



New River Valley

Harrisonburg RESIDENTIAL LAND DEVELOPMENT ENGINEERII SITE DEVELOPMENT ENGINEERING

LAND USE PLANNING & ZONING LANDSCAPE ARCHITECTURE LAND SURVEYING ARCHITECTURE

STRUCTURAL ENGINEERING TRANSPORTATION ENGINEERING **ENVIRONMENTAL & SOIL SCIENCE** WETLAND DELINEATIONS & STREAM EVALUATIONS

Balzer and Associates, Inc

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FAX 540-772-8050

Ex 10/20/16 &

ONSTRUCTION DETAIL လ^{န္} WOOD\$

DRAWN BY DESIGNED BY CPB

CHECKED BY DATE

AS NOTED SCALE

REVISIONS:

8/1/2016 9/7/2016 10/20/2016

W.V.W.A. SERVICE LATERAL INFORMATION TOP OF MIN. SEWERABLE WATER F.F. ELEVATION **PRESSURE** 1205.5 1208.5 56 psi 1206.8 1209.8 1207.5 1210.5 56 psi 1208.2 1211.2 1211.8 57 psi 1208.8 1208.8 1211.8 1211.8 57 psi 1208.8 1208.2 1211.2 57 psi 1208.2

1. THE MIN. FLOOR ELEVATION IS BASED ON SEC. 2.4(E) OF THE WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS. LOT OWNERS REQUESTING A LOWER SERVICE ELEVATION WILL REQUIRE THE USE OF A PRIVATE SEWAGE PUMP FACILITY, INSTALLED AND MAINTAINED BY THE HOMEOWNER.

1206.6

1206.6

1204.2

1204.9

1212.6

28'

1209.6

1209.6

1207.2

1207.9

1215.6

56 psi

56 psi

58 psi

58 psi

54 psi

72

73

75

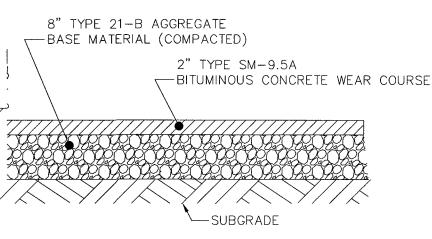
| STORMWATER S | RMWATER SITE STATISTICS | |
|-------------------------------|-------------------------|--------------|
| | EXISTING | PROPOSED |
| TOTAL DISTURBED AREA (AC) | | 5.40 |
| TOTAL SITE AREA (AC) | 21.4 | 21.4 |
| IMPERVIOUS AREA (AC) | 0.00 | 1.38 |
| MANAGED TURF AREA (AC) | 5.40 | 4.02 |
| OPEN SPACE / FOREST AREA (AC) | 0.00 | 0.00 |
| RIGHT OF WAY DISTURBANCE (SF) | | 3,000 |
| KARST PRESENT (Y/N) | UNDETERMINED | UNDETERMINED |

| EXISTING AS-BUILT BMP INFORMATION | | |
|---|-----------------------------------|------------|
| | BMP #1 | BMP #2 |
| BMP TYPE | EXT. DET. POND | |
| LEVEL OF TREATMENT (LEVEL 1 OR LEVEL 2) | | |
| TECHNICAL REQUIREMENTS MET (PART IIB OR IIC) | IIC | als divise |
| TOTAL AREA TREATED (AC) | 81.30 | |
| IMPERVIOUS AREA TREATED BY BMP (AC) | 16.13 | |
| MANAGED TURF AREA TREATED BY BMP (AC) | 65.17 | |
| OPEN SPACE / FOREST AREA TREATED BY BMP (AC) | 0.00 | |
| SURFACE AREA OF BMP (AC) | 0.592 | *** |
| STORAGE VOLUME OF BMP (AC-FT) | 3.976 | |
| MAXIMUM AVERAGE DEPTH (FT) | 7' | |
| QUALITY, QUANTITY, OR BOTH? | вотн | |
| TMDL ADDRESSED? (PHOSPHORUS, BACTERIA, SEDIMENT, ETC) | PHOSPHORUS | |
| LATITUDE (DECIMAL DEGREES XX.XXXX) | 37.2736 | |
| LONGITUDE (DECIMAL DEGREES -XX.XXXX) | -80.0869 | |
| NAME OF RECEIVING WATER | ROANOKE RIVER - SAWMILL HALLOW | |
| HYDROLOGIC UNIT CODE (ALPHANUMERIC CODE RU14, ETC) | RU09 | |

