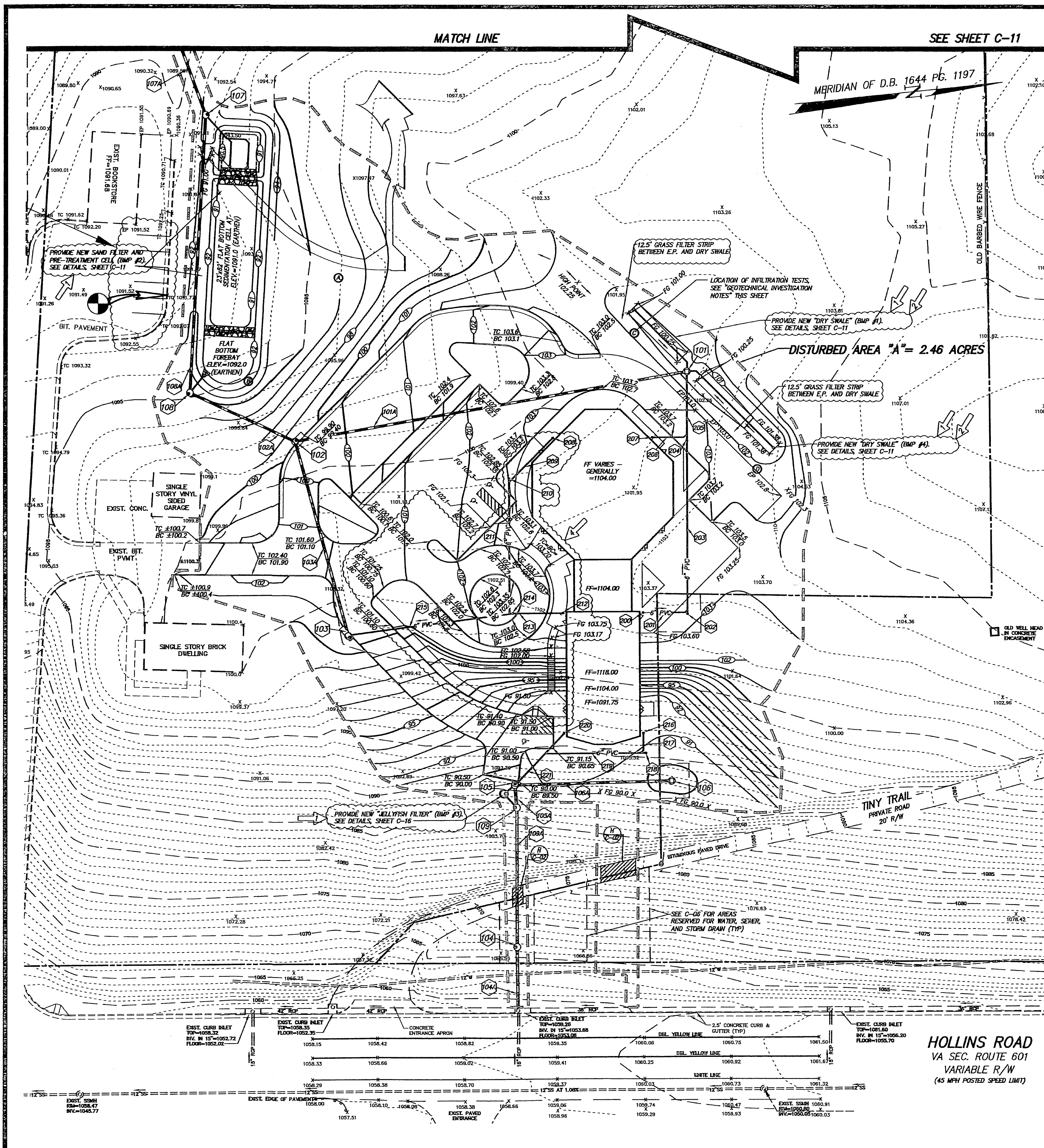




- ### NEW STORM DRAIN
- MAJOR STORM DRAIN SYSTEMS**
- SEE SHEET C-13 FOR NEW MAJOR STORM DRAIN SYSTEMS.
 - ALL NEW STORM STRUCTURES SHALL BE PRE-CAST CONCRETE. MATERIALS, FABRICATION AND INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH VDOT STANDARDS AND SPECIFICATIONS. NEW STORM DRAIN STRUCTURES SHALL RECEIVE VDOT STD. 15-1 INLET SHAPING.
 - CONCRETE STORM DRAIN PIPE SHALL BE MINIMUM VDOT CLASS III CONCRETE WITH GASKETED WATER-TIGHT JOINTS IN ACCORDANCE WITH ASTM C443 (GEOLOGY INDICATIVE OF KARST).
 - ALL PIPE SHALL BE BEDDED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, OR AT A MINIMUM IN ACCORDANCE WITH VDOT STANDARD PB-1 PIPE BEDDING DETAILS.
- ROOF COLLECTOR SYSTEM**
- SEE BUILDING PLANS FOR DOWNSPOUT INSTALLATION, LOCATIONS SHOWN HEREIN ARE APPROXIMATE.
 - SEE PLUMBING SHEETS FOR DOWNSPOUT BOOT / CLEANOUT ASSEMBLIES. IN THE EVENT THE BUILDING PLANS DO NOT ADDRESS THIS ITEM, PROVIDE CAST IRON BOOT / CLEANOUT ASSEMBLY SIZED FOR NEW DOWNSPOUTS. PROVIDE ADAPTERS NECESSARY TO TRANSITION FROM CAST IRON BOOT TO SD-35 UNDERGROUND PIPING.
 - ALL NEW ROOF DRAIN COLLECTOR PIPING, CLEANOUTS, ETC. SHALL BE SD-35 PVC PIPE. CLEANOUTS SHALL BE THE SAME DIAMETER AS THE ATTACHED CARRIER PIPES.
 - ALL CLEANOUTS SHALL BE INSTALLED WITH TRAFFIC-BEARING FRAMES AND COVERS.
