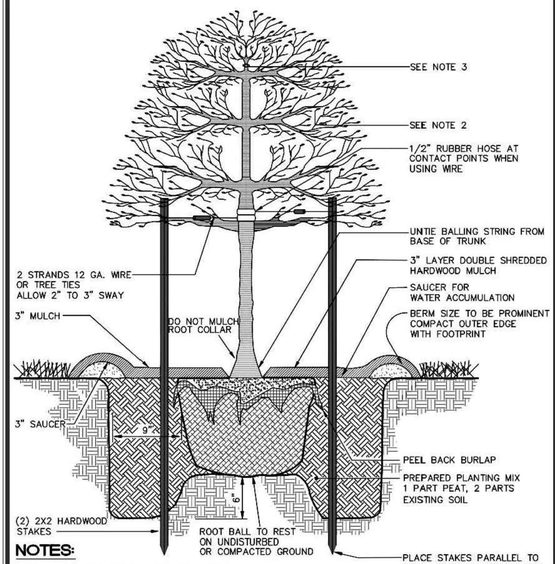

NOTES:

1. See Detail 8.08 for Planting Notes.
2. Prune only to remove dead or damaged branches. Raising branches is to be performed when approved to provide clearances for pedestrians.
3. Never prune the leader.
4. Remove non-decomposing material from root ball.
5. Remove stakes and wire at end of warranty period or at end of one growing season as approved.

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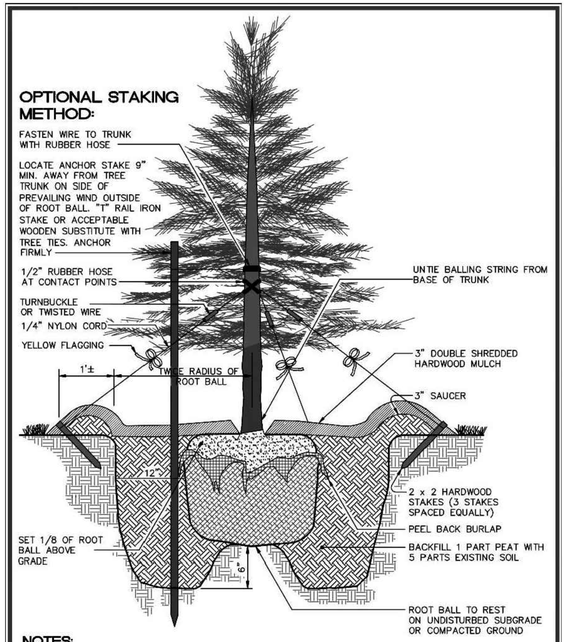
SINGLE-STEM TREE PLANTING UPRIGHT STAKING DETAIL

SCALE:	DETAIL #
Not To Scale	8.01
REVISION DATE:	SHEET #:
December 2016	1 of 1



NOTES:

1. See Detail 8.08 for Planting Notes.

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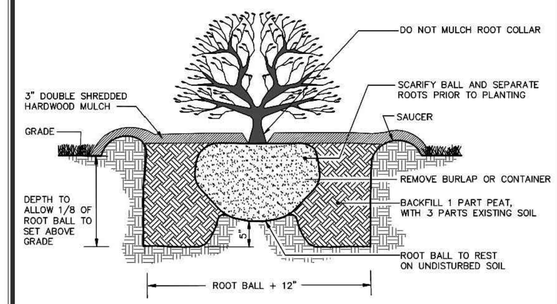
EVERGREEN TREE PLANTING and STAKING DETAIL

SCALE:	DETAIL #
Not To Scale	8.04
REVISION DATE:	SHEET #:
December 2016	1 of 1



NOTES:

1. See Detail 8.08 for Planting Notes.
2. For shrub mass planting rototill the entire bed to 6" minimum depth. Individual shrub pits shall be excavated thereafter.

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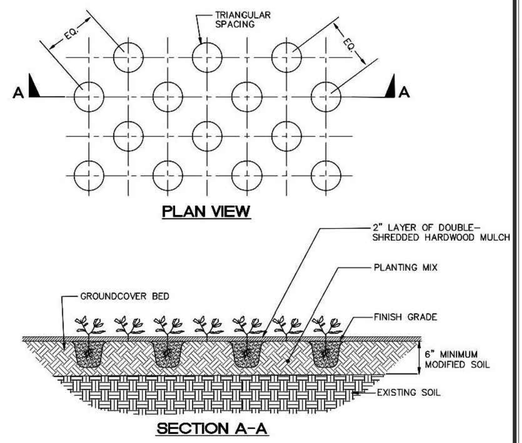
SHRUB DETAIL CONTAINER AND B&B

SCALE:	DETAIL #
Not To Scale	8.05
REVISION DATE:	SHEET #:
December 2016	1 of 1



NOTES:

1. See Detail 8.08 for Planting Notes.
2. Layout plants in prepared bed as shown.
3. Spacing as specified per plant schedule.
4. Planting mix shall consist of 2" peat moss or 1" depth of compost (not to exceed 4 cubic yards of compost per 1000 sq. ft.) and tilled into the previously loosened planting bed.

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GROUNDCOVER PLANTING DETAIL

SCALE:	DETAIL #
Not To Scale	8.06
REVISION DATE:	SHEET #:
December 2016	1 of 1

THIS SHEET IS FOR LANDSCAPE PURPOSES ONLY

I. General

1. Landscape Specifications: Landscape specifications shall be as outlined below. Any item or procedure not mentioned below shall be as specified in the Landscape specification guidelines published by the Landscape Contractors Association (latest edition).
2. Plant Materials: The Landscape Contractor shall furnish and install and/or dig, ball, burlap, and transplant plant materials called for on the drawings and/or listed in the plant schedule. The City reserves the right to inspect plant material at the nursery source, before off-loading at the project site, when in storage or prior to installation.
3. Plant Names: Plant names used in the plant schedule shall be identified in accordance with Hortus Third, by L.H. Bailey, 1976.
4. Plant Standards: Plant materials shall be equal to or better than the requirements of the "American Standard for Nursery Stock" (ANSI Z60.1 latest edition), as published by the American Association of Nurseryman (hereinafter referred to as AAN standards). Plants shall be typical of their species and variety, shall have a normal habit of growth, and shall be first quality, sound, vigorous, well branched, and with healthy, well-furnished root systems. They shall be free of disease, insect pests, and mechanical injuries.
   (A) Plants shall be nursery grown and shall have been grown under the same climatic conditions as the location of the subject project for at least two years before planting. Neither heeled-in plant, nor plants from cold storage will be accepted.
   (B) Collected plants or transplanted trees when specified by the landscape architect may be used, provided that locations and soil conditions will permit proper balling.
5. Materials for Planting:
   (A) Stakes for guying trees shall be sound oak or other approved hardwood. Three stakes spread 120-degrees apart shall be used when detailed. Notch stakes for wire. See details. Trees located between sidewalk and curb shall have two stakes.
   (B) Tree Guys: Provide wire ties and guys of 2-strand, twisted, pliable galvanized steel wire not lighter than 12-gauge with zinc coated turnbuckles. Provide w-ply garden hose not less than 0.5-inch hose size, cut to lengths to protect tree trunks from damage by wires. Provide 14-gauge wire for trees less than 12-ft. height. Wire for guy may be twisted when a turnbuckle is not specified by the landscape architect. Use of tree ties in lieu of wire is acceptable.
   (C) Mulching: Mulch shall consist of double shredded hardwood mulch.
6. Planting Schedule: A professional horticulturist/nurseryman shall be consulted to determine the proper time, based on plant species and weather conditions, to move and install plant materials to minimize stress to the plant. Planting of deciduous material may be continued during the winter months provided there is no frost on the ground and frost-free soil planting mixtures are used.

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PLANTING NOTES DETAIL

SCALE:	DETAIL #
Not To Scale	8.08
REVISION DATE:	SHEET #:
December 2016	1 of 3

II. Planting Execution

1. Excavation of Plant Pits
   (A) Circular Pits, with vertical sides shall be excavated for all plants. In heavy soils, slope the sides outward. The diameter of the holes shall be 18-inches greater than the diameter of the ball for trees, or 1.5 times the diameter of shrubs and container grown material.
   (B) The depth of pits shall allow for one-eighth of the tree root ball or container depth to be above existing grade.
   (C) Obstructions encountered in excavated or planted areas shall be removed or plants relocated as approved.
   (D) Plants shall be planted plumb, at slightly above grade as in the nursery (in relation to finished grade); tamp topsoil under and around base of ball to fill all voids. Remove all burlap, ropes, plastic or synthetic twine or film, and wires from sides and tops of balls, but do not remove burlap from under ball. Thoroughly water when hole is two-thirds full of topsoil. Mix soil amendments thoroughly with soil mixture. Backfill pit halfway and tamp as pit is filled. Do not over compact remainder of backfill. After watering, 3" of mulch shall be applied over a 3" earth berm to create a shallow watering basin around the tree.
   (E) Shrubs shall be planted in conformance with deciduous shrub planting Detail 8.05.

III. Staking and Guying

1. Each tree or evergreen shall be immediately staked or guyed after planting.
   (A) Deciduous trees 2-2.5" caliper or larger and all evergreen trees shall be staked and guyed with three 2" x 2" x 6' hardwood stakes per tree, spread 120-degrees apart. Hardwood stakes shall be driven no less than 10-inches below subgrade and outside the root ball. A double strand of 12-gauge galvanized wire shall be twisted and threaded through 0.5-inch garden hose to protect the tree trunk and secured to the hardwood stake. Notch stakes for wire.
   (B) The 12-gauge galvanized wire shall be placed at a 45-degree angle from the tree to the stake. See Detail 8.04.

IV. Plant Pruning, Edging, and Mulching

1. Pruning shall be by experienced landscape personnel. Remove broken or damaged branches and roots. Cut back and thin deciduous material to retain two-thirds of the initial branches. Cut back evergreens to give compact uniform appearance. Damaged or pruned tree leaders shall be cause for rejection. Do not cut leaders.
2. If foliage is present on deciduous plant material, they shall be sprayed with an anti-desiccant, which slows down the transpiration process, through reducing the danger of dehydration.
3. The areas around isolated plants shall be edged and cultivated to the full diameter of the pit.
4. After cultivation, plant material shall be mulched with a three-inch layer of double shredded mulch over the entire area of the bed or saucer.

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PLANTING NOTES DETAIL

SCALE:	DETAIL #
Not To Scale	8.08
REVISION DATE:	SHEET #:
December 2016	2 of 3

II. Warranty: Plant material shall have a one-year warranty commencing on the date of initial acceptance. Plant material shall be alive and in satisfactory condition at the end of the warranty period. Plant material will be considered dead if 25% or more of the material is found to be dead. Trees with a leader that has died will be considered dead. Trees with 25% or more crown found to be dead will also be considered dead.

   (A) Dead plants shall be replaced in the next planting period or as approved.
   (B) Replacements shall be of same type and size of specie originally specified or as approved.
   (C) The warranty shall be for a one-time only replacement.
   (D) Contractor will not be responsible for vandalism or losses due to abnormal weather conditions.