IMPERVIOUS BREAKDOWN OF PROPOSED LOTS

| PROPOSED USE | PROPOSED IMP. |
|--------------|---------------|
| OVERALL | 1.374 AC |
| ROAD | 0.540 AC |
| LOTS | 0.834 AC |
| LOT #63 | 0.047 AC |
| LOT #64 | 0.050 AC |
| LOT #65 | 0.054 AC |
| LOT #66 | 0.050 AC |
| LOT #67 | 0.049 AC |
| LOT #68 | 0.048 AC |
| LOT #69 | 0.067 AC |
| LOT #70 | 0.077 AC |
| LOT #71 | 0.086 AC |
| LOT #72 | 0.081 AC |
| LOT #73 | 0.076 AC |
| LOT #74 | 0.050 AC |
| LOT #75 | 0.050 AC |
| LOT #76 | 0.049 AC |

TYPICAL PAVEMENT SECTION



FOR AN EXCAVATED SUBGRADE: THE SUBGRADE AREA SHALL BE SCARIFIED TO A DEPTH OF 6 INCHES FOR A DISTANCE OF 2 FEET BEYOND THE PROPOSED EDGES OF THE PAVEMENT ON EACH SIDE. SUBGRADE MATERIAL SHALL BE COMPACTED AT OPTIMUM MOISTURE (±20%) TO THE REQUIREMENTS SET FORTH BY SEC. 305.03 OF THE VDOT ROAD AND BRIDGE **SPECIFICATIONS**

FOR AN IMPORTED SUBGRADE: THE TOP 6 INCHES OF THE FINISHED SUBGRADE SHALL BE COMPACTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE PROVISIONS.

THE PRELIMINARY PAVEMENT DESIGNS SHOWN ARE BASED ON A PREDICTED SUBGRADE CBR VALUE OF 7.0 AND A RESILIENCY FACTOR (RF) OF 2.0 AS SHOWN IN APPENDIX I OF THE "2000 VIRGINIA DEPARTMENT OF TRANSPORTATION PAVEMENT DESIGN GUIDE FOR SUBDIVISION AND SECONDARY ROADS". THE SUBGRADE SOIL IS TO BE TESTED BY AN INDEPENDENT LABORATORY AND THE RESULTS SUBMITTED TO THE VIRGINIA DEPARTMENT OF TRANSPORTATION PRIOR TO BASE CONSTRUCTION. SHOULD THE SUBGRADE CBR VALUE AND/OR THE RF VALUE BE LESS THAN THE PREDICTED VALUES, VDOT MAY REQUIRE AN INCREASE IN THE STRUCTURE BASED ON THE ACTUAL RESULTS. REFER TO THE SAME MANUAL FOR THE NUMBER AND LOCATIONS OF THE REQUIRED SOIL SAMPLES TO BE TESTED. ALL PAVEMENT DESIGNS SHALL BE SUBMITTED TO THE DEPARTMENT FOR REVIEW AND APPROVAL.

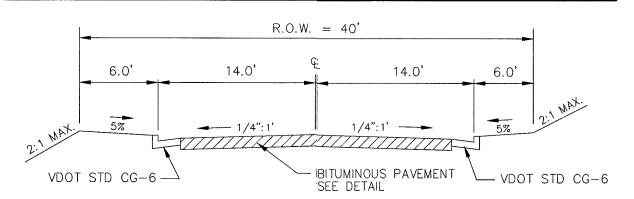
THE SUBGRADE SHALL BE APPROVED BY VDOT PRIOR TO PLACEMENT OF THE BASE. BASE SHALL BE APPROVED BY VDOT FOR DEPTH, TEMPLATE AND COMPACTION BEFORE SURFACE IS APPLIED. THE SUBBASE WILL NOT BE INSPECTED BY VDOT PRIOR TO RECEIVING THE CBR TESTS AND SOIL CLASSIFICATIONS. CONTACT VDOT SEVEN (7) DAYS PRIOR TO SCHEDULING PLACEMENT OF AGGREGATE BASE COURSE(S) FOR AN INSPECTION.