- | NO. | PROVIDE NEW CLEANOUT, INV.=1100.29 | NO. | PROVIDE NEW CLEANOUT, INV.=1088.41 |
|-----|---|-----|---|
| 200 | PROVIDE 25'-6" AT 1.04% | 208 | PROVIDE 30'-6" AT 1.04% |
| 201 | PROVIDE 25'-6" AT 1.04% | 209 | PROVIDE 11'-6" AT 1.04% |
| 202 | PROVIDE NEW CLEANOUT, INV.=1100.64 | 210 | PROVIDE NEW CLEANOUT, INV.=1089.92 |
| 203 | PROVIDE 100'-6" AT 1.04% | 211 | PROVIDE 75'-6" AT 1.04% |
| 204 | PROVIDE NEW CLEANOUT, INV.=1099.60 | 212 | PROVIDE NEW CLEANOUT, INV.=1100.64 |
| 205 | PROVIDE 38'-6" AT 6.84%, INV. OUT=1097.00 | 213 | PROVIDE 30'-6" AT 5.00% |
| 206 | PROVIDE 10'-6" AT 1.04%, INV. OUT=1099.33 | 214 | PROVIDE NEW CLEANOUT, INV.=1099.14 |
| 207 | PROVIDE NEW CLEANOUT, INV.=1099.43 | 215 | PROVIDE 95'-6" AT 2.12%, INV. OUT=1097.13 |
| | | 216 | PROVIDE NEW CLEANOUT, INV.=1088.41 |
| | | 217 | PROVIDE 11'-6" AT 1.04% |
| | | 218 | PROVIDE NEW CLEANOUT, INV.=1088.30 |
| | | 219 | PROVIDE 58'-6" AT 2.16%, INV. OUT=1087.05 |
| | | 220 | PROVIDE NEW CLEANOUT, INV.=1087.75 |
| | | 221 | PROVIDE 40'-6" AT 4.38%, INV. OUT=1086.00 |

STORMWATER SITE STATISTICS

	EXISTING	PROPOSED
TOTAL DISTURBED AREA (AC)	0	2.73
TOTAL SITE AREA (AC)	2.73	2.73
IMPERVIOUS AREA (AC)	0	0.89
MANAGED TURF AREA (AC)	2.73	1.57
OPEN SPACE / FOREST AREA (AC)	0	0.27
RIGHT OF WAY DISTURBANCE (SF)	0	600
KARST PRESENT (Y/N)	Y	Y

