STORMWATER SITE STATISTICS

	EXISTING	PROPOSED
TOTAL DISTURBED AREA (AC)	---	4.60
TOTAL SITE AREA (AC)	4.60	4.60
IMPERVIOUS AREA (AC)	0.43	2.65
MANAGED TURF AREA (AC)	4.17	1.95
OPEN SPACE/FOREST (AC)	0.00	0.00
RIGHT OF WAY DISTURBANCE (SF)	---	---
KARST PRESENT (Y/N)	UNDETERMINED	UNDETERMINED

USE OF NUTRIENT BANK CREDITS FOR BMP

	BMP #1	BMP #2
BMP TYPE	NUTRIENT BANK CREDIT	
NAME OF AUTHORIZED NUTRIENT BANK	HAWKINS FOREST NUTRIENT BANK	FACILITY
REQUIRED PHOSOPHORUS TO BE REMOVED (LB/YR)	4.26 LBS	
AMOUNT OF PHOSPHORUS CREDIT PURCHASED (LB/YR)	4.26 LBS	
TECHNICAL REQUIREMENTS MET (PART IIB OR IIC)	PART IIB	
TOTAL AREA TREATED (AC)	4.60 AC.	
IMPERVIOUS AREA TREATED BY BMP (AC)	2.65 AC.	
MANAGED TURF AREA TREATED BY BMP (AC)	1.95 AC.	
OPEN SPACE / FOREST AREA TREATED BY BMP (AC)	0.00 AC.	
SURFACE AREA OF BMP (AC)	N/A	
STORAGE VOLUME OF BMP (AC-FT)	N/A	
QUALITY, QUANTITY, OR BOTH?	QUALITY	
TMDL ADDRESSED? (PHOSOPHORUS, BACTERIA, SEDIMENT, ETC)	PHOSPHORUS	
NAME OF RECEIVING WATER (PROJECT SITE)	CARVIN CREEK	
HYDROLOGIC UNIT CODE FOR PROJECT SITE (ALPHANUMERIC CODE RU14, ETC)	RU 12	

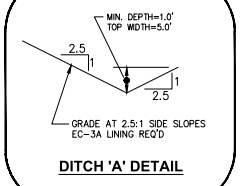
ROOF LEADERS NOTE:

ALL VERTICAL BUILDING DOWNSPOUTS FROM ALL BUILDINGS SHALL BE TRANSITIONED TO UNDERGROUND HORIZONTAL PIPING IN SCH. 40 PVC PER BLDG CODE. MINIMUM SLOPE OF 2% W.I. THE CONVEYANCE SYSTEM. ALL HORIZONTAL ROOFLEADER PIPE SHALL TIE DIRECTLY TO AN UNDERGROUND STORM SEWER SYSTEM/INLET FOR CONVEYANCE.

STORM STRUCTURE SCHEDULE:

1. VDOT ST'D DI-1 TOP:1102.5 INV OUT:1099.0
2. 60 LF OF 10" SCH.-40 PVC PIPE AT 1.99%
3. VDOT ST'D DI-1 TOP:1102.5 INV IN:1097.8 INV. OUT:1097.7
4. 79 LF OF 10" SCH.-40 PVC PIPE AT 2.0%
5. VDOT STD. DI-1 TOP:1102.5 INV. IN:1097.95 (#27) INV. IN:1096.12 (#4) INV OUT:1096.02
6. 24 LF OF 15" TYPE S HDPE PIPE AT 1.98%
7. VDOT STD. MH-2 TOP:1103.62 INV. IN: 1097.5 (#33) INV IN:1095.54 (#6) INV OUT:1095.44
8. 180 LF OF 15" TYPE S HDPE PIPE AT 4.86%
9. VDOT ST'D MH-2 (6' MH) TOP:1092.69 INV IN:1088.0 (#17) INV IN:1086.69 (#8) INV IN:1084.8 (#31) INV. OUT:1084.7
10. 138 LF OF 15" TYPE S HDPE PIPE AT 1.66%
11. VDOT ST'D DI-3C (6' THROAT) TOP:1087.50 INV IN:1082.4 (#10) INV IN:1082.4 (#25) INV. OUT:1082.3
12. 87 LF OF 15" TYPE S HDPE PIPE AT 8.98%
12A. VDOT ST'D MH-2 TOP:1079.92 INV IN:1074.5 INV OUT:1074.4
12B. 17 LF OF 18" TYPE S HDPE PIPE AT 2.33%
13. VDOT ST'D ES-1 INV OUT:1074.0
14. VDOT ST'D DI-3C (12' THROAT) TOP:1099.75 INV. OUT:1096.10
15. 103 LF OF 15" TYPE S HDPE PIPE AT 2.03%
16. VDOT STD. MH-2 TOP:1100.32 INV. IN: 1094.02 INV OUT:1093.92
17. 148 LF OF 15" TYPE S HDPE PIPE AT 3.99%
18. CONCRETE HEADWALL TOP: 1088.5 INV. OF PIPE:1086.0
18A. 55 LF OF 15" TYPE S HDPE PIPE AT 1.81%
19. VDOT ST'D ES-1 INV. OUT:1085.0
20. VDOT ST'D DI-3C (6' THROAT) TOP:1099.02 INV. OUT:1095.06
21. 183 LF OF 15" TYPE S HDPE PIPE AT 2.03%
22. VDOT ST'D DI-3C (6' THROAT) TOP:1099.50 INV. IN: 1091.36 INV. OUT:1088.26
23. 43 LF OF 15" TYPE S HDPE PIPE AT 6.68%
24. VDOT STD. DI-3C (10' THROAT) TOP:1088.43 INV OUT:1084.40
25. 100 LF OF 15" TYPE S HDPE PIPE AT 2.0%
26. VDOT ST'D DI-3C 6' THROAT TOP:1104.70 INV. OUT:1098.70
27. 14 LF OF 15" TYPE S HDPE PIPE AT 5.52%
28. VDOT ST'D DI-1 TOP:1090.0 INV OUT:1087.0
29. 80 LF OF 10" SCH.-40 PVC PIPE AT 2.0%
30. VDOT ST'D DI-1 TOP:1090.0 INV IN:1085.4(#23) INV IN:1085.4 (#29) INV. OUT:1085.3
31. 25 LF OF 15" TYPE S HDPE PIPE AT 2.03%
32. VDOT ST'D DI-1 TOP:1102.0 INV OUT:1098.0
33. 30 LF OF 10" SCH.-40 PVC AT 1.65%
34. VDOT ST'D 48" MH W/TRASH RACK & CONC. SUMP TOP:1077.8 INV :1076.4 ((2)26"wx7"h ORIFICES) INV IN:1072.0 (6.2" ORIFICE) INV. OUT:1072.0 BOTTOM OF STR.:1070.0
35. 57 LF OF 24" GASKETED RCP PIPE AT 1.32%
36. VDOT ST'D ES-1 INV OUT:1071.25

