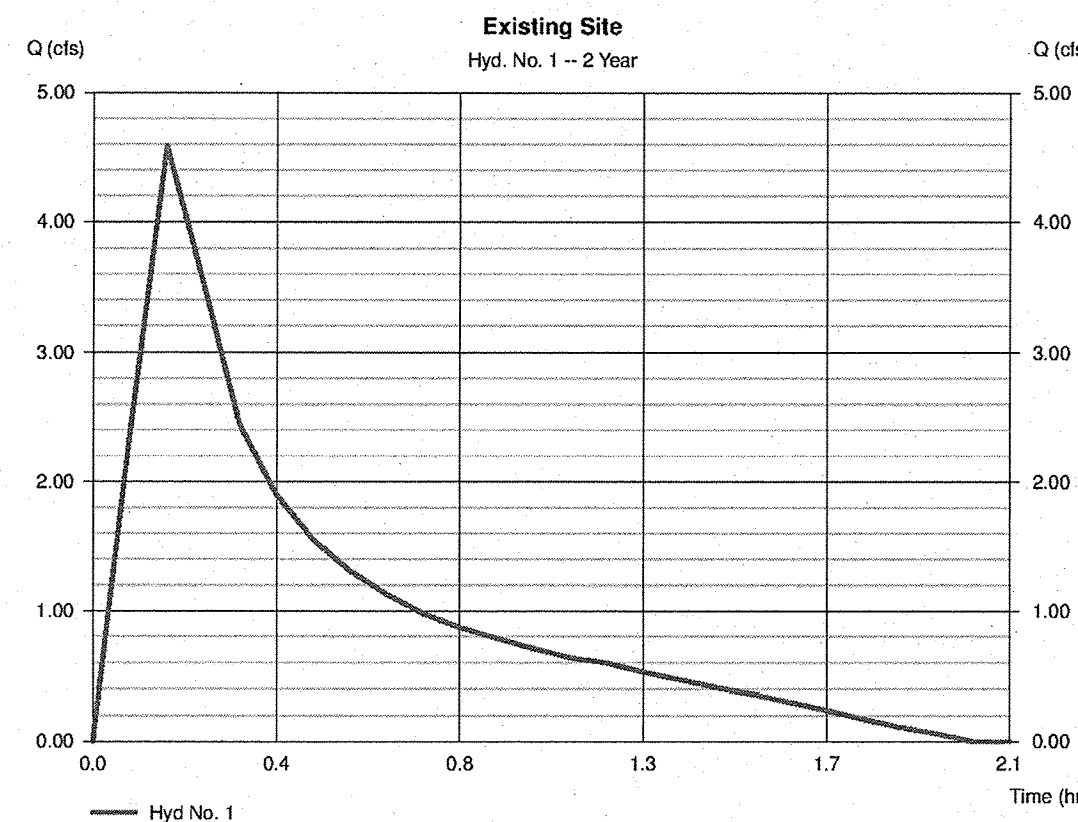


Revisions table with columns for NO., DESCRIPTION, DATE

Approval table with columns for DESIGN, DRAFT, APPROVED, DATE, SCALE, HORIZ., VERT.