NEW BMP INFORMATION

BMP TYPE	BMP #1	BMP #2	BMP #3	BMP #4	BMP #5
DRY SWALE	1.71	0.44	0.18	0.01	0.01
SAND FILTER	0.06	0.74	0.15	0.07	0.01
JELLYFISH FILTER	0.08	0.97	0.29	0.11	0.01
DRY SWALE	0	0	0	0	0
EXIST. DRY POND	0.01	0.01	N/A	0.01	0.01
TOTAL AREA TREATED (AC)	0.01	0.06	N/A	0.01	0.01
IMPERVIOUS AREA TREATED BY BMP (AC)	0.01	0.06	N/A	0.01	0.01
MANAGED TURF AREA TREATED BY BMP (AC)	0.01	0.06	N/A	0.01	0.01
OPEN SPACE / FOREST AREA TREATED BY BMP (AC)	0.01	0.06	N/A	0.01	0.01
SURFACE AREA OF BMP (AC)	0.01	0.06	N/A	0.01	0.01
STORAGE VOLUME OF BMP (AC-FT)	0.01	0.06	N/A	0.01	0.01
MAXIMUM AVERAGE DEPTH (FT)	D10=0.10'	Dmax=0.50'	N/A	D10=0.10'	D10=0.10'
QUALITY, QUANTITY, OR BOTH?	BOTH	QUALITY	QUALITY	BOTH	QUANTITY
TOTAL ADDRESSSES (PHOSPHOROUS, BACTERIA, SEDIMENT, ETC.)	PH	PH	PH	PH	PH
LATITUDE (DECIMAL DEGREES XX.XXXX)	N 37.3332	N 37.3325	N 37.3329	N 37.3332	N 37.3322
LONGITUDE (DECIMAL DEGREES -XX.XXXX)	W 79.9279	W 79.9285	W 79.9272	W 79.9279	W 79.9291
NAME OF RECEIVING WATER	Buffalo Creek-Thinker Creek				
HYDROLOGIC UNIT CODE (ALPHANUMERIC CODE RU14, ETC.)	RU11				

GENERAL GRADING REQUIREMENTS

ALL FINISH GRADE CONTOURS AND SPOT ELEVATIONS SHOWN HEREIN ARE TO THE UPPER ELEVATION OF THE SPECIFIC ELEMENT. THE CONTRACTOR SHALL ACCOUNT FOR THE THICKNESS OF THE FINISH SURFACE (TOPSOIL, PAVEMENT, LANDSCAPE MULCH, ETC.) IN GRADING OF THE SITE.

SITE GRADING NOTES

SUBGRADE BENEATH NEW OR FUTURE BUILDINGS, CONCRETE PADS, FILL SLOPES OR PAVEMENT SHALL BE COMPACTED TO A MINIMUM OF 95% OF ASTM D698, STANDARD PROCTOR. FILL PLACED IN GRASS OR LANDSCAPED AREAS SHALL BE COMPACTED TO A MINIMUM OF 90% OF ASTM D-698, STANDARD PROCTOR.

ALL DENuded AREAS SHALL BE PERMANENTLY SEEDED WITHIN SEVEN (7) DAYS OF REACHING FINAL GRADE. TEMPORARY SEEDING SHALL BE APPLIED, WITHIN SEVEN (7) DAYS, TO DENuded AREAS NOT AT FINAL GRADE BUT THAT WILL REMAIN UNDISTURBED FOR MORE THAN 14 DAYS.

PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON ALL DENuded AREAS NOT OTHERWISE PERMANENTLY STABILIZED.

A MINIMUM OF 6" OF TOPSOIL SHALL BE PLACED IN ALL AREAS TO RECEIVE PERMANENT SEEDING, EXCEPT AREAS OF "DRY SWALES", WHICH REQUIRE 3" (SEE SHEET C-11).

FINISH GRADES WHERE NEW CONSTRUCTION MEETS EXISTING

WHERE NEW PAVEMENT, CURBING, CURBS & GUTTER AND SIDEWALK MEET EXISTING, THE CONTRACTOR SHALL MATCH EXISTING.

TRANSITION CURB AND GUTTER SECTION OVER A 6' LENGTH IF PROFILE OF EXISTING CURBING / GUTTER SECTIONS DIFFER FROM PROPOSED.