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PLANTING NOTES DETAIL

SCALE:	DETAIL #
Not To Scale	8.08
REVISION DATE:	SHEET #:
December 2016	3 of 3

NO.	DATE	REVISION PRIOR TO APPROVAL

CPJ Associates
Charles P. Johnson & Associates, Inc.
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LANDSCAPE NOTES & DETAILS

FAIRFAX PRESBYTERIAN CHURCH

CITY OF FAIRFAX, VIRGINIA

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
09/28/2022
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	REVIEW BY	APPROV	DATE
	REVISIONS			

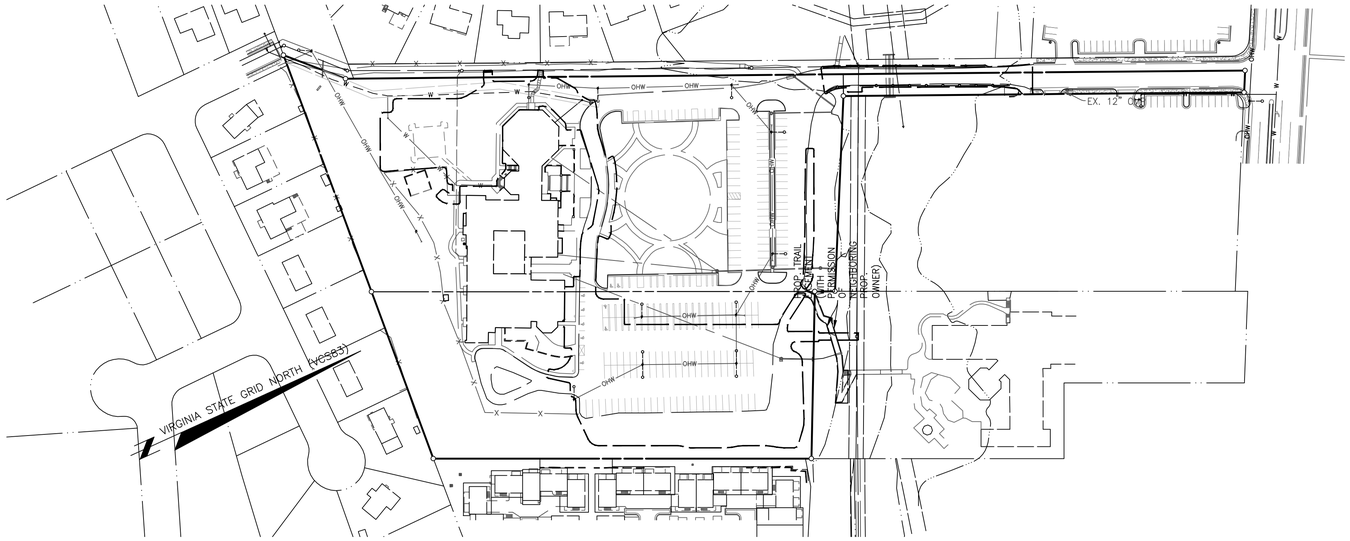
DESIGN	DRAFT	APPROVED	DATE	SCALE
KJV	KJV	HMF	JAN. 2021	HORIZ: 1" = 40' VERT: ---

SHEET 42 OF 53

PRJ NO: 2017-2570

TYPE: MDP

Attached Xrefs: 00-G0700/00-G0500/XREF-R0401/XREF-R0301/00-G6801/RZ SEAL/RZ SIGNATURE/RZ SIGNATURE DATE



PRE–DEVELOPMENT OVERALL DEVELOPMENT

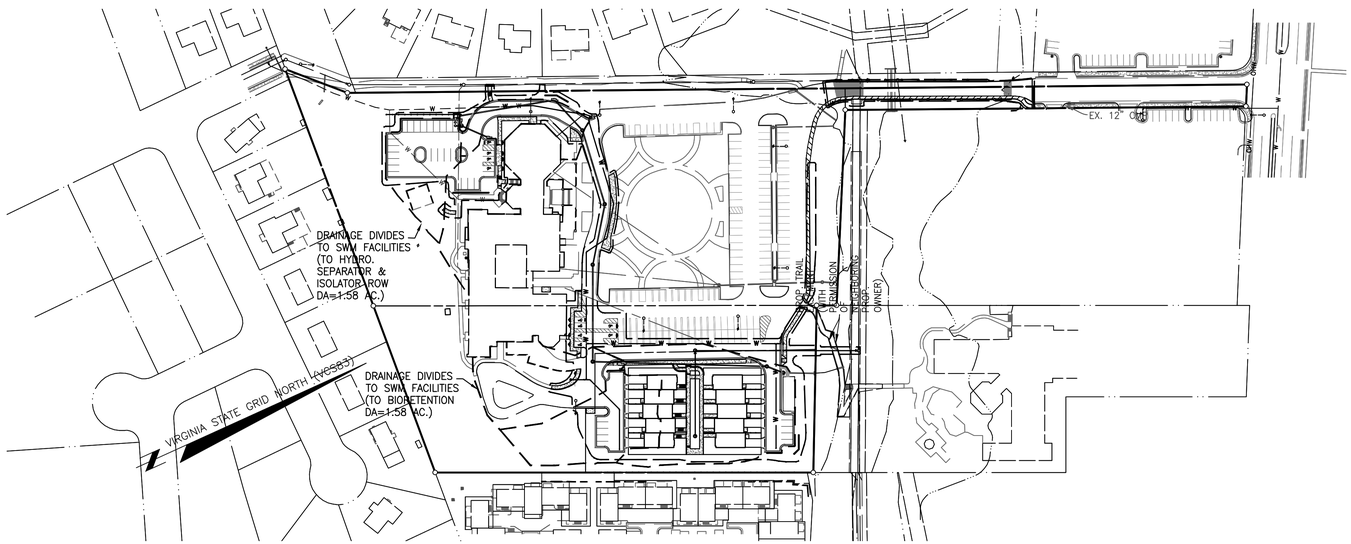
SCALE: 1" = 100'

*FOR DETAILED INFORMATION OF EACH PHASE OF DEVELOPMENT, PLEASE SEE SHEETS 44 AND 45.

GRAPHIC SCALE
100 0 50 100 200
SCALE: 1" = 100'

Pre-ReDevelopment Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed forest/open space		0.67	0.00	0.09	0.76
Managed Turf (acres) -- disturbed, graded for yards or other turf to be		0.08	0.11	0.34	0.53
Impervious Cover (acres)		0.04	0.11	0.95	1.10
					2.39



POST–DEVELOPMENT OVERALL DEVELOPMENT

SCALE: 1" = 100'

*FOR DETAILED INFORMATION OF EACH PHASE OF DEVELOPMENT, PLEASE SEE SHEETS 44 AND 45.

Post-Development Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested		0.00	0.00	0.00	0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be		0.42	0.09	0.43	0.94
Impervious Cover (acres)		0.37	0.13	0.95	1.45
Area Check	**OK.**	**OK.**	**OK.**	**OK.**	2.39

OVERALL STORMWATER/OUTFALL NARRATIVE

THE OUTFALL POINT OF THIS PROJECT IS AT ACCOTINK CREEK, ABOUT 340' DOWNSTREAM OF THE EXISTING CULVERTS UNDER PRESBYTERIAN WAY, PER 9VAC25–870–66–B–4. AT THIS POINT, ONSITE RUNOFF DISCHARGES INTO A NATURAL CHANNEL, THROUGH AN EXISTING MAN–MADE STORM SEWER. A LEVEL 1 BIORETENTION AREA AND A MANUFACTURED TREATMENT FACILITY ARE PROPOSED TO MITIGATE THE IMPACTS OF THE PROPOSED DEVELOPMENT ON THE EXISTING PARKING LOT AND FORESTED AREAS WITHIN THE LIMITS OF CLEARING AND GRADING.

CHANNEL PROTECTION:
POST DEVELOPMENT RUNOFF DURING THE 1–YEAR STORM EVENT HAS BEEN REDUCED IN ACCORDANCE WITH 9VAC25–870–66–B–3–A, AND AS SUCH, CHANNEL PROTECTION REQUIREMENTS HAVE BEEN MET FOR THIS PORTION OF THE SITE.

FLOOD PROTECTION:
THE POST DEVELOPMENT 2–YEAR STORM AND 10–YEAR 24–HOUR STORMS WILL HAVE PEAK RUNOFF RATES WHICH ARE LESS THAN THE PRE DEVELOPMENT CONDITION, PER 9VAC25–870–66–C–1. THE LIMIT OF ANALYSIS FOR FLOOD PROTECTION IS WITHIN ACCOTINK CREEK, 340' DOWNSTREAM OF THE EXISTING CULVERTS UNDER PRESBYTERIAN WAY, PER 9VAC25–870–66–C–3–C.

SEE RUNOFF SUMMARY TABLE ON THIS SHEET.

WATER QUALITY:
BIORETENTION, A LOW IMPACT DEVELOPMENT (LID) TECHNIQUE, IS BEING PROPOSED ON THE TOWN HOME PORTION OF THE PROJECT TO MEET WATER QUALITY REQUIREMENTS. TWO MANUFACTURED FILTERING DEVICES ARE PROPOSED ON THE ADDITIONAL PARKING PORTION OF THE PROJECT TO ADDRESS WATER QUALITY REQUIREMENTS. THE BIORETENTION FACILITY AND THE MANUFACTURED TREATMENT DEVICES WILL BE PRIVATELY OWNED AND MAINTAINED.

SEE VRRM SUMMARY ON THIS SHEET.

THE BMP AND SWM DESIGN SHOWN ARE PRELIMINARY AND MAY CHANGE AT THE TIME OF FINAL ENGINEERING. THE PROJECT MAY USE NUTRIENT CREDITS OR ALTERNATE BMP/SWM FACILITIES TO MEET THE WATER QUALITY AND WATER QUANTITY REQUIREMENTS FOR THIS PROJECT AS NECESSARY.