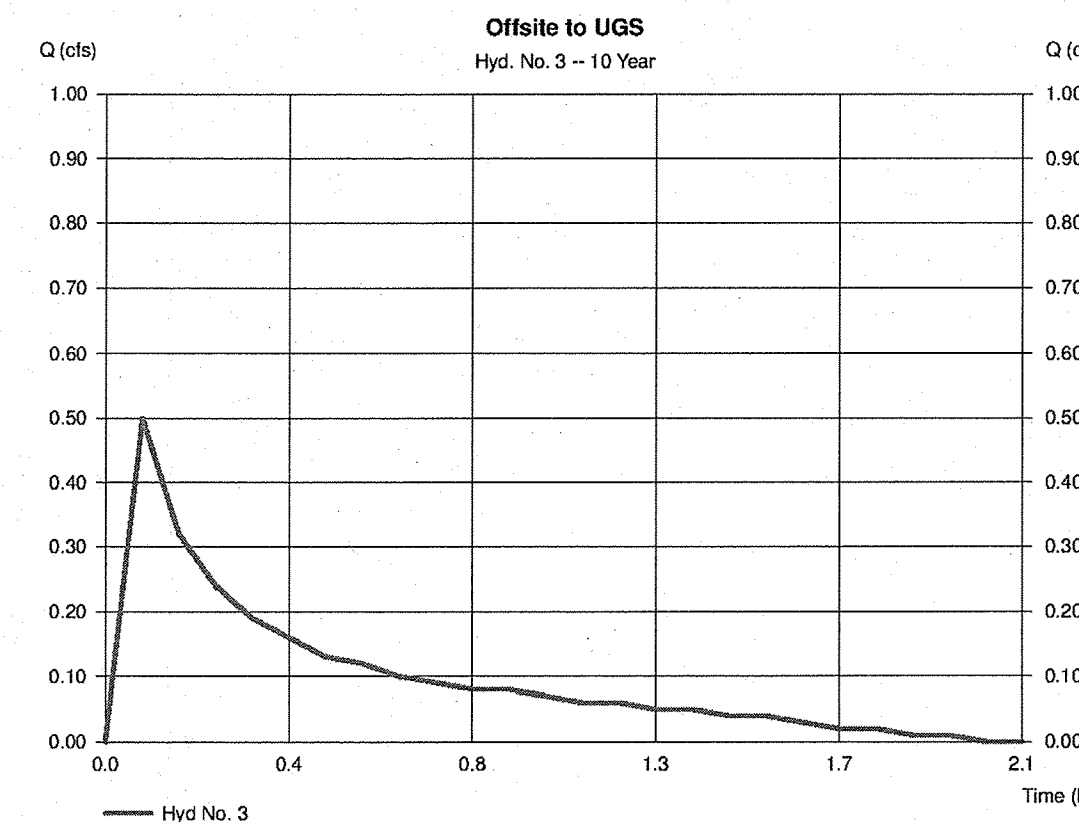
UNDEVELOPED: 2-YEAR

Hydroflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066
 Tuesday, Jan 26, 2016
Hyd. No. 1
 Existing Site
 Hydrograph type = Manual Peak discharge = 4.590 cfs
 Storm frequency = 2 yrs Time to peak = 0.17 hrs
 Time interval = 5 min Hyd. volume = 7,821 cuft



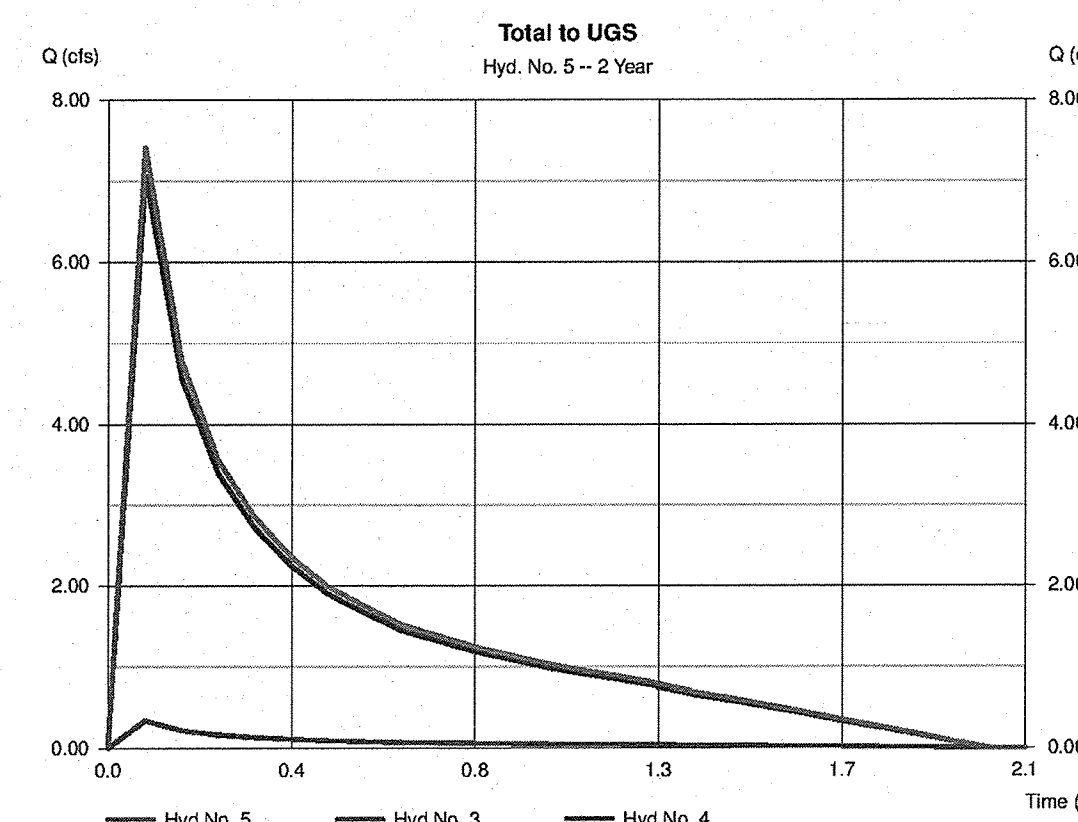
OFFSITE TO UGS: 10-YEAR

Hydroflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066
 Tuesday, Jan 26, 2016
Hyd. No. 3
 Offsite to UGS
 Hydrograph type = Manual Peak discharge = 0.500 cfs
 Storm frequency = 10 yrs Time to peak = 0.08 hrs
 Time interval = 5 min Hyd. volume = 741 cuft



