

GENERAL NOTES:

- PROVIDE NEW MATERIALS AND WORKMANSHIP IN CONFORMANCE WITH ALL APPLICABLE CODES, STATE AND FEDERAL LAWS, LOCAL ORDINANCES, INDUSTRY STANDARDS, AND OTHER CRITERIA WHICH WOULD NORMALLY APPLY TO WORK OF THIS NATURE. NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERING A CONFLICT IN CODES, ORDINANCES, STANDARDS, OR OTHER CRITERIA. APPLICABLE CODES AND STANDARDS INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, THE FOLLOWING:
 - BOCA - BASIC CODES
 - ROANOKE COUNTY
 - VDOT - VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS
 - VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS AND HANDBOOK, LATEST EDITION
 - OSHA - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
 - ASTM - AMERICAN SOCIETY FOR TESTING AND MATERIALS
- MAINTAIN A SET OF APPROVED PLANS ON SITE AT ALL TIMES DURING CONSTRUCTION.
- COMPLY WITH LOCAL ORDINANCES FOR BURNING OF WASTE. TRANSPORT WASTE MATERIALS AND UNSUITABLE MATERIALS FROM OWNER'S PROPERTY.
- A PRECONSTRUCTION MEETING MUST TAKE PLACE PRIOR TO COMMENCING WORK. AS A MINIMUM, THE CONTRACTOR, OWNER'S AGENT AND COUNTY'S AGENT MUST ATTEND.
- VERIFY THE LOCATION AND ELEVATION OF EACH EXISTING UNDERGROUND UTILITY IN AREAS OF CONSTRUCTION PRIOR TO COMMENCEMENT OF WORK. CONTACT ENGINEER IMMEDIATELY IF THERE APPEARS TO BE A CONFLICT. UPON DISCOVERY OF A UTILITY WHICH IS NOT SHOWN, AND UPON DISCOVERY OF A LOCATION OR ELEVATION WHICH DIFFERS FROM THAT SHOWN. TO LOCATE UTILITIES, CALL "MISS UTILITY", 1-800-552-7001. UTILITY LOCATIONS SHOWN ARE THE RESULT OF A COMBINATION OF FIELD LOCATION AND EXISTING INFORMATION. LOCATIONS ARE APPROXIMATE.
- REPAIR ALL DAMAGE TO ANY UTILITY, PUBLIC OR PRIVATE, CAUSED AS A RESULT OF CONSTRUCTION ACTIVITIES, AT NO ADDITIONAL COST TO OWNER.
- NOTIFY OWNERS OF UTILITIES IN AREAS OF CONSTRUCTION PRIOR TO COMMENCEMENT OF EXCAVATION.
- THIS PROPERTY DOES LIE WITHIN THE LIMITS OF THE F.E.M.A. DEFINED 100 YEAR FLOOD ZONE.
- ANY SITE DEVELOPMENT OUTSIDE OF THE SCOPE OF THIS PLAN WILL REQUIRE SITE PLAN REVIEW.

WATER NOTES:

- ALL MATERIALS, CONSTRUCTION SHALL MEET ALL REQUIREMENTS OF THE ROANOKE COUNTY WATER AND SEWER REGULATIONS, 3rd EDITION.
- MINIMIZE ANY DISTURBANCE TO EXISTING UTILITY SERVICES DURING CONSTRUCTION.
- PROVIDE 3.0 FEET MINIMUM COVER.

SANITARY SEWER NOTES:

- SEWER PIPE SHALL BE PVC SDR-35.
- ALL SANITARY LATERALS WITHIN RIGHTS-OF-WAY AND EASEMENTS SHALL BE FOUR (4) INCH DIAMETER WITH A MINIMUM GRADE OF 2.08% (1/4"=1'). MATERIAL TO BE PVC SDR-35. THE CONTRACTOR SHALL INSTALL THE SANITARY SEWER LATERALS TO
- REFERENCE THE ROANOKE COUNTY UTILITY DEPARTMENT WATER AND SEWER REGULATIONS, LATEST EDITION.
- PROVIDE A MINIMUM 3.0' COVER OVER SANITARY SEWER LINES MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES AND STORM DRAIN IS 18".
- ALL TAPS TO EXISTING SANITARY SEWER LINES TO BE PERFORMED BY THE ROANOKE COUNTY UTILITY DEPARTMENT.

DIMENSIONAL NOTES:

- IN GENERAL DIMENSIONS ARE TO BOTTOM FACE OF CURB, CENTER OF PAINTED LINE, EDGE OF PAVEMENT, FACE OF WALL.
- DO NOT SCALE DIMENSIONS. IF A QUESTION CONCERNING A DIMENSION ARISES, CONTACT THE ENGINEER FOR INTERPRETATION.