OVERALL DEVELOPMENT 1-Year Storm Channel Protection	
Pre Dev. Q Onsite	3.13 cfs
Pre Dev Rv	8,704 cf
Post Dev Rv	12,634 cf
Pre/post vol. ratio	0.69
Improvement Factor	0.8
Post Dev Q allowable	1.73 cfs
Offsite Controlled (UGS 1) (pre dev bypass)	0.55 cfs
Offsite Controlled (UGS 2) (pre dev bypass)	0.26 cfs
Total Allowable release	2.54 cfs
Post Dev Onsite Uncontrolled	1.57 cfs
Post Dev UGS 1 Release	0.87 cfs
Post Dev UGS 2 Release	0.05 cfs
Total Post Dev Release	2.49 cfs

Stormwater Quantity Summary - Overall Development

	1-Year Storm Channel Protection (cfs)	2-Year Storm (cfs)	10-Year Storm Flood Protection (cfs)
Pre Development	3.94	5.65	11.41
Post Development allowable release	2.54	5.65	11.41
Post Development Release	2.49	5.03	10.97

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	3.62
TP LOAD REDUCTION REQUIRED (lb/yr)	1.33
TP LOAD REDUCTION ACHIEVED (lb/yr)	1.36
TP LOAD REMAINING (lb/yr):	2.27
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	0.00 **

** TARGET TP REDUCTION EXCEEDED BY 0.03 LB/YEAR **

**PERMEABLE PAVERS IN PHASE TWO NOT INCLUDED IN VRRM CALCULATIONS

Stormwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists-

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft^3)	Runoff Reduction (ft^3)	Remaining Runoff Volume (ft^3)	Total BMP Treatment Volume (ft^3)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed
6. Bioretention (RR)													
6.a. Bioretention #1 or Micro-Bioretention #1 or Urban Bioretention (Spec #9)	40	0.34	0.71	0	1,090	1,635	2,726	25	0.00	1.71	0.94	0.77	

14. Manufactured Treatment Devices (no RR)													
14.a. Manufactured Treatment Device-Hydrodynamic	0	0.21	0.32	0	0	1,275	1,275	20	0.00	0.80	0.16	0.64	14.b. MTD - Filtering
14.b. ISOLATOR ROW	0			1,275	0	1,275	1,275	40	0.64	0.00	0.26	0.38	

14. Manufactured BMP (no RR)				
0	0.00	5.72	0.00	5.72
0	5.72	0.00	0.00	5.72

NO.	DATE	REVISION PRIOR TO APPROVAL

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OVERALL STORMWATER MANAGEMENT/BMP DESIGN

FAIRFAX PRESBYTERIAN CHURCH

CITY OF FAIRFAX, VIRGINIA

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
09/28/2022
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	REVISIONS	REVIEW BY	APPRVD	DATE

DESIGN GMP | DRAFT GMP | APPROVED BRT | DATE JAN. 2021 | SCALE HORIZ: 1"=100' VERT: ---

SHEET 43 OF 53

PRJ NO: 2017–2570

TYPE: MDP

Attached Xrefs: 00–G0700/00–G0500/XREF–R0301/XREF–R0401/XREF–R0301/RZ SEAL/RZ SIGNATURE/RZ SIGNATURE DATE

PRE–DEVELOPMENT
PHASE ONE – TOWNHOUSE DEVELOPMENT

SCALE: 1" = 50'

Pre-ReDevelopment Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed forest/open space		0.50	0.00	0.00	0.50
Managed Turf (acres) -- disturbed, graded for yards or other turf to be		0.04	0.11	0.09	0.24
Impervious Cover (acres)		0.04	0.11	0.94	1.09
					1.83

PHASE ONE – TOWNHOUSE DEVELOPMENT STORMWATER/OUTFALL NARRATIVE

THE OUTFALL POINT OF THIS PORTION OF THE PROJECT IS AT ACCOTINK CREEK, ABOUT 340' DOWNSTREAM OF THE EXISTING CULVERTS UNDER PRESBYTERIAN WAY, PER 9VAC25–870–66–B–4. AT THIS POINT, ONSITE RUNOFF DISCHARGES INTO A NATURAL CHANNEL, THROUGH AN EXISTING MAN–MADE STORM SEWER. A LEVEL 1 BIORETENTION AREA IS PROPOSED TO MITIGATE THE IMPACTS OF THE PROPOSED DEVELOPMENT ON THE EXISTING PARKING LOT AND FORESTED AREAS WITHIN THE LIMITS OF CLEARING AND GRADING.

CHANNEL PROTECTION:
POST DEVELOPMENT RUNOFF DURING THE 1–YEAR STORM EVENT HAS BEEN REDUCED IN ACCORDANCE WITH 9VAC25–870–66–B–3–A, AND AS SUCH, CHANNEL PROTECTION REQUIREMENTS HAVE BEEN MET FOR THIS PORTION OF THE SITE.

FLOOD PROTECTION:
THE POST DEVELOPMENT 2–YEAR STORM AND 10–YEAR 24–HOUR STORMS WILL HAVE PEAK RUNOFF RATES WHICH ARE LESS THAN THE PRE DEVELOPMENT CONDITION, PER 9VAC25–870–66–C–1. THE LIMIT OF ANALYSIS FOR FLOOD PROTECTION IS WITHIN ACCOTINK CREEK, 340' DOWNSTREAM OF THE EXISTING CULVERTS UNDER PRESBYTERIAN WAY, PER 9VAC25–870–66–C–3–C.

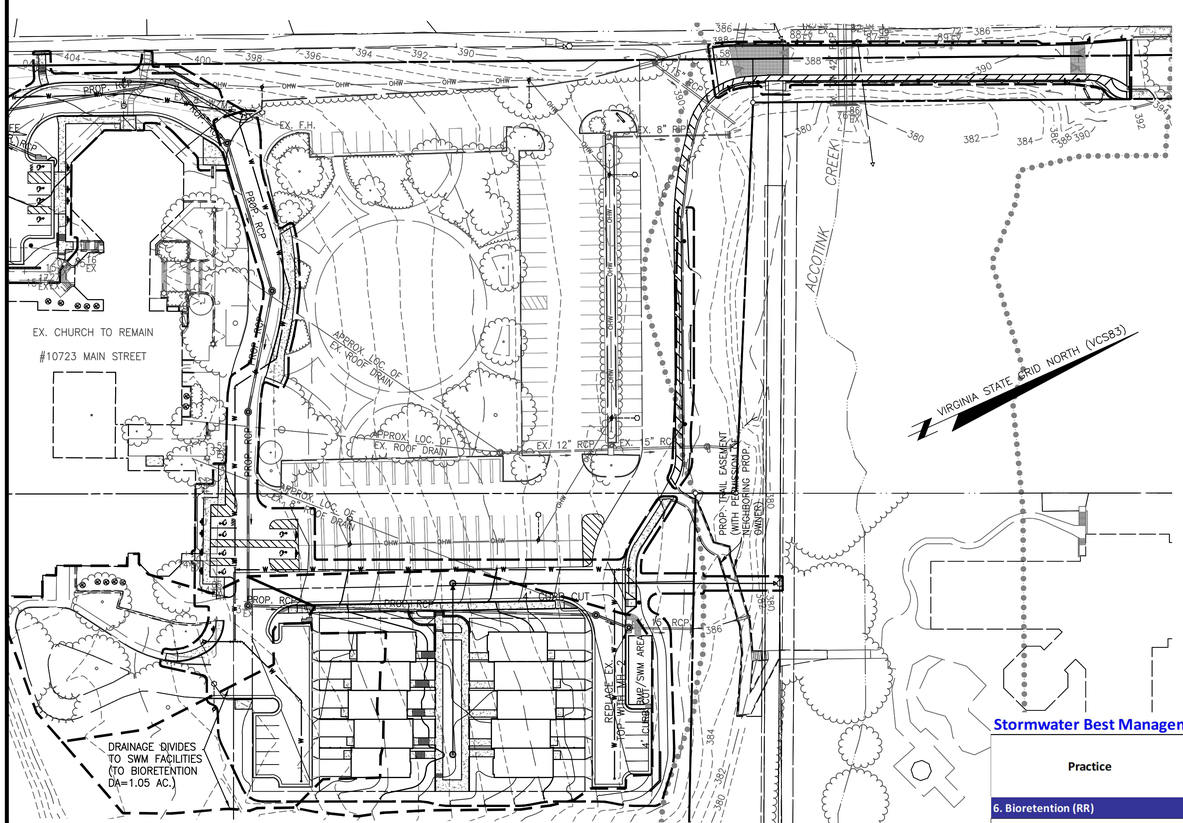
SEE RUNOFF SUMMARY TABLE ON THIS SHEET.

WATER QUALITY:
BIORETENTION, A LOW IMPACT DEVELOPMENT (LID) TECHNIQUE, IS BEING PROPOSED ON THIS PORTION OF THE PROJECT TO MEET WATER QUALITY REQUIREMENTS. THE BIORETENTION FACILITY WILL BE PRIVATELY OWNED AND MAINTAINED.

SEE VRRM SUMMARY ON THIS SHEET.

THE BMP AND SWM DESIGN IS PRELIMINARY AND MAY CHANGE AT THE TIME OF FINAL ENGINEERING. THE PROJECT MAY USE NUTRIENT CREDITS OR ALTERNATE BMP/SWM FACILITIES TO MEET THE WATER QUALITY AND WATER QUANTITY REQUIREMENTS FOR THIS PROJECT AS NECESSARY.

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



POST–DEVELOPMENT
PHASE ONE – TOWNHOUSE DEVELOPMENT

SCALE: 1" = 50'

Post-Development Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested		0.00	0.00	0.00	0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be		0.31	0.09	0.32	0.72
Impervious Cover (acres)		0.27	0.13	0.71	1.11
Area Check	OK.	OK.	OK.	OK.	1.83

PHASE 1 - TOWNHOMES 1-Year Storm Channel Protection		
Pre Dev. Q Onsite	2.85	cfs
Pre Dev Rv	7,859	cf
Post Dev Rv	9,674	cf
Pre/post vol. ratio	0.81	
Improvement Factor	0.8	
Post Dev Q allowable	1.85	cfs
Offsite Controlled (UGS 1) (pre dev bypass)	0.55	cfs
Total Allowable release	2.40	cfs
Post Dev Onsite Uncontrolled	1.35	cfs
Post Dev UGS 1 Release	0.87	cfs
Total Post Dev Release	2.22	cfs

Stormwater Quantity Summary - Phase 1 - Townhomes			
	1-Year Channel Protection (cfs)	2-Year Storm (cfs)	10-Year Storm Flood Protection (cfs)
Pre Development	3.40	4.75	9.17
Post Development allowable release	2.40	4.75	9.17
Post Development Release	2.22	4.49	8.88

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	2.77
TP LOAD REDUCTION REQUIRED (lb/yr)	0.67
TP LOAD REDUCTION ACHIEVED (lb/yr)	0.94
TP LOAD REMAINING (lb/yr):	1.83
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	0.00 **

** TARGET TP REDUCTION EXCEEDED BY 0.28 LB/YEAR **

Stormwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists-

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft^3)	Runoff Reduction (ft^3)	Remaining Runoff Volume (ft^3)	Total BMP Treatment Volume (ft^3)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed
6. Bioretention (RR)													
6.a. Bioretention #1 or Micro-Bioretention #1 or Urban Bioretention (Spec #9)	40	0.34	0.71	0	1,090	1,635	2,726	25	0.00	1.71	0.94	0.77	

NO.	DATE	REVISION PRIOR TO APPROVAL

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PHASE ONE STORMWATER MANAGEMENT/BMP DESIGN

FAIRFAX PRESBYTERIAN CHURCH

CITY OF FAIRFAX, VIRGINIA

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
09/28/2022
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	REVIEW BY	APPROV	DATE