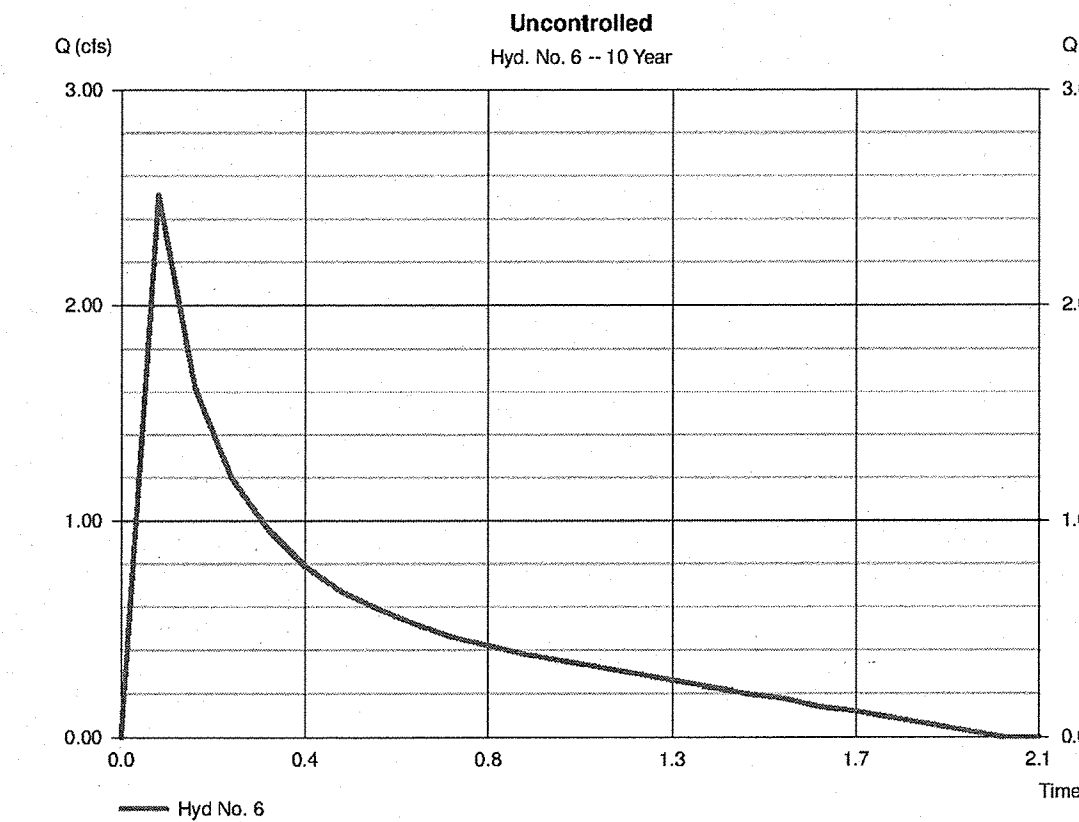
TOTAL TO UGS: 2-YEAR

Hydroflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066
 Tuesday, Jan 26, 2016
Hyd. No. 5
 Total to UGS
 Hydrograph type = Combine Peak discharge = 7.411 cfs
 Storm frequency = 2 yrs Time to peak = 0.08 hrs
 Time interval = 5 min Hyd. volume = 10,999 cuft
 Inflow hyd. = 3, 4 Contrib. drain. area = 0.000 ac



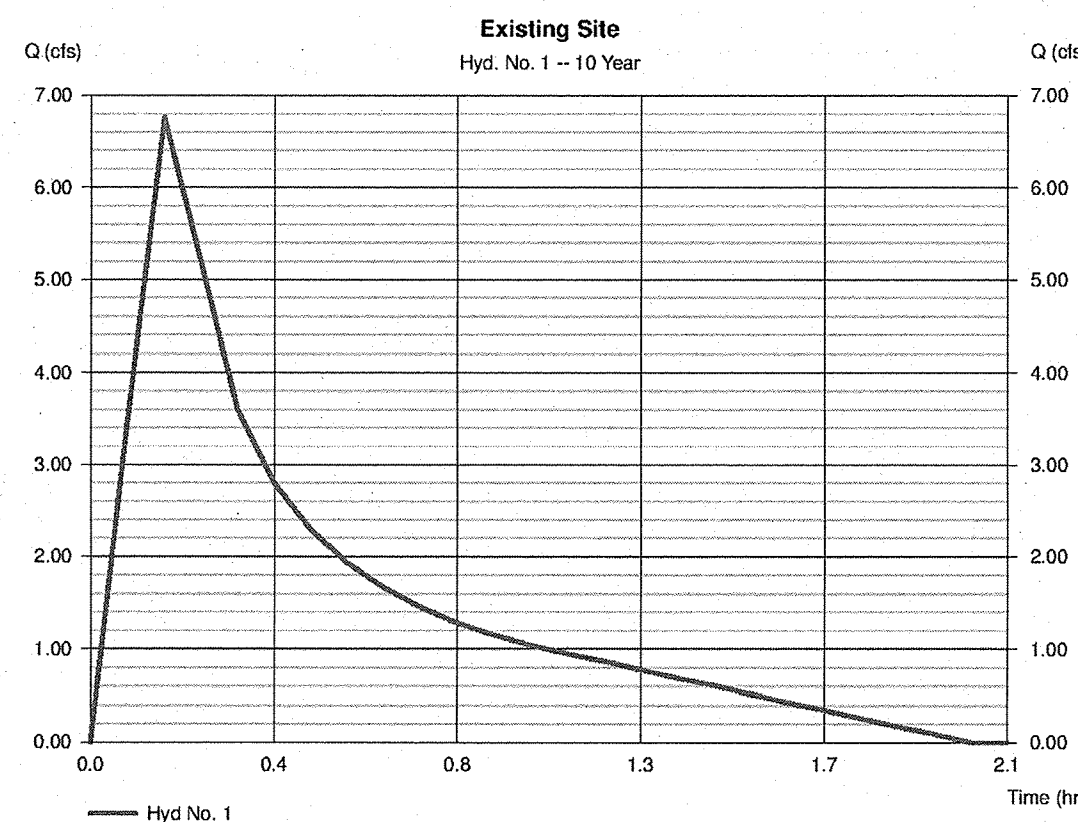
UNCONTROLLED: 10-YEAR

Hydroflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066
 Tuesday, Jan 26, 2016
Hyd. No. 6
 Uncontrolled
 Hydrograph type = Manual Peak discharge = 2.510 cfs
 Storm frequency = 10 yrs Time to peak = 0.08 hrs
 Time interval = 5 min Hyd. volume = 3,717 cuft