PAVING NOTES:

- SEE PAVEMENT SECTION AT RIGHT.
- SAW CUT EDGE OF EXISTING PAVEMENT WHERE NEW IS TO MEET EXISTING.
- PROVIDE SMOOTH TRANSITION FROM EXISTING TO NEW PAVEMENT AND CURB.
- THE PAVEMENT DESIGN SHOWN IS BASED ON A SUBGRADE RATING OF CBR 10 OR GREATER. SHOULD THE ACTUAL SUB GRADE CBR VALUES BE LESS THAN 10, AN ALTERNATE PAVEMENT DESIGN MUST BE APPROVED BY THE COUNTY OF ROANOKE.
- DO NOT LAY PAVEMENT BASE STONE UNTIL ALL UTILITIES, INCLUDING STORM SEWER, ARE IN PLACE.

GENERAL UTILITY NOTES:

- SUPPLY AND INSTALL ALL MATERIALS AND METHODS FOR WATERLINES, SANITARY SEWERS AND STORM DRAINAGE IN ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS OF ROANOKE COUNTY AND THE VIRGINIA DEPARTMENT OF TRANSPORTATION "ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS", LATEST EDITION.
- OBTAIN ALL REQUIRED PERMITS AND NOTIFY APPROPRIATE OFFICIALS 48 HOURS PRIOR TO COMMENCEMENT OF WORK. OBTAIN INFORMATION FROM ROANOKE COUNTY CONCERNING PERMITS AND CONNECTIONS TO EXISTING LINES.
- ALL WORK SHALL BE SUBJECT TO INSPECTION BY ROANOKE COUNTY. NOTIFY APPROPRIATE OFFICIALS PRIOR TO COMMENCEMENT OF WORK.
- USE SELECT MATERIAL FREE FROM FROST, LARGE CLODS, STONES, AND DEBRIS FOR BACK FILL FROM THE BOTTOM OF THE TRENCH TO TWELVE (12) INCHES ABOVE THE PIPE.
- MAKE ALL PIPE JOINTS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE COUNTY'S SPECIFICATIONS. MAKE JOINTS BETWEEN DIFFERENT PIPE MATERIALS WITH STANDARD FITTINGS MANUFACTURED FOR THE PURPOSE.

GRADING NOTES:

- REMOVE TREES, SHRUBS, GRASS, AND OTHER VEGETATION, IMPROVEMENTS OR OBSTRUCTIONS AS REQUIRED TO PERMIT INSTALLATION OF NEW CONSTRUCTION. REMOVE TREES AND OTHER VEGETATION, INCLUDING STUMPS AND ROOTS, COMPLETELY IN AREAS REQUIRED FOR SUBSEQUENT SEEDING. CUT OFF TREES AND STUMPS IN AREAS TO RECEIVE FILL MORE THAN THREE FEET IN DEPTH TO WITHIN EIGHT INCHES OF THE ORIGINAL GROUND SURFACE.
- BARRICADE OPEN EXCAVATIONS OCCURRING AS PART OF THIS WORK AND OPERATE WARNING LIGHTS AS RECOMMENDED BY AUTHORITIES HAVING JURISDICTION.
- EXCAVATE TRENCHES TO UNIFORM WIDTH CONFORMING TO VDOT STANDARD PB-1 FOR STORM DRAINAGE PIPING. BACKFILL TRENCHES WITH CONTROLLED FILL.
- PREVENT SURFACE WATER AND SUBSURFACE OR GROUND WATER FROM FLOWING INTO EXCAVATIONS AND FROM FLOODING PROJECT SITE AND SURROUNDING AREA. DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS. REMOVE WATER TO PREVENT SOFTENING OF FOUNDATION BOTTOMS, UNDERCUTTING FOOTINGS, AND SOIL CHANGES DETRIMENTAL TO STABILITY OF SUBGRADES AND FOUNDATIONS. CONVEY WATER REMOVED FROM EXCAVATIONS AND RAIN WATER TO COLLECTING OR RUNOFF AREAS. ESTABLISH AND MAINTAIN TEMPORARY DRAINAGE DITCHES AND OTHER DIVERSIONS OUTSIDE EXCAVATION LIMITS FOR EACH STRUCTURE. DO NOT USE TRENCH EXCAVATIONS AS TEMPORARY DITCHES.
- PROTECT EXCAVATED BOTTOMS OF ALL FOOTINGS AND TRENCHES AGAINST FREEZING WHEN ATMOSPHERIC TEMPERATURE IS LESS THAN 35°F (1°C).
- UNIFORMLY GRADE AREAS WITHIN LIMITS OF GRADING INCLUDING ADJACENT TRANSITION AREAS. SMOOTH FINISHED SURFACES WITHIN SPECIFIED TOLERANCES. COMPACT WITH UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE SHOWN, OR BETWEEN SUCH POINTS AND EXISTING GRADES. GRADE AREAS ADJACENT TO BUILDING LINES TO DRAIN AWAY FROM STRUCTURES AND TO PREVENT FLOODING.
- PROTECT GRADED AREAS FROM TRAFFIC AND EROSION. REPAIR AREAS WHICH HAVE SETTLED, FRODDED, OR BECOME DAMAGED DUE TO CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO OWNER.
- PLACE ALL FILL AND BACKFILL AS CONTROLLED FILL AS FOLLOWS:
 - ESTABLISH SUITABLE SUBGRADE CONDITIONS PRIOR TO PLACING FILL BY PROOFROLLING, UNDERCUTTING AND COMPACTING AS NECESSARY.
 - PLACE FILL MATERIALS IN LAYERS NOT MORE THAN 8" IN LOOSE DEPTH FOR HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4" FOR HAND TAMPERS.
 - PRIOR TO COMPACTION, PROVIDE MOISTURE CONTENT TO WITHIN 3% OF OPTIMUM BY MOISTENING OR AERATING EACH LAYER. DO NOT PLACE FILL MATERIAL ON SURFACES WHICH ARE MUDDY, FROZEN OR CONTAIN FROST OR ICE.
 - COMPACT SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D 698 (STANDARD PROCTOR):
 - 95% UNDER PAVEMENT
 - 85% UNDER LAWN OR UNPAVED AREAS
- SPREAD TOPSOIL TO A DEPTH OF 4" OVER ALL DISTURBED AREAS NOT RECEIVING WALKS, PAVEMENT, INCLUDING TRENCHES. IMMEDIATELY FOLLOWING PLACEMENT OF TOPSOIL, DISK THE ENTIRE TOPSOILED AREA AND RAKE FREE OF STONES AND DEBRIS OVER 1/2" IN ANY DIMENSION. PROVIDE A FINISHED SURFACE FREE OF DEPRESSIONS OR HIGH SPOTS. SEED IMMEDIATELY.
- OWNER (CONTRACTOR) SHALL EMPLOY QUALIFIED SOILS TESTING LABORATORY TO INSPECT EARTHWORK OPERATIONS. NOTIFY LABORATORY PRIOR TO PERFORMING EARTHWORK OPERATIONS.