REVISIONS

DESIGN GMP	DRAFT GMP
APPROVED BRT	DATE JAN. 2021
SCALE HORZ:1" = 50' VERT: ---	

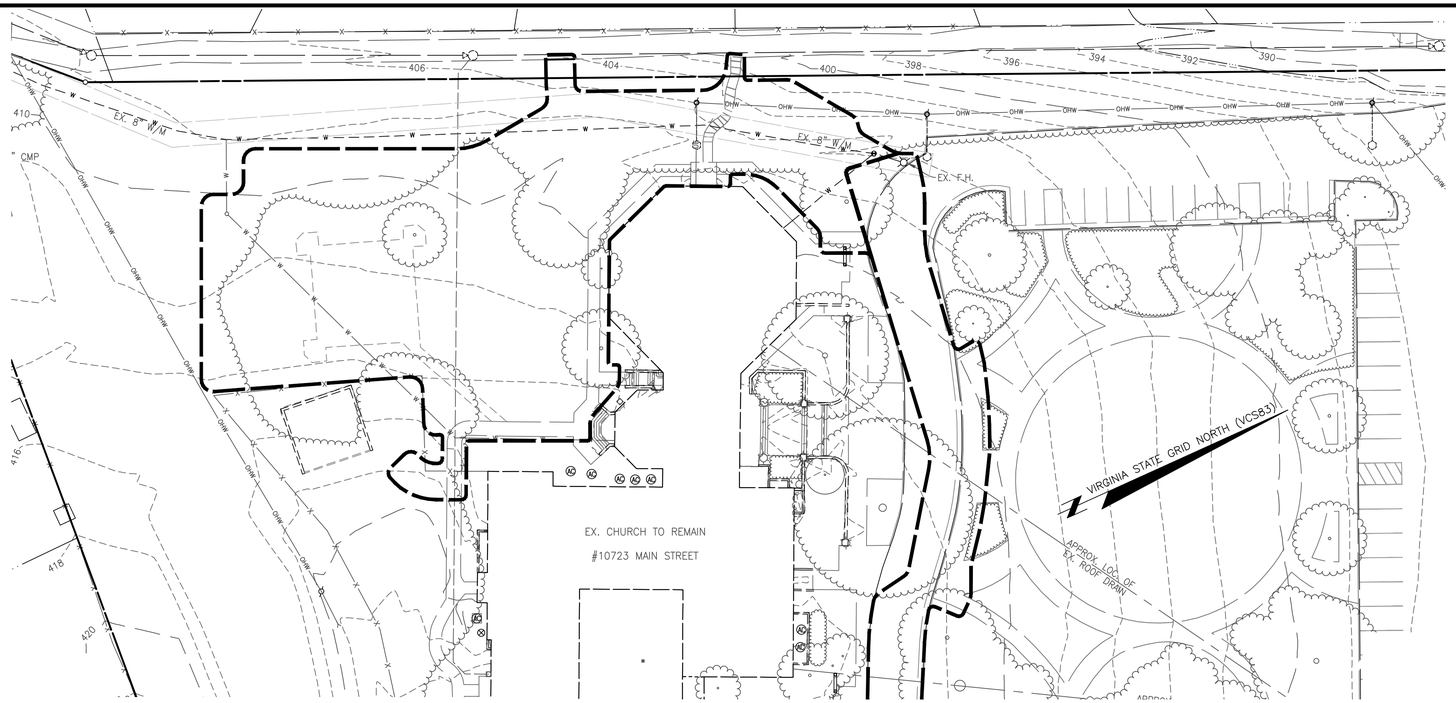
SHEET 44 OF 53

PRJ NO: 2017–2570

TYPE: MDP

Attached Xrefs: 00–G0700/00–G0500/XREF–R0401/XREF–R0301/RZ SEAL/RZ SIGNATURE/RZ SIGNATURE DATE

Last Saved 9/29/2022 Last Plotted 9/29/2022 2:34 PM Sheet N:\2017–2570\DWG\00–G2301



Pre-ReDevelopment Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed forest/open space		0.17	0.00	0.09	0.26
Managed Turf (acres) -- disturbed, graded for yards or other turf to be		0.04	0.00	0.25	0.29
Impervious Cover (acres)		0.00	0.00	0.01	0.01
					0.56

PRE-DEVELOPMENT
PHASE TWO – ADDITIONAL PARKING AREA
SCALE: 1" = 30'

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

PHASE TWO – ADDITIONAL PARKING STORMWATER/OUTFALL NARRATIVE

THE OUTFALL POINT OF THIS PORTION OF THE PROJECT IS AT ACCOTINK CREEK, ABOUT 340' DOWNSTREAM OF THE EXISTING CULVERTS UNDER PRESBYTERIAN WAY, PER 9VAC25-870-66-B-4. THE RUNOFF DISCHARGES INTO A NATURAL CHANNEL, THROUGH AN EXISTING MAN-MADE STORM SEWER. AN UNDERGROUND DETENTION SYSTEM AND A MANUFACTURED TREATMENT FACILITY ARE PROPOSED TO MITIGATE THE INCREASE IN IMPERVIOUS AREA FROM THE PARKING LOT.

CHANNEL PROTECTION:
POST DEVELOPMENT RUNOFF DURING THE 1-YEAR STORM EVENT HAS BEEN REDUCED IN ACCORDANCE WITH 9VAC25-870-66-B-3-A, AND AS SUCH, CHANNEL PROTECTION REQUIREMENTS HAVE BEEN MET FOR THIS PORTION OF THE SITE.

FLOOD PROTECTION:
THE POST DEVELOPMENT 2-YEAR STORM AND 10-YEAR 24-HOUR STORMS WILL HAVE PEAK RUNOFF RATES WHICH ARE LESS THAN THE PRE DEVELOPMENT CONDITION, PER 9VAC25-870-66-C-1. THE LIMIT OF ANALYSIS FOR FLOOD PROTECTION IS WITHIN ACCOTINK CREEK, 340' DOWNSTREAM OF THE EXISTING CULVERTS UNDER PRESBYTERIAN WAY, PER 9VAC25-870-66-C-3-C.

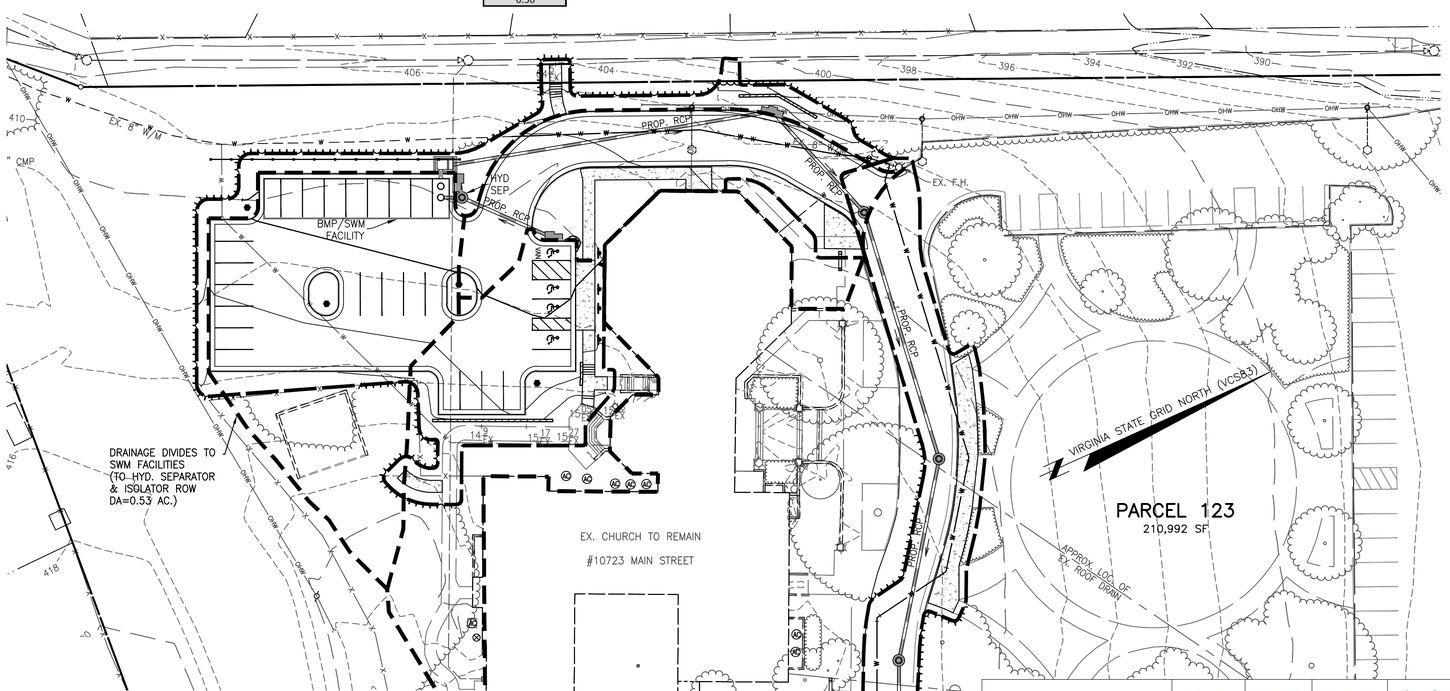
SEE RUNOFF SUMMARY TABLE ON THIS SHEET.

WATER QUALITY:
DUE TO SITE CONSTRAINTS, SUCH AS EASEMENTS AND EXISTING UTILITIES, THIS PORTION OF THE PROJECT MEETS WATER QUALITY REQUIREMENTS THROUGH THE USE OF TWO MANUFACTURED FILTERING DEVICES.

PLEASE NOTE THAT THE PROPOSED MANUFACTURED DEVICES DO NOT COMPLETELY ADDRESS THE REQUIRED PHOSPHORUS REMOVAL FOR PHASE TWO AS A STAND ALONE PROJECT AS PER VRRM SPREADSHEET ON THIS SHEET. THE MINOR RESIDUAL AMOUNT OF POLLUTANT LOADING IS ADDRESSED BY THE EXCESS POLLUTANT REMOVAL BY THE PHASE ONE WATER QUALITY FACILITY (SEE VRRM ON SHEET 43 FOR COMPLIANCE OF OVERALL DEVELOPMENT).

THE UNDERGROUND DETENTION FACILITY AND MANUFACTURED TREATMENT DEVICES WILL BE PRIVATELY OWNED AND MAINTAINED.

THE BMP AND SWM DESIGN IS PRELIMINARY AND MAY CHANGE AT THE TIME OF FINAL ENGINEERING. THE PROJECT MAY USE NUTRIENT CREDITS OR ALTERNATE BMP/SWM FACILITIES TO MEET THE WATER QUALITY AND WATER QUANTITY REQUIREMENTS FOR THIS PROJECT AS NECESSARY



SEE OVERALL DEVELOPMENT FOR RUNOFF CALCULATIONS ON SHEETS 43, 46 & 47

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	0.85
TP LOAD REDUCTION REQUIRED (lb/yr)	0.62
TP LOAD REDUCTION ACHIEVED (lb/yr)	0.42
TP LOAD REMAINING (lb/yr):	0.43
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	0.20 *

* THIS VRRM SHOWS RESULTS OF PHASE 2 AS A STAND ALONE PROJECT. THE OVERALL DEVELOPMENT MEETS VRRM COMPLIANCE SEE SHEET 43 FOR OVERALL CONDITION VRRM SPREADSHEET.