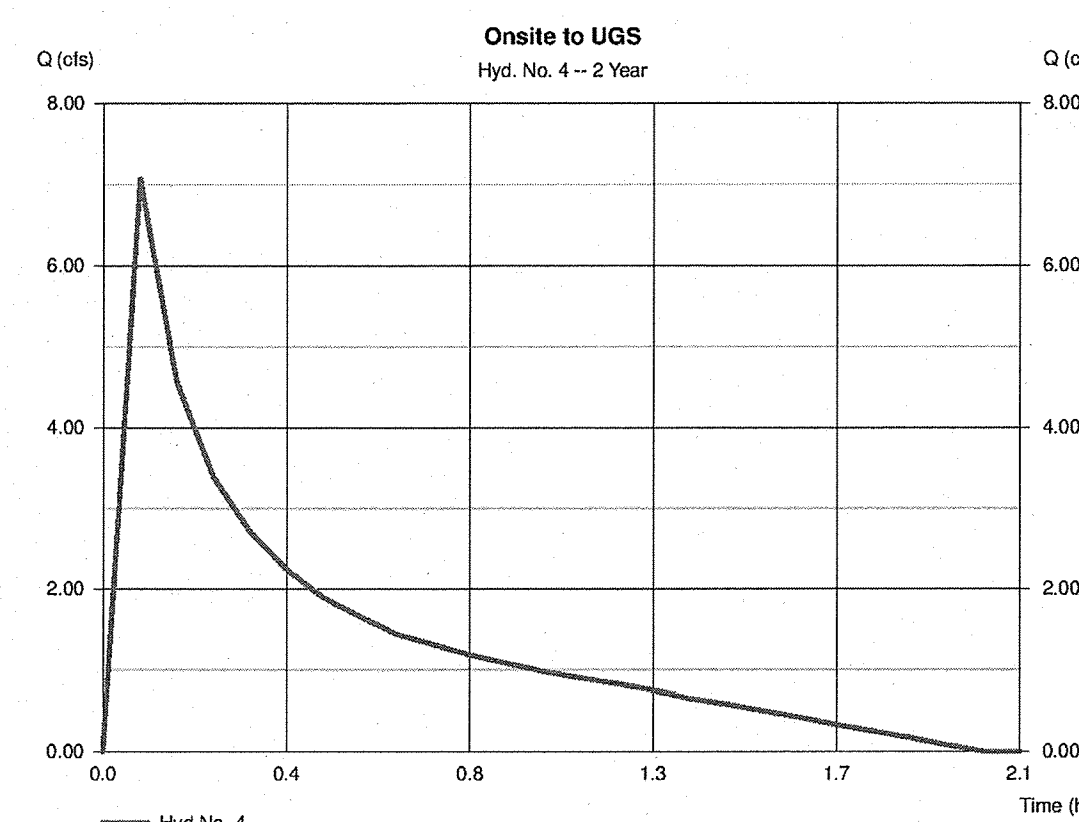
UNDEVELOPED: 10-YEAR

Hydroflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066
 Tuesday, Jan 26, 2016
Hyd. No. 1
 Existing Site
 Hydrograph type = Manual Peak discharge = 6.760 cfs
 Storm frequency = 10 yrs Time to peak = 0.17 hrs
 Time interval = 5 min Hyd. volume = 11,514 cuft