VDOT BACKFILLING AND COMPACTION: 1.) BACKFILL MATERIAL SHALL BE VDOT NO. 21A AGGREGATE, PLACED IN LOOSE LIFTS NOT EXCEEDING 6", AND COMPACTED TO AT LEAST 95% MAXIMUM DRY DENSITY WITHIN 2 PERCENTAGE POINTS OF OPTIMUM MOISTURE (VTM-1) WITH THE USE OF MECHANICAL TAMPERS OR VIBRATORY ROLLERS. WATER COMPACTION IS NOT PERMITTED. LOCAL MATERIAL CLASSIFIED AS TYPE I SELECT MATERIAL MAY BE USED AS BACKFILL UPON PRIOR APPROVAL BY THE COUNTY ENGINEER. MATERIAL CLASSIFICATION SHALL BE PERFORMED ON THE ACTUAL SOIL TO VERIFY THAT SOIL MEETS VDOT SPECIFICATIONS FOR TYPE I SELECT MATERIAL BY A QUALIFIED TESTING LABORATORY AND TEST RESULTS SHALL BE CERTIFIED BY A VIRGINIA REGISTERED PROFESSIONAL ENGINEER. DENSITY REQUIREMENTS ARE THE SAME AS ABOVE, HOWEVER, MOISTURE CONTENT FOR SOILS MAY BE WITHIN 20% OF OPTIMUM. 2.) DENSITY AND MOISTURE TESTING IS REQUIRED ON BOTH THE AGGREGATE AND SOIL BACKFILL USED IN ANY TRENCHWORK. ALL TESTING SHALL BE PERFORMED AND CERTIFIED BY A GEOTECHNICAL ENGINEER OR A VDOT CERTIFIED TECHNICIAN. RESULTS SHALL BE PROVIDED TO THE INSPECTOR WITHIN 24-HOURS OF TESTING COMPLETION. THE COST OF ALL TESTING IS THE SOLE RESPONSIBILITY OF

THE PERMITTEE. THE PERMITTEE SHALL SUBMIT WRITTEN TEST RESULTS TO THE INSPECTOR'S OFFICE. 3.) FIELD DENSITY TESTING METHODS SHALL BE APPROVED BY THE COUNTY ENGINEER PRIOR TO PERFORMING ANY TESTING. A PERMITTEE THAT PERFORMS MORE THAN TEN (10) EXCAVATIONS A MONTH UNDER THESE STANDARDS MAY SUBMIT A WRITTEN QUALITY CONTROL PLAN TO REDUCE THE NUMBER OF REQUIRED FIELD DENSITY TESTS. THE QUALITY CONTROL PLAN MUST INCLUDE THE EXCLUSIVE USE OF A VDOT-CERTIFIED AGGREGATE. THE QUALITY CONTROL PLAN SHALL BE SUBMITTED TO THE COUNTY ENGINEER FOR

4.) FLOWABLE FILL MAY BE USED AS AN ALTERNATE TO AGGREGATE OR SELECT MATERIAL. FLOWABLE FILL SHALL MEET THE RÉQUIREMENTS OF VDOT SPECIAL PROVISIONS FOR FLOWABLE BACKFILL. THE MATERIAL MUST BE PLANT-CERTIFIED TO PROVIDE A 28-DAY COMPRESSIVE STRENGTH BETWEEN 30 AND 200 PSI. A CERTIFICATE OF MIX DESIGN MUST BE SUBMITTED TO THE INSPECTOR PRIOR TO PLACING THE MATERIAL IN THE TRENCH. A MINIMUM OF FOUR 6 X 1/2 TEST CYLINDERS SHALL BE TAKEN EVERY 50 CY OF PLACEMENT. CYLINDERS SHALL BE TESTED BY A QUALIFIED TESTING LABORATORY FOR 28-DAY STRENGTH. RESULTS SHALL BE PROVIDED TO THE INSPECTOR'S OFFICE WITHIN 24 HOURS OF TESTING COMPLETION. THE COST OF ALL TESTING IS THE RESPONSIBILITY OF THE PERMITTEE. IF THE REPORT INDICATED THE COMPRESSIVE STRENGTHS ARE NOT BETWEEN 30 AMD 200 PSI, THE PERMITTEE WILL BE RESPONSIBLE FOR REMOVING AND REPLACING THE BACKFILL WITH ACCEPTABLE BACKFILL AND COMPLETING THE RESTORATION OF THE STREET AT NO COST TO THE COUNTY.

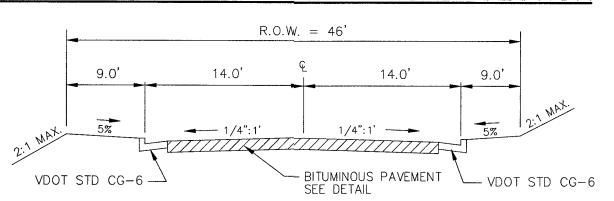
WOODS MEADOW COURT - ROAD SECTION



TYPICAL ROAD SECTION DESIGN SPEED = 25 MPH DESIGN ADT = 400

NOTE: G.C. SHALL ENSURE THAT A MINIMUM CLEAR ZONE OF 1' IS MAINTAINED BETWEEN THE BACK OF CURB AND ANY ABOVE-GROUND UTILITY STRUCTURES.

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