Post-Development Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested		0.00	0.00	0.00	0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be		0.11	0.00	0.11	0.22
Impervious Cover (acres)		0.10	0.00	0.24	0.34
Area Check	OK.	OK.	OK.	OK.	0.56

POST-DEVELOPMENT
PHASE TWO – ADDITIONAL PARKING AREA
SCALE: 1" = 30'

**PERMEABLE PAVERS NOT INCLUDED IN PHASE TWO VRRM CALCULATIONS

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft^3)	Runoff Reduction (ft^3)	Remaining Runoff Volume (ft^3)	Total BMP Treatment Volume (ft^3)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed
14. Manufactured Treatment Devices (no RR)													
14.a. Manufactured Treatment Device-Hydrodynamic	0	0.21	0.32	0	0	1,275	1,275	20	0.00	0.80	0.16	0.64	14.b. MTD - Filtering
14. ISOLATOR ROW	0			1,275	0	1,275	1,275	40	0.64	0.00	0.26	0.38	

PHASE TWO STORMWATER MANAGEMENT/BMP DESIGN

FAIRFAX PRESBYTERIAN CHURCH

CITY OF FAIRFAX, VIRGINIA

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
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PROFESSIONAL ENGINEER

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

NO.	DESCRIPTION	REVIEW BY	APPROV.	DATE
	REVISIONS			

DESIGN: GMP | DRAFT: GMP | APPROVED: BRT | DATE: JAN. 2021 | SCALE: HORIZ: 1" = 30' VERT: ---

SHEET 45 OF 53

PRJ NO: 2017-2570

TYPE: MDP

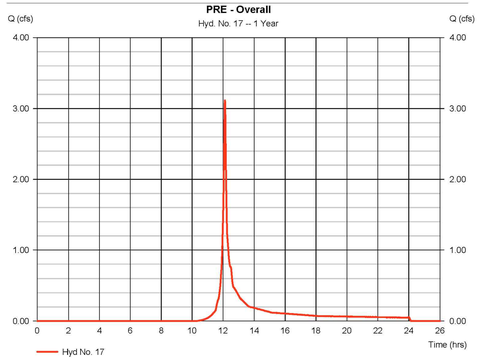
Attached Xrefs: 00-G0700/00-G0500/XREF-R0401/XREF-R0301/RZ SEAL/RZ SIGNATURE/RZ SIGNATURE DATE

PRE DEV. ONSITE – 1–YEAR

Hyd. No. 17

PRE - Overall

Hydrograph type	= SCS Runoff	Peak discharge	= 3.125 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 8,704 cuft
Drainage area	= 2.390 ac	Curve number	= 80
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.62 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484

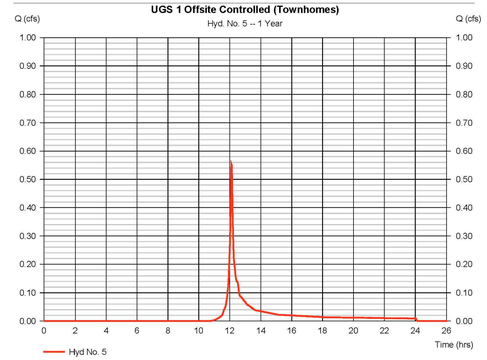


PRE DEV OFFSITE BYPASS/UGS 1 OFFSITE CONTROLLED 1–YEAR

Hyd. No. 5

UGS 1 Offsite Controlled (Townhomes)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.552 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 1,557 cuft
Drainage area	= 0.480 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.62 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484

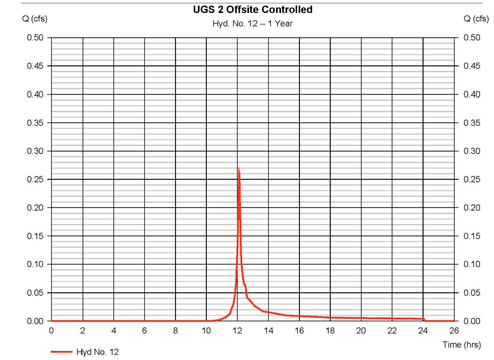


PRE DEV OFFSITE BYPASS/UGS 2 OFFSITE CONTROLLED 1–YEAR

Hyd. No. 12

UGS 2 Offsite Controlled

Hydrograph type	= SCS Runoff	Peak discharge	= 0.261 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 728 cuft
Drainage area	= 0.200 ac	Curve number	= 80*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.62 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484

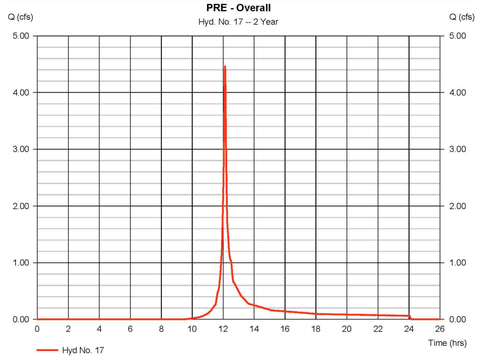


PRE DEV. ONSITE – 2–YEAR

Hyd. No. 17

PRE - Overall

Hydrograph type	= SCS Runoff	Peak discharge	= 4.472 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 12,337 cuft
Drainage area	= 2.390 ac	Curve number	= 80
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.17 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484

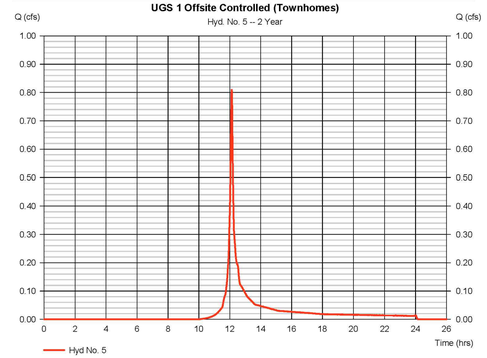


PRE DEV OFFSITE BYPASS/UGS 1 OFFSITE CONTROLLED 2–YEAR

Hyd. No. 5

UGS 1 Offsite Controlled (Townhomes)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.811 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 2,249 cuft
Drainage area	= 0.480 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.17 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484

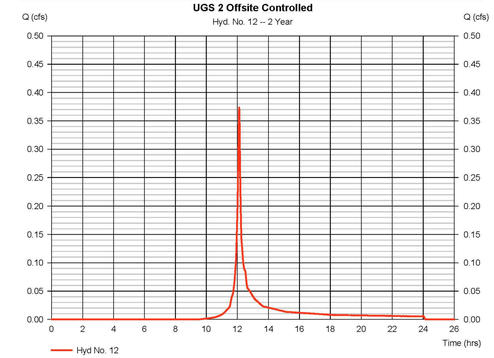


PRE DEV OFFSITE BYPASS/UGS 2 OFFSITE CONTROLLED 2–YEAR

Hyd. No. 12

UGS 2 Offsite Controlled

Hydrograph type	= SCS Runoff	Peak discharge	= 0.374 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 1,032 cuft
Drainage area	= 0.200 ac	Curve number	= 80*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.17 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484

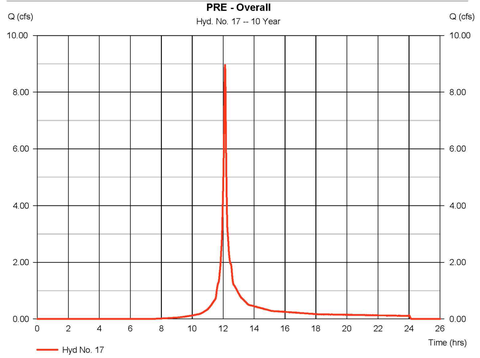


PRE DEV. ONSITE – 10–YEAR

Hyd. No. 17

PRE - Overall

Hydrograph type	= SCS Runoff	Peak discharge	= 8.972 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 24,870 cuft
Drainage area	= 2.390 ac	Curve number	= 80
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.87 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484

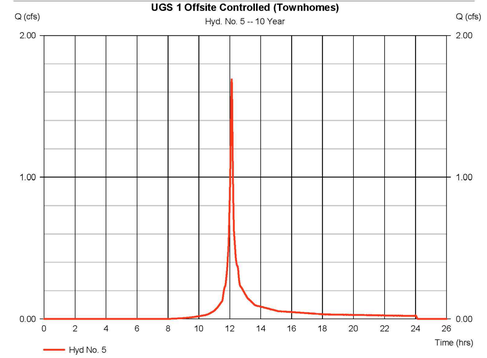


PRE DEV OFFSITE BYPASS/UGS 1 OFFSITE CONTROLLED 10–YEAR

Hyd. No. 5

UGS 1 Offsite Controlled (Townhomes)

Hydrograph type	= SCS Runoff	Peak discharge	= 1.693 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 4,675 cuft
Drainage area	= 0.480 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.87 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484

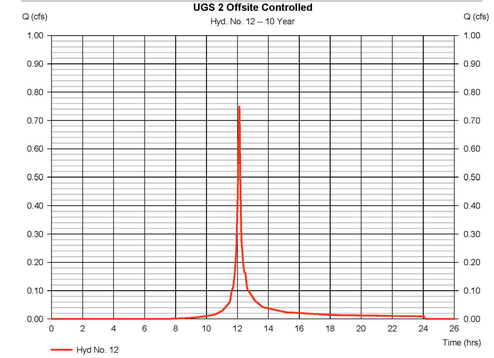


PRE DEV OFFSITE BYPASS/UGS 2 OFFSITE CONTROLLED 10–YEAR

Hyd. No. 12

UGS 2 Offsite Controlled

Hydrograph type	= SCS Runoff	Peak discharge	= 0.751 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 2,081 cuft
Drainage area	= 0.200 ac	Curve number	= 80*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.87 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484



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NO.	DATE	REVISION PRIOR TO APPROVAL

OVERALL DEVELOPMENT HYDROGRAPHS 1

FAIRFAX PRESBYTERIAN CHURCH

CITY OF FAIRFAX, VIRGINIA

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
09/28/2022
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SHEET 46 OF 53

PRJ NO: 2017-2570

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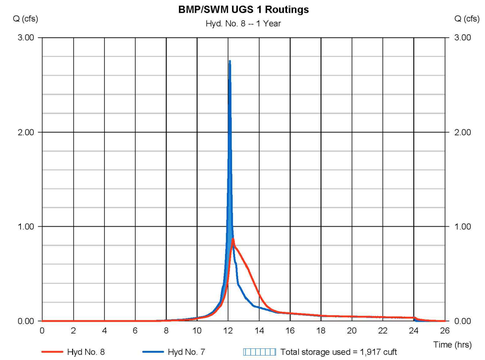
UGS 1 ROUTING – 1–YEAR

Hyd. No. 8

BMP/SWM UGS 1 Routings

Hydrograph type	= Reservoir	Peak discharge	= 0.869 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.32 hrs
Time interval	= 1 min	Hyd. volume	= 7,688 cuft
Inflow hyd. No.	= 7 - Total to BMP/SWM UGS 1	Max. Elevation	= 392.20 ft
Reservoir name	= Townhome BMP/SWM	Max. Storage	= 1,917 cuft

Storage Indication method used.