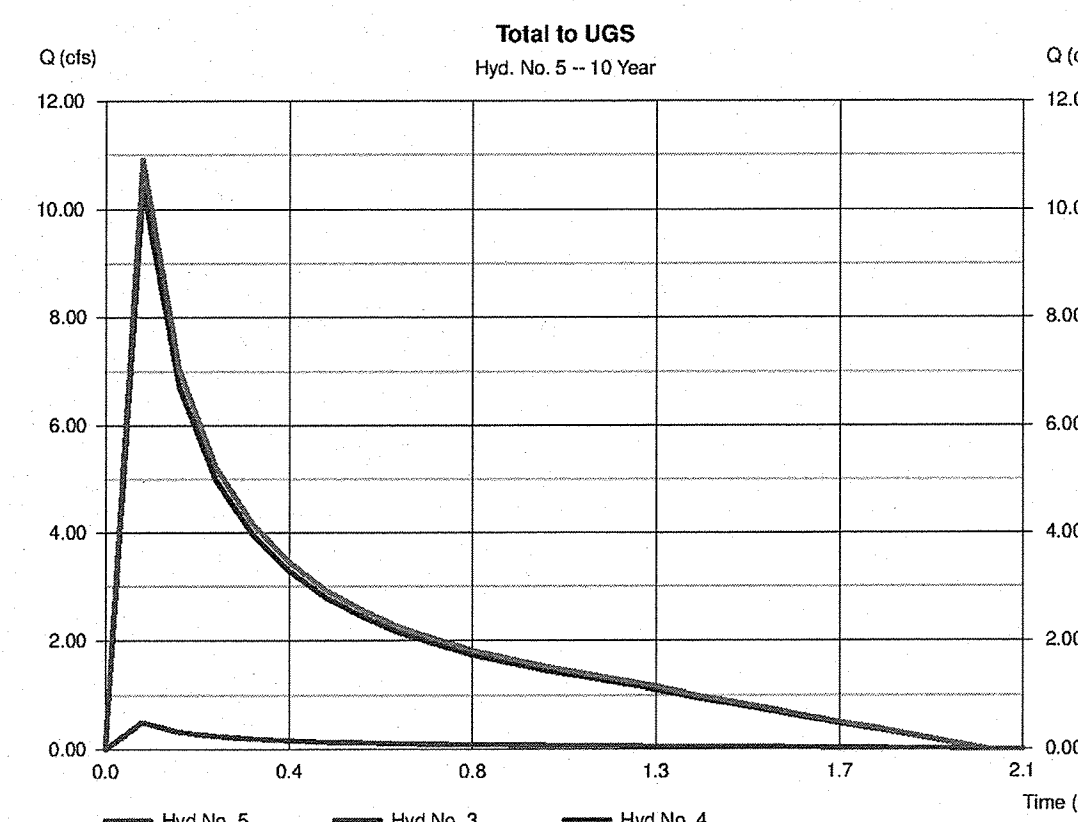
ONSITE TO UGS: 2-YEAR

Hydroflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066
 Tuesday, Jan 26, 2016
Hyd. No. 4
 Onsite to UGS
 Hydrograph type = Manual Peak discharge = 7.070 cfs
 Storm frequency = 2 yrs Time to peak = 0.08 hrs
 Time interval = 5 min Hyd. volume = 10,494 cuft



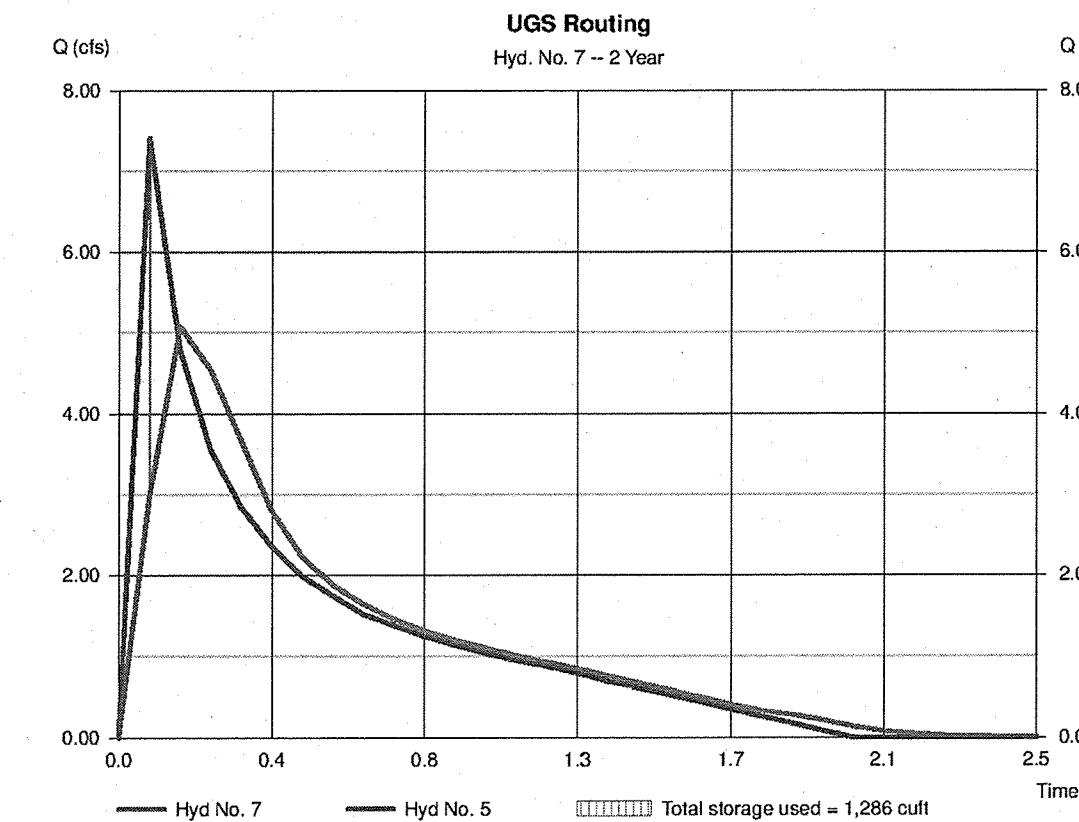
TOTAL TO UGS: 10-YEAR

Hydroflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066
 Tuesday, Jan 26, 2016
Hyd. No. 5
 Total to UGS
 Hydrograph type = Combine Peak discharge = 10.91 cfs
 Storm frequency = 10 yrs Time to peak = 0.08 hrs
 Time interval = 5 min Hyd. volume = 16,167 cuft
 Inflow hyd. = 3, 4 Contrib. drain. area = 0.000 ac