WHERE MATCHING NEW PAVEMENT TO EXISTING, THE CONTRACTOR SHALL CAREFULLY SAW-CUT THE WEAR COURSE ONLY, ONE FOOT BACK FROM THE FULL-DEPTH SAW-CUT, TO ADD STRUCTURAL INTEGRITY TO THE JOINT. PLACE NEW BASE STONE AND COMPACT CONCURRENTLY WITH ONE-FOOT STRIP OF EXISTING BASE STONE TO INSURE BONDING. PERFORM SIMILAR MEASURES WITH NEW/EXISTING BITUMINOUS BASE. PLACE FINAL WEAR COURSE, TAKING CARE TO "FINCH" THE JOINT TO INSURE AS SEAMLESS AN INSTALLATION AS POSSIBLE.

GEOTECHNICAL INVESTIGATION NOTES

A SUBSURFACE INVESTIGATION WAS PREPARED BY GEOTECHNICS, INC. OF ROANOKE, VIRGINIA (REF: GEOTECHNICS COMMISSION NO. 4005, DATED 22 AUGUST 2014). THE CONTRACTOR IS REQUIRED TO OBTAIN A COPY OF THIS REPORT AND FOLLOW RECOMMENDATIONS, PARTICULARLY RELATIVE TO ALLOWABLE RE-USE OF EXISTING SOILS IN AREAS OF FOUNDATION BACKFILL. IMPORT MATERIAL TO BE USED FOR BUILDING BACKFILL SHALL BE TESTED BY GEOTECHNICS, INC. PRIOR TO IMPORT. TESTING BY CONTRACTOR.

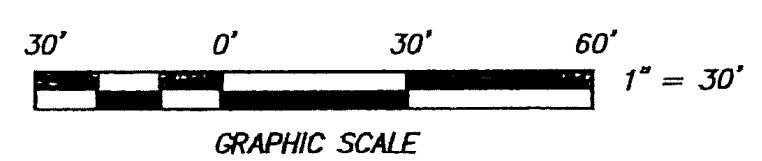
FOUR INFILTRATION TESTS WERE PERFORMED ON-SITE BY GEOTECHNICS, INC. THE RATES OF INFILTRATION WERE DETERMINED TO BE:

① - LOCATION A = 1.25 IN/HR	③ - LOCATION C = 0.75 IN/HR
② - LOCATION B = 1.13 IN/HR	④ - LOCATION D = 1.00 IN/HR

SEE SHEET C-04 FOR NEW ACCESS EASEMENTS AND NEW AREAS RESERVED FOR STORMWATER MANAGEMENT

BENCHMARK:
CHISELED SQUARE ON TOP BACK OF CURB
ELEVATION = 1091.77 (DATUM OF NAVD-88)

REVISED OCTOBER 01, 2019: FIELD REV.-FRONT DROP-OFF - CLW
REVISED MARCH 26, 2015 PER R.R. CO. / VDOT / VVWA REVIEW - CLW
REVISED FEBRUARY 16, 2015 PER R.R. CO. / VDOT / VVWA REVIEW - CLW
REVISED DECEMBER 11, 2014 PER R.R. CO. / VDOT / VVWA REVIEW - CLW



COMMONWEALTH OF VIRGINIA
CORBIN L. WHITE
License No. 23843
10-01-2019
PROFESSIONAL ENGINEER

GRADING AND STORM DRAINAGE PLAN
FOR
**SEVENTH DAY ADVENTIST REFORM
MOVEMENT GENERAL CONFERENCE**
SHOWING CONSTRUCTION OF A NEW CHAPEL FACILITY AND
ASSOCIATED PARKING
SITUATE 5232 / 5248 HOLLINS ROAD, NE
HOLLINS MAGISTRAL DISTRICT
COUNTY OF ROANOKE, VIRGINIA

CWA
CALDWELL WHITE ASSOCIATES
ENGINEERS / SURVEYORS / PLANNERS
4205 MELROSE AVENUE
P.O. BOX 6260
ROANOKE, VIRGINIA 24017-0260
(540) 368-3400
FAX: (540) 368-8702

Designed: C.L. White
Drawn: C.L. White
Checked: C.L. White
Date: October 03, 2014
Scale: 1" = 30'
Tax Parcel: 38-05-01-08-00
Field Book: C1-B
U.G. No.: 14-0246

R.K. Atkinson
ROANOKE COUNTY APPROVED
PR#1
11/5/2019