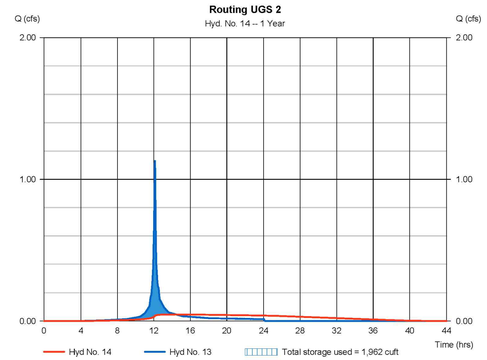
UGS 2 ROUTING – 1–YEAR

Hyd. No. 14

Routing UGS 2

Hydrograph type	= Reservoir	Peak discharge	= 0.047 cfs
Storm frequency	= 1 yrs	Time to peak	= 14.42 hrs
Time interval	= 1 min	Hyd. volume	= 3,289 cuft
Inflow hyd. No.	= 13 - Total To UGS 2	Max. Elevation	= 405.79 ft
Reservoir name	= UGS 2	Max. Storage	= 1,962 cuft

Storage Indication method used.

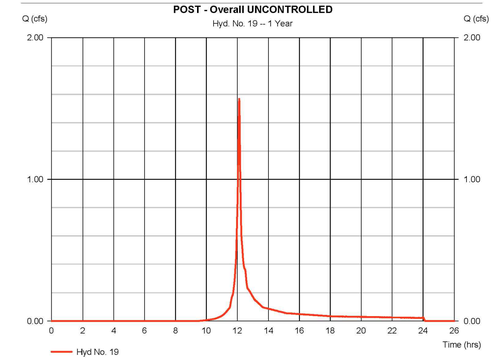


POST DEV. UNCONTROLLED – 1–YEAR

Hyd. No. 19

POST - Overall UNCONTROLLED

Hydrograph type	= SCS Runoff	Peak discharge	= 1.573 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 4,338 cuft
Drainage area	= 1.010 ac	Curve number	= 83
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.62 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484



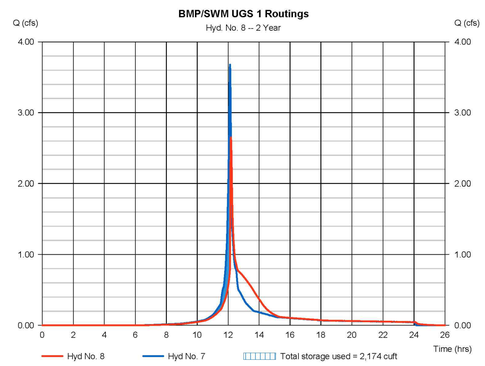
UGS 1 ROUTING – 2–YEAR

Hyd. No. 8

BMP/SWM UGS 1 Routings

Hydrograph type	= Reservoir	Peak discharge	= 2.658 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.18 hrs
Time interval	= 1 min	Hyd. volume	= 10,321 cuft
Inflow hyd. No.	= 7 - Total to BMP/SWM UGS 1	Max. Elevation	= 392.74 ft
Reservoir name	= Townhome BMP/SWM	Max. Storage	= 2,174 cuft

Storage Indication method used.



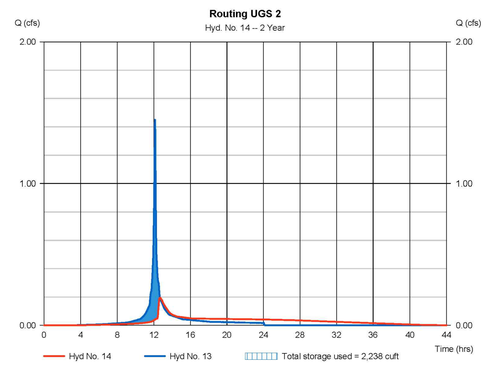
UGS 2 ROUTING – 2–YEAR

Hyd. No. 14

Routing UGS 2

Hydrograph type	= Reservoir	Peak discharge	= 0.195 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.65 hrs
Time interval	= 1 min	Hyd. volume	= 4,255 cuft
Inflow hyd. No.	= 13 - Total To UGS 2	Max. Elevation	= 406.18 ft
Reservoir name	= UGS 2	Max. Storage	= 2,238 cuft

Storage Indication method used.

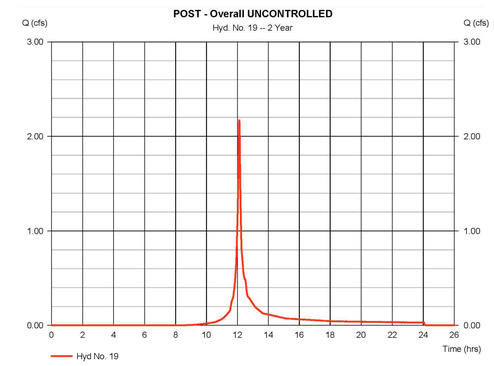


POST DEV. UNCONTROLLED – 2–YEAR

Hyd. No. 19

POST - Overall UNCONTROLLED

Hydrograph type	= SCS Runoff	Peak discharge	= 2.174 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 5,991 cuft
Drainage area	= 1.010 ac	Curve number	= 83
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.17 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484



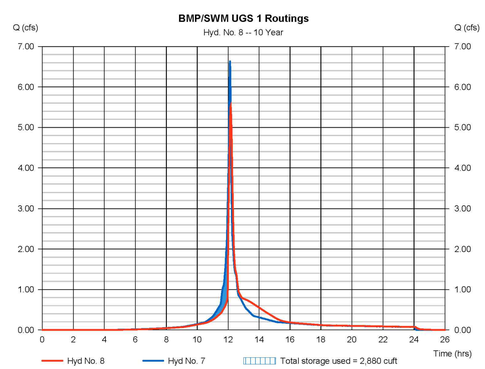
UGS 1 ROUTING – 10–YEAR

Hyd. No. 8

BMP/SWM UGS 1 Routings

Hydrograph type	= Reservoir	Peak discharge	= 5.522 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 1 min	Hyd. volume	= 19,010 cuft
Inflow hyd. No.	= 7 - Total to BMP/SWM UGS 1	Max. Elevation	= 394.42 ft
Reservoir name	= Townhome BMP/SWM	Max. Storage	= 2,880 cuft

Storage Indication method used.



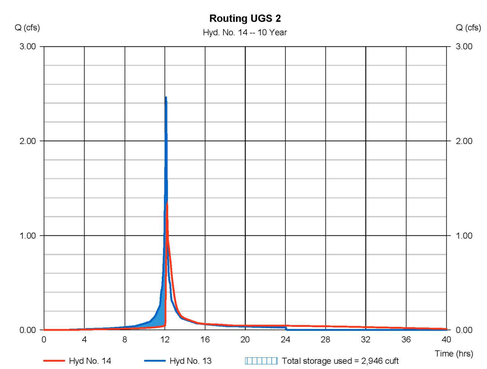
UGS 2 ROUTING – 10–YEAR

Hyd. No. 14

Routing UGS 2

Hydrograph type	= Reservoir	Peak discharge	= 1.321 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.22 hrs
Time interval	= 1 min	Hyd. volume	= 7,374 cuft
Inflow hyd. No.	= 13 - Total To UGS 2	Max. Elevation	= 407.38 ft
Reservoir name	= UGS 2	Max. Storage	= 2,946 cuft

Storage Indication method used.

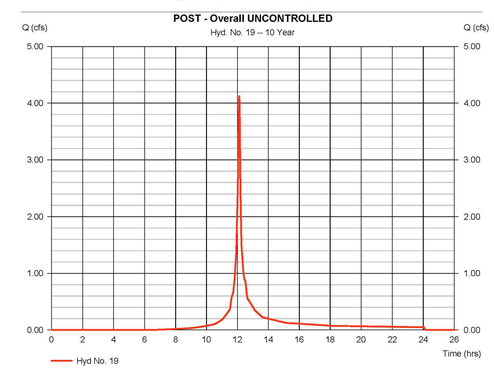


POST DEV. UNCONTROLLED – 10–YEAR

Hyd. No. 19

POST - Overall UNCONTROLLED

Hydrograph type	= SCS Runoff	Peak discharge	= 4.130 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 11,557 cuft
Drainage area	= 1.010 ac	Curve number	= 83
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.87 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484



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OVERALL DEVELOPMENT HYDROGRAPHS 2

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CITY OF FAIRFAX, VIRGINIA

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
09/28/2022
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	REVISIONS	REVIEW BY	APPROVD	DATE

DESIGN GMP	DRAFT GMP	APPROVED BRT	DATE JAN. 2021
SCALE HORIZ: 1"=100' VERT: ----			

SHEET 47 OF 53

PRJ NO: 2017-2570

TYPE: MDP

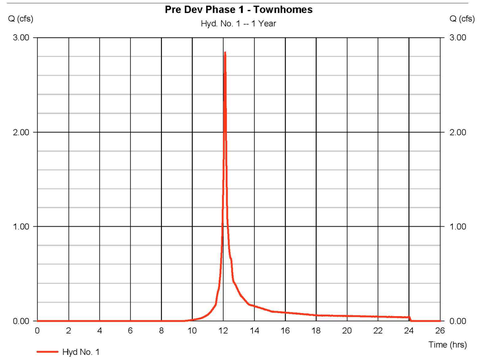
Attached Xrefs: 00-G0700/00-G0500/XREF-R0401/XREF-R0301/RZ SEAL/RZ SIGNATURE/RZ SIGNATURE DATE

PHASE 1 PRE DEV. ONSITE – 1–YEAR

Hyd. No. 1

Pre Dev Phase 1 - Townhomes

Hydrograph type	= SCS Runoff	Peak discharge	= 2.850 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 7,859 cuft
Drainage area	= 1.830 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.62 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484

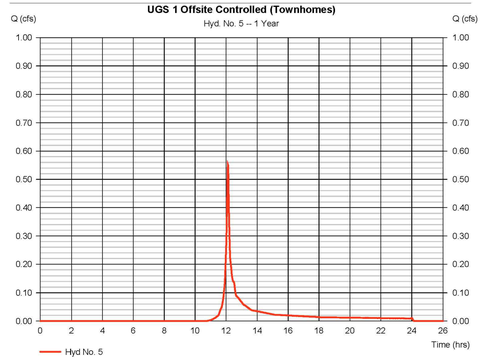


PRE DEV OFFSITE BYPASS/UGS 1 OFFSITE CONTROLLED 1–YEAR

Hyd. No. 5

UGS 1 Offsite Controlled (Townhomes)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.552 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 1,557 cuft
Drainage area	= 0.480 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.62 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484



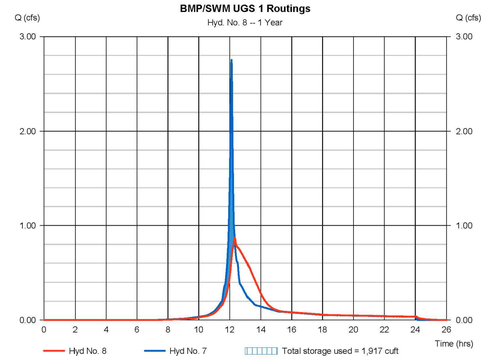
UGS 1 ROUTING – 1–YEAR

Hyd. No. 8

BMP/SWM UGS 1 Routings

Hydrograph type	= Reservoir	Peak discharge	= 0.869 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.32 hrs
Time interval	= 1 min	Hyd. volume	= 7,688 cuft
Inflow hyd. No.	= 7 - Total to BMP/SWM UGS 1	Max. Elevation	= 392.20 ft
Reservoir name	= Townhome BMP/SWM	Max. Storage	= 1,917 cuft

Storage Indication method used.