NOTES:
1. VDOT STD IS-1 INLET SHAPING SHALL BE PROVIDED IN ALL PROPOSED STRUCTURES (SEE DETAIL C13)
2. NON-SHRINK GROUT SHALL BE USED FOR ALL STORM SEWER PIPE CONNECTIONS.
3. #57 STONE NOT ALLOWABLE FOR STR./PIPE BACKFILL PER ROANOKE COUNTY.



DITCH 'A' DETAIL

SANITARY SEWER SCHEDULE:

- (B) (AA) 128 LF OF 8" PVC OF SDR-35 AT 7.87% (SEE CONNECTION DETAILS ON SHEET C10 PROFILE)
- (AA) STANDARD S.S. MH (PUBLIC W.V.W.A. MANHOLE) TOP=1084.17 INV. IN=1077.10 INV.=1077.00
- (AA) (BB) 112 LF OF 8" PVC OF SDR-35 AT 5.18%
- (BB) STANDARD S.S. MH (PRIVATE MANHOLE) TOP=1090.48 INV. IN=1083.0 INV. OUT=1082.9
- (BB) (CC) 69 LF OF 8" PVC SDR-35 AT 3.24%
- (CC) STANDARD S.S. MH (PRIVATE MANHOLE) TOP=1090.63 INV. IN=1085.35 INV. OUT=1085.25
- (CC) (DD) 79 LF OF 8" PVC SDR-35 AT 7.15%
- (DD) STANDARD S.S. MH (PRIVATE MANHOLE) TOP=1100.36 INV. IN=1091.1 INV. OUT=1091.0
- (DD) (EE) 231 LF OF 8" PVC SDR-35 AT 1.8%
- (EE) STANDARD S.S. MH (PRIVATE MANHOLE) TOP=1100.04 INV. IN=1095.35 INV. OUT=1095.25
- (EE) (FF) 52 LF OF 8" PVC SDR-35 AT 5.17%
- (FF) STANDARD S.S. CLEANOUT (PRIVATE) TOP=1102.63 INV. OUT=1098.04

(G.C. TO CONFIRM & COORDINATE ALL TIE IN LOCATIONS W/M.E.P. & ARCH. DRAWINGS PRIOR TO ANY INTERIOR OR EXTERIOR S.S. PIPE BEING INSTALLED. NOTIFY ENGINEER IMMEDIATELY IF DISCREPANCIES ARE DISCOVERED PRIOR TO ANY CONSTRUCTION)

GRADING PLAN NOTES:

1. NO CONSTRUCTION/FIELD CHANGES WITHOUT THE APPROVAL OF THE CONSULTING ENGINEER, ROANOKE COUNTY, VDOT, AND/OR WVWA.
2. ANY NEW ALIGNMENTS, CHANGES IN GRADES, ALTERNATIVE PIPE SIZE OR MANHOLES OR ESC MEASURES WILL REQUIRE A NEW SET OF PLANS STAMPED BY THE CONSULTING ENGINEER.
3. G.C. SHALL ENSURE POSITIVE DRAINAGE AWAY FROM PROPOSED BUILDING.

30 0 30 60 90

SCALE: 1" = 30'

LINE TABLE

LINE	BEARING	DISTANCE
L1	N27°17'05"E	50.00'
L2	S27°16'42"W	50.18'
L3	N89°29'31"W	56.56'
L4	S09°41'57"W	84.90'
L5	N39°23'01"W	6.47'
L6	S50°36'59"W	46.43'
L7	N86°05'40"W	37.89'
L8	N16°51'59"E	42.81'
L9	N73°06'22"W	50.00'

CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD BEARING	CHORD LENGTH	DELTA ANGLE	TANGENT
C1	1603.50'	273.19'	N21°46'29"E	272.86'	9°45'42"	136.93'
C2	1603.50'	26.90'	N27°08'10"E	26.90'	0°57'40"	13.45'

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CHRISTOPHER P. BURNS
Lic. No.047338
12/2/16
PROFESSIONAL ENGINEER

VILLAGE GREEN APARTMENTS
6191 CAREFREE LANE
GRADING PLAN
HOLLINS MAGISTERIAL DISTRICT
COUNTY OF ROANOKE, VIRGINIA

DRAWN BY BTC
DESIGNED BY BTC
CHECKED BY CPB
DATE 10/5/2016
SCALE 1"=30'
REVISIONS: 12/2/2016

SHEET NO. C4
JOB NO. 04160011.00

APPROVED, 5/12/2020