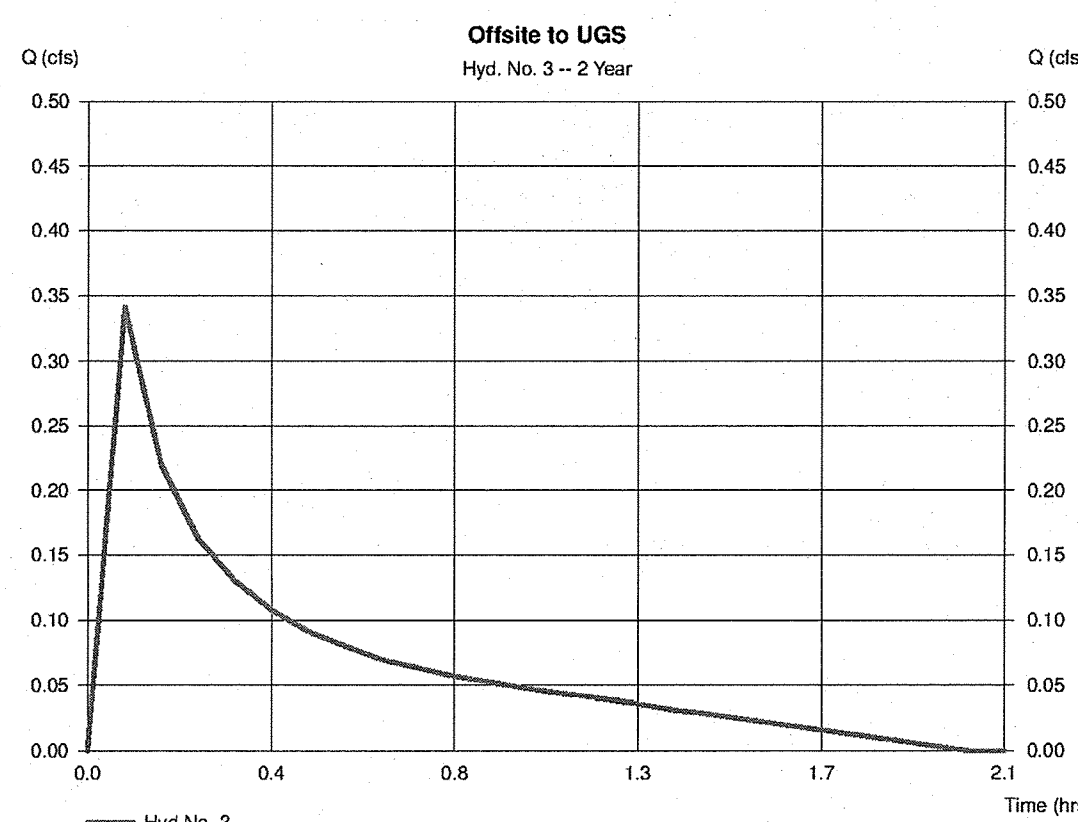
ROUTING: 2-YEAR

Hydroflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066
 Tuesday, Jan 26, 2016
Hyd. No. 7
 UGS Routing
 Hydrograph type = Reservoir Peak discharge = 5.074 cfs
 Storm frequency = 2 yrs Time to peak = 0.17 hrs
 Time interval = 5 min Hyd. volume = 10,999 cuft
 Inflow hyd. No. = 5 - Total to UGS Max. Elevation = 315.62 ft
 Reservoir name = UGS Max. Storage = 1,286 cuft
 Storage Indication method used.