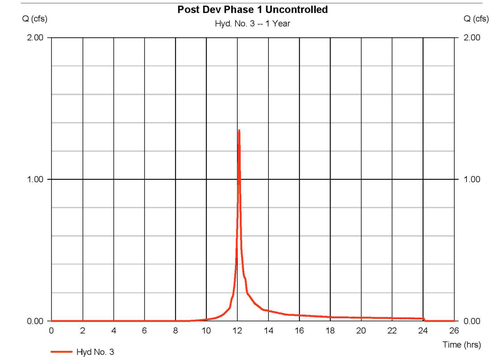


PHASE 1 POST DEV. UNCONTROLLED – 1–YEAR

Hyd. No. 3

Post Dev Phase 1 Uncontrolled

Hydrograph type	= SCS Runoff	Peak discharge	= 1.351 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 3,722 cuft
Drainage area	= 0.780 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.62 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484

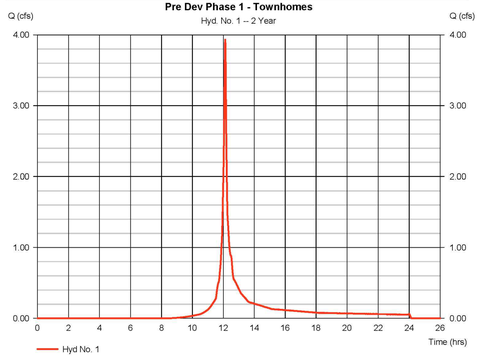


PHASE 1 PRE DEV. ONSITE – 2–YEAR

Hyd. No. 1

Pre Dev Phase 1 - Townhomes

Hydrograph type	= SCS Runoff	Peak discharge	= 3.940 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 10,855 cuft
Drainage area	= 1.830 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.17 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484

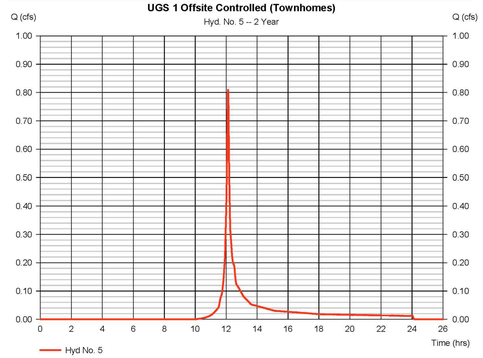


PRE DEV OFFSITE BYPASS/UGS 1 OFFSITE CONTROLLED 2–YEAR

Hyd. No. 5

UGS 1 Offsite Controlled (Townhomes)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.811 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 2,249 cuft
Drainage area	= 0.480 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.17 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484



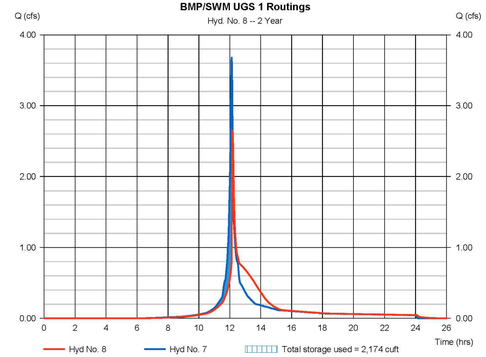
UGS 1 ROUTING – 2–YEAR

Hyd. No. 8

BMP/SWM UGS 1 Routings

Hydrograph type	= Reservoir	Peak discharge	= 2.658 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.18 hrs
Time interval	= 1 min	Hyd. volume	= 10,321 cuft
Inflow hyd. No.	= 7 - Total to BMP/SWM UGS 1	Max. Elevation	= 394.74 ft
Reservoir name	= Townhome BMP/SWM	Max. Storage	= 2,174 cuft

Storage Indication method used.

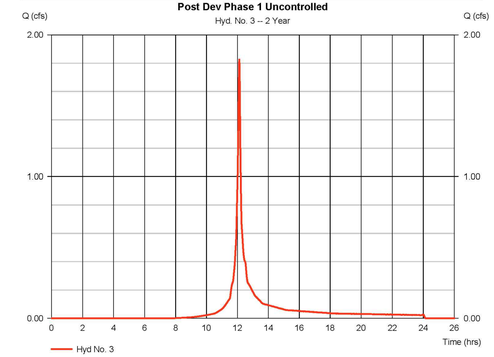


PHASE 1 POST DEV. UNCONTROLLED – 2–YEAR

Hyd. No. 3

Post Dev Phase 1 Uncontrolled

Hydrograph type	= SCS Runoff	Peak discharge	= 1.830 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 5,057 cuft
Drainage area	= 0.780 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.17 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484

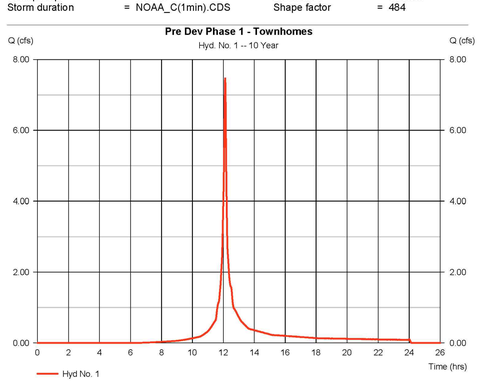


PHASE 1 PRE DEV. ONSITE – 10–YEAR

Hyd. No. 1

Pre Dev Phase 1 - Townhomes

Hydrograph type	= SCS Runoff	Peak discharge	= 7.483 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 20,940 cuft
Drainage area	= 1.830 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.87 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484

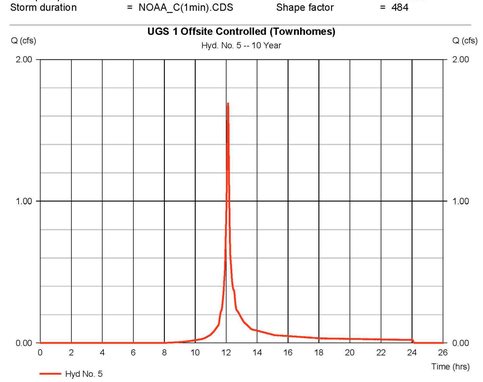


PRE DEV OFFSITE BYPASS/UGS 1 OFFSITE CONTROLLED 10–YEAR

Hyd. No. 5

UGS 1 Offsite Controlled (Townhomes)

Hydrograph type	= SCS Runoff	Peak discharge	= 1.693 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 4,675 cuft
Drainage area	= 0.480 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.87 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484



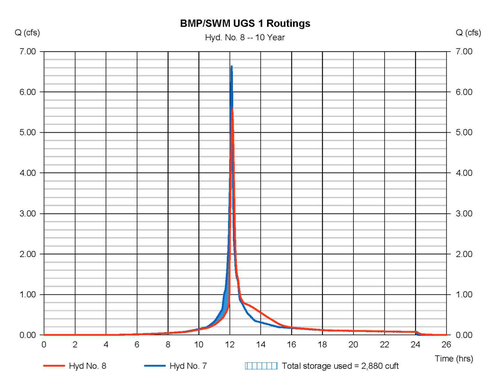
UGS 1 ROUTING – 10–YEAR

Hyd. No. 8

BMP/SWM UGS 1 Routings

Hydrograph type	= Reservoir	Peak discharge	= 5.522 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 1 min	Hyd. volume	= 19,010 cuft
Inflow hyd. No.	= 7 - Total to BMP/SWM UGS 1	Max. Elevation	= 394.42 ft
Reservoir name	= Townhome BMP/SWM	Max. Storage	= 2,880 cuft

Storage Indication method used.

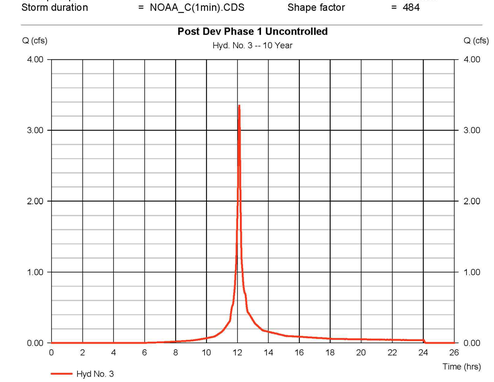


PHASE 1 POST DEV. UNCONTROLLED – 10–YEAR

Hyd. No. 3

Post Dev Phase 1 Uncontrolled

Hydrograph type	= SCS Runoff	Peak discharge	= 3.359 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 9,484 cuft
Drainage area	= 0.780 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.87 in	Distribution	= Custom
Storm duration	= NOAA_C(1min).CDS	Shape factor	= 484



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PHASE 1 HYDROGRAPHS

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CITY OF FAIRFAX, VIRGINIA

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
09/28/2022
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SHEET 48 OF 53

PRJ NO: 2017-2570

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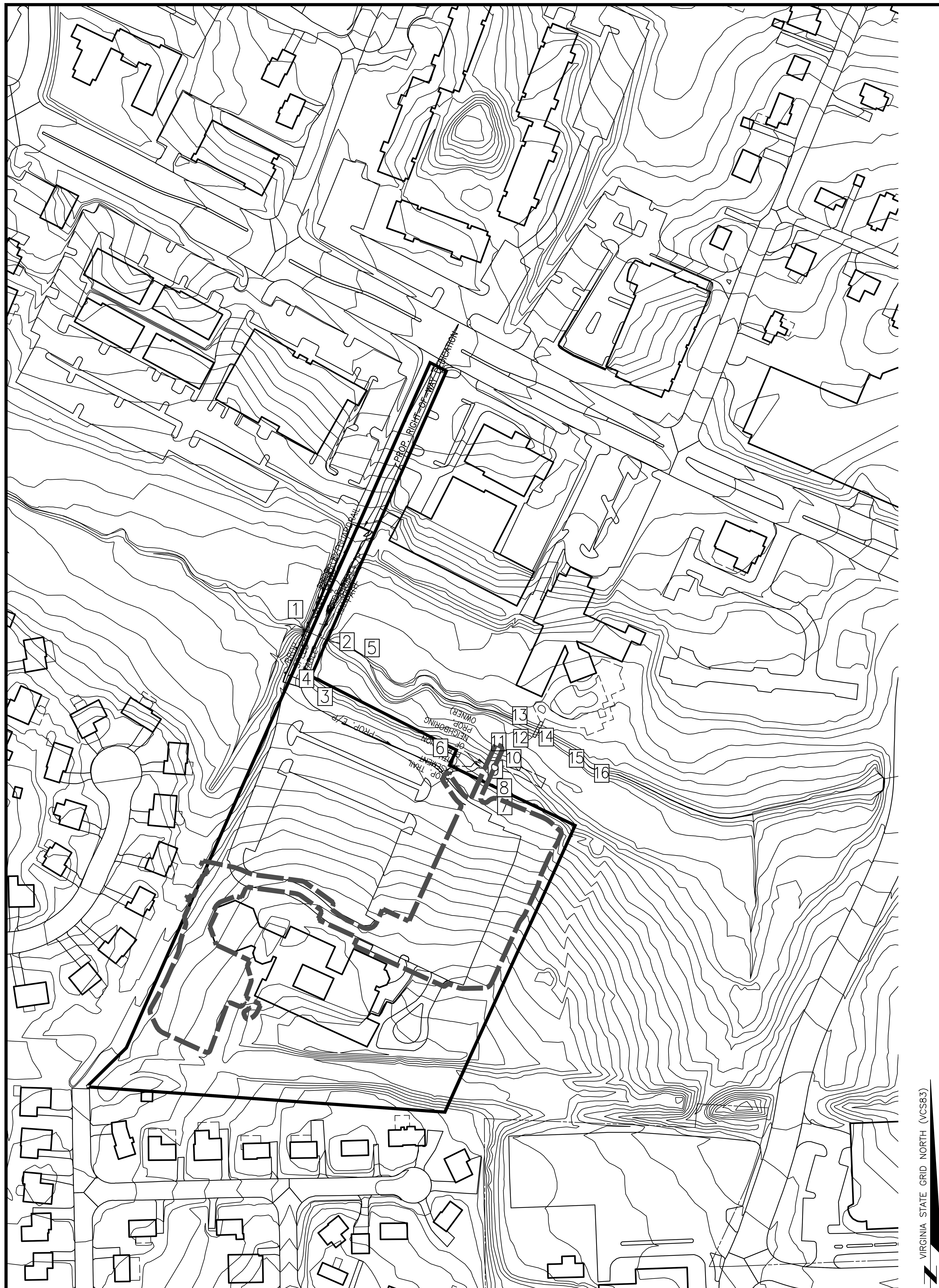
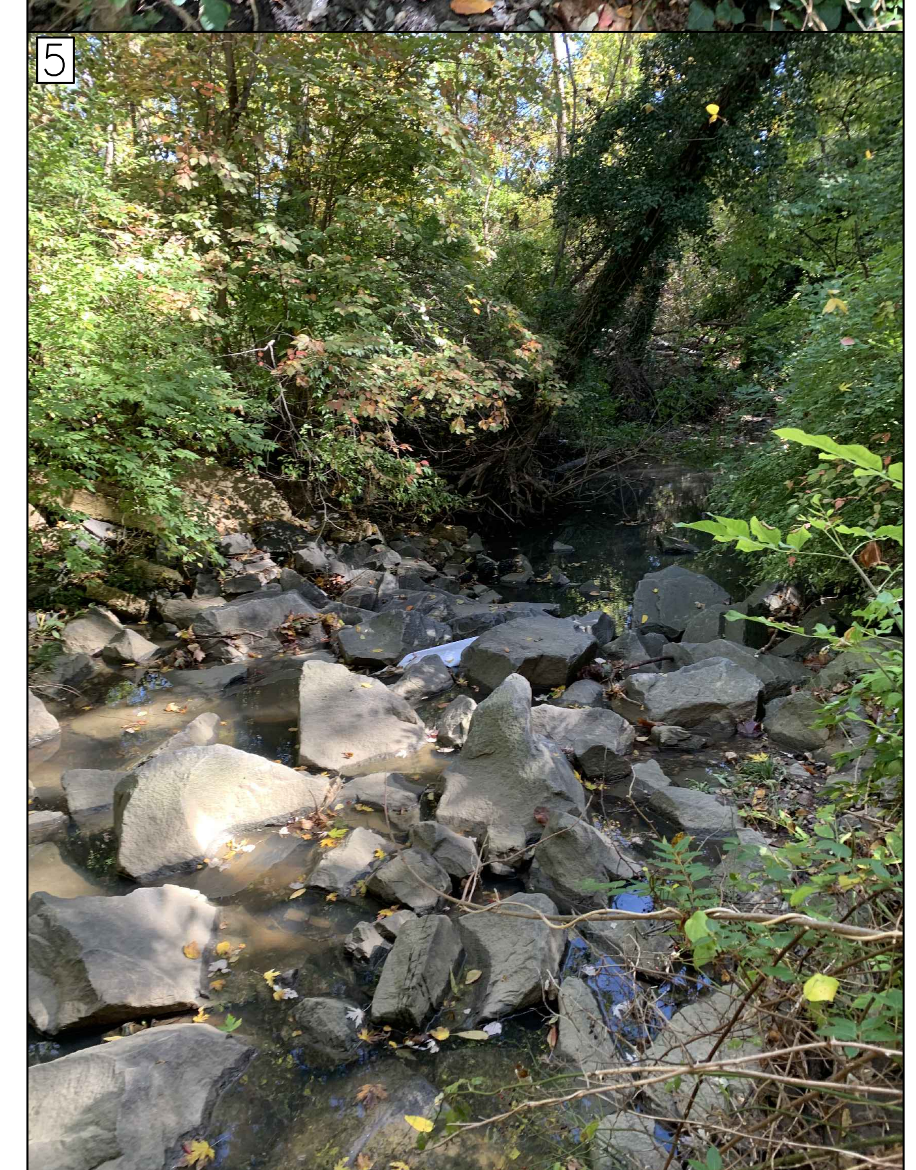


OUTFALL MAP
SCALE: 1" = 100'

GRAPHIC SCALE
100 0 50 100 200
SCALE: 1" = 100'



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OUTFALL MAP & PHOTOS

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COMMONWEALTH OF VIRGINIA
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DESIGN GMP	DRAFT GMP
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DATE JAN. 2021	
SCALE HORIZ: 1"=100' VERT: ---	
SHEET 49	OF 53
PRJ NO: 2017-2570	
TYPE: MDP	

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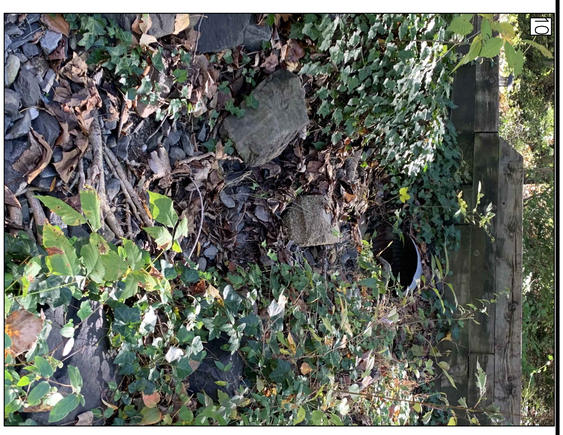

OUTFALL PHOTOS

FAIRFAX PRESBYTERIAN CHURCH

CITY OF FAIRFAX, VIRGINIA

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
Lic. No. 038937
09/28/2022
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	REVISIONS			

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SHEET 50 OF 53

PRJ. NO: 2017-2570
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REAR ELEVATION (LOTS 1–5)

SCALE : 1/8" = 1'-0"

FRONT ELEVATION (LOTS 1–5)

SCALE : 1/8" = 1'-0"

FRONT ELEVATION (LOTS 6–10)

SCALE : 1/8" = 1'-0"

REAR ELEVATION (LOTS 6–10)

SCALE : 1/8" = 1'-0"

NOTE : THESE DRAWINGS ARE CONCEPTUAL AND INTENDED TO ILLUSTRATE THE GENERAL CHARACTER OF THE BUILDING, QUALITY OF CONSTRUCTION, AND QUALITY OF MATERIALS. THESE DRAWINGS 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 TIME OF SITE PLAN SUBMISSION.

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ARCHITECTURAL ELEVATIONS

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COMMONWEALTH OF VIRGINIA
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	REVISIONS			

DESIGN KJV	DRAFT KJV
APPROVED HMF	
DATE JAN. 2021	SCALE HORIZ: 1/8" = 1' VER: 1/8" = 1'

SHEET	OF
51	53

PRJ NO: 2017-2570

TYPE: MDP

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WEST ELEVATION
SCALE : 1/8" = 1'-0"

EAST ELEVATION
SCALE : 1/8" = 1'-0"

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ARCHITECTURAL ELEVATIONS

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DESIGN KJV / DRAFT KJV	
APPROVED HMF	DATE JAN. 2021
SCALE HORIZ: 1/8" = 1' VERT: 1/8" = 1'	

SHEET	OF
52	53

PRJ NO: 2017-2570
TYPE: MDP

TYPICAL PHASE TWO/THREE STREET LIGHT & POLE

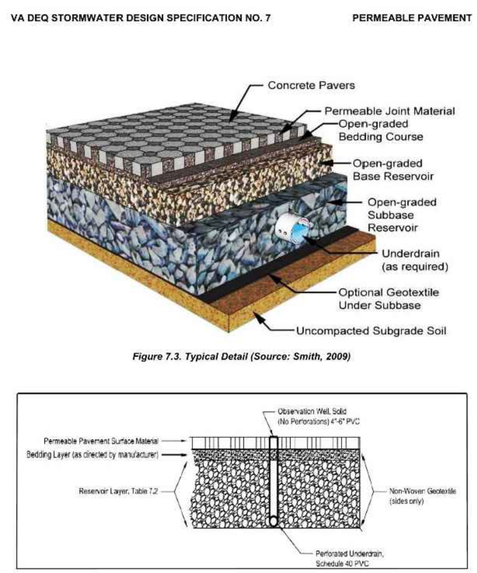
OR EQUIVALENT

TYPICAL PERGOLA

OR EQUIVALENT

TYPICAL TRANSITIONAL & REAR YARD PRIVACY FENCE

OR EQUIVALENT



TYPICAL PERMEABLE PAVEMENT

OR EQUIVALENT

TYPICAL STAIR & PERGOLA LIGHTING

OR EQUIVALENT

TYPICAL SOLAR PATHWAY LIGHTING

OR EQUIVALENT

TYPICAL BIKE RACK

OR EQUIVALENT

TYPICAL BENCH

OR EQUIVALENT

TYPICAL FRONT DOOR LIGHT

OR EQUIVALENT

TYPICAL BACK DOOR LIGHT

OR EQUIVALENT

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SITE DETAILS

FAIRFAX PRESBYTERIAN CHURCH

CITY OF FAIRFAX, VIRGINIA

COMMONWEALTH OF VIRGINIA
BRIAN R. THOMAS
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NO.	DESCRIPTION	REVIEW BY	APPROVD	DATE
	REVISIONS			

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APPROVED HMF	
DATE JAN. 2021	
SCALE HORIZ: --- VERT: ---	

SHEET 53 OF 53

PRJ NO: 2017-2570

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