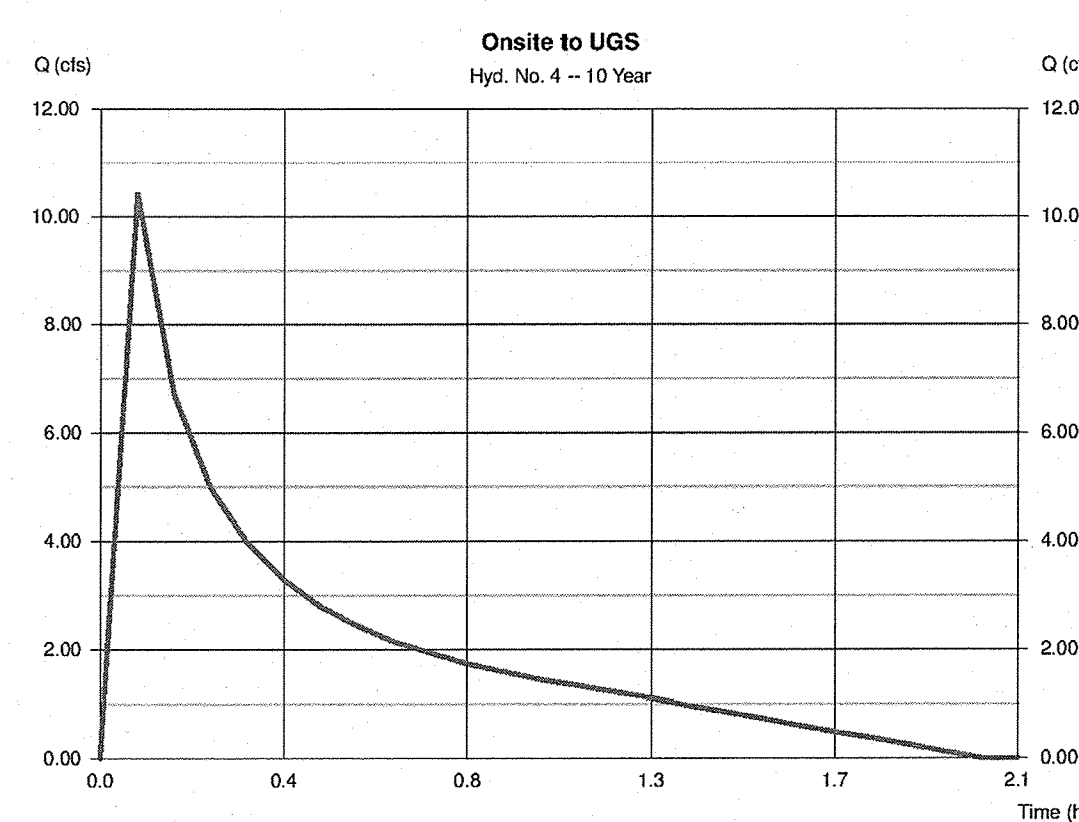
OFFSITE TO UGS: 2-YEAR

Hydroflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066
 Tuesday, Jan 26, 2016
Hyd. No. 3
 Offsite to UGS
 Hydrograph type = Manual Peak discharge = 0.341 cfs
 Storm frequency = 2 yrs Time to peak = 0.08 hrs
 Time interval = 5 min Hyd. volume = 505 cuft



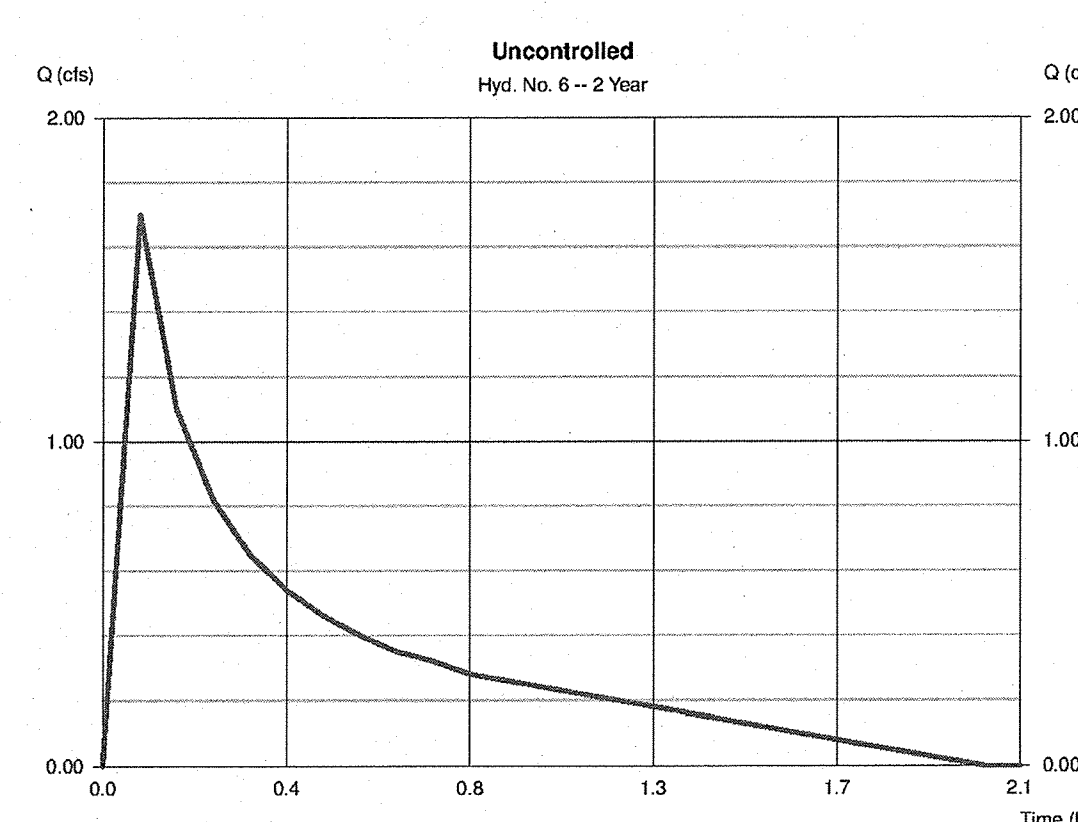
ONSITE TO UGS: 10-YEAR

Hydroflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066
 Tuesday, Jan 26, 2016
Hyd. No. 4
 Onsite to UGS
 Hydrograph type = Manual Peak discharge = 10.41 cfs
 Storm frequency = 10 yrs Time to peak = 0.08 hrs
 Time interval = 5 min Hyd. volume = 15,426 cuft



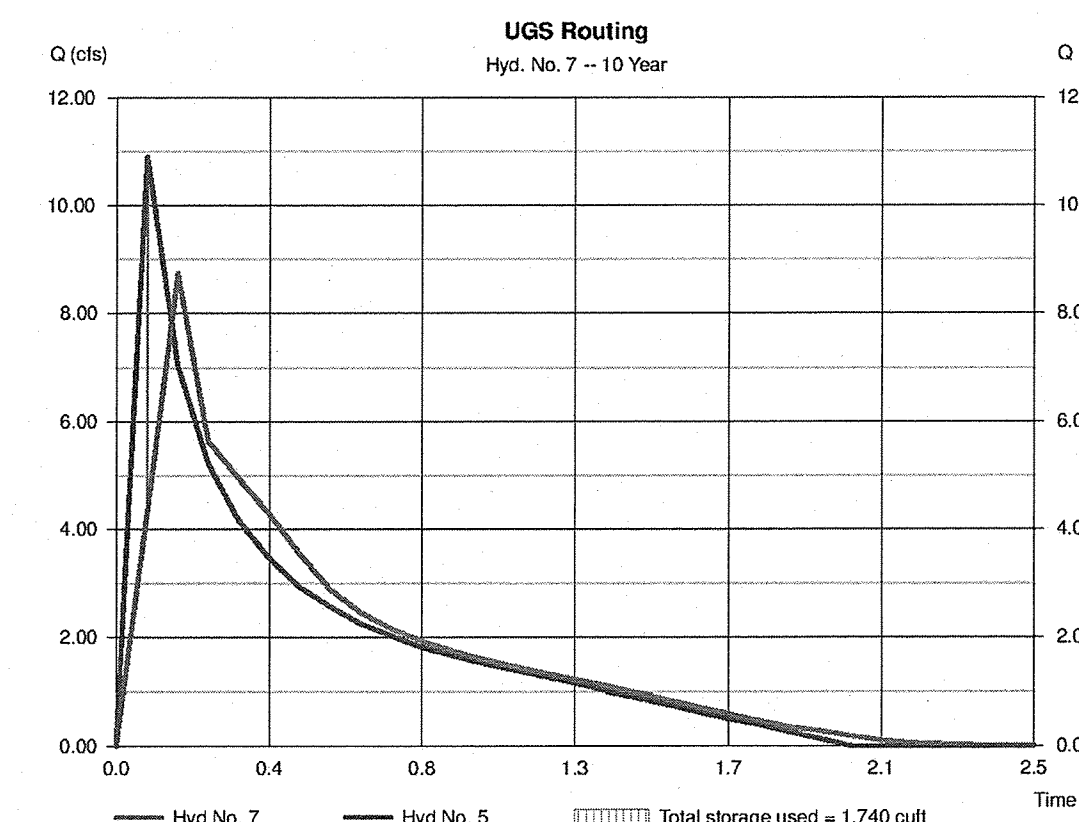
UNCONTROLLED: 2-YEAR

Hydroflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066
 Tuesday, Jan 26, 2016
Hyd. No. 6
 Uncontrolled
 Hydrograph type = Manual Peak discharge = 1.700 cfs
 Storm frequency = 2 yrs Time to peak = 0.08 hrs
 Time interval = 5 min Hyd. volume = 2,532 cuft



ROUTING: 10-YEAR

Hydroflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066
 Tuesday, Jan 26, 2016
Hyd. No. 7
 UGS Routing
 Hydrograph type = Reservoir Peak discharge = 8.731 cfs
 Storm frequency = 10 yrs Time to peak = 0.17 hrs
 Time interval = 5 min Hyd. volume = 16,167 cuft
 Inflow hyd. No. = 5 - Total to UGS Max. Elevation = 316.36 ft
 Reservoir name = UGS Max. Storage = 1,740 cuft
 Storage Indication method used.



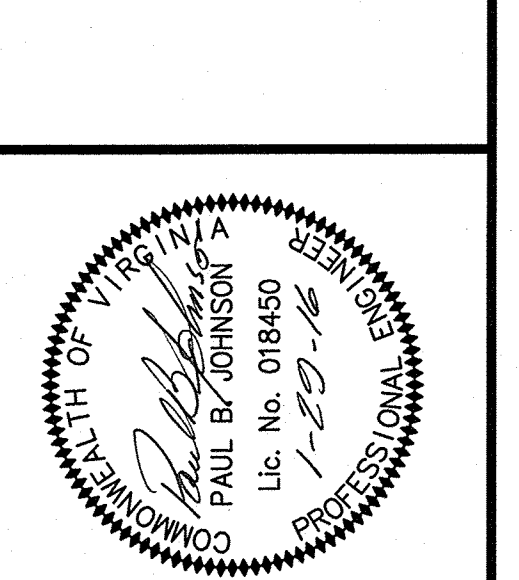
NO. DATE REVISION PRIOR TO APPROVAL

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STORMWATER MANAGEMENT ROUTING

ROCKLAND VILLAGE GREEN

SULLY DISTRICT
 FAIRFAX COUNTY, VIRGINIA



NO.	DESCRIPTION	REVISIONS	DATE	APPROVED

PERSON APPROVED: [Signature] DATE: JAN 2016 SCALE: ---

SHEET 12 OF 13

PRJ NO: 2015-2551

TYPE: GDP