EROSION & SEDIMENT CONTROL NOTES:

- PROVIDE CONSTRUCTION MATERIALS AND METHODS IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS, INCLUDING THE STANDARDS AND SPECIFICATIONS OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK", LATEST EDITION. REFER TO THIS HANDBOOK FOR DETAILS AND SPECIFICATIONS OF EROSION CONTROL DEVICES.
- SCHEDULE A PRECONSTRUCTION MEETING INVOLVING THE ENGINEER, DEVELOPER'S REPRESENTATIVE AND SELECTED CONTRACTOR ON SITE PRIOR TO BEGINNING CONSTRUCTION.
- ADHERE TO THE EROSION AND SEDIMENT CONTROL NARRATIVE AS PART OF THIS CONTRACT. INSTALL EROSION CONTROL DEVICES AS PER THE NARRATIVE/PLAN.
- NOTIFY THE PROJECT ENGINEER WHEN THE LOCAL GOVERNING OFFICIAL HAS INSPECTED AND APPROVED ALL IN-PLACE EROSION AND SEDIMENT CONTROL DEVICES, REQUIRED BY LOCAL ORDINANCES TO BE IN PLACE PRIOR TO LAND DISTURBANCE.
- NOTIFY THE PROJECT ENGINEER 24 HOURS IN ADVANCE OF BEGINNING CLEARING AND GRADING OPERATIONS.
- DISPOSE OF EXCESS EXCAVATION, AS WELL AS ALL ORGANIC MATTER AND DEBRIS, OFF SITE.
- SEED AND MULCH OR TEMPORARILY STABILIZE ALL DENUDE AREAS WITHIN SEVEN DAYS OF DISTURBANCE. SEED TRENCHES IMMEDIATELY FOLLOWING BACKFILL.
- REMOVE ALL DEMOLISHED MATERIAL FROM THE PROJECT SITE AND DISPOSE OF IN AN ACCEPTABLE LOCATION.
- REINSTALL ANY STRUCTURE(S) RELOCATED AND/OR REMOVED DURING THE INSTALLATION OF THE PROPOSED IMPROVEMENTS AT NO ADDITIONAL COST TO OWNER.
- INSPECT ESC MEASURES WEEKLY AND AFTER EACH RAINFALL TO INSURE PROPER FUNCTIONING.
- AVOID CONSTRUCTION TRAFFIC IN NATURAL STREAMS AND DRAINAGE WAYS WHENEVER POSSIBLE.
- REMOVE ALL SILT FROM STREAMS AND DRAINAGE WAYS PRIOR TO BOND RELEASE.
- THE LOCATION OF ALL OFF-SITE FILL AREAS OR BORROW AREAS ASSOCIATED WITH THE CONSTRUCTION PROJECT WILL BE PROVIDED TO ROANOKE COUNTY COMMUNITY DEVELOPMENT. AN EROSION SEDIMENT CONTROL PLAN OR MEASURE MAY BE REQUIRED FOR THESE AREAS.

EROSION & SEDIMENT CONTRON NARRATIVE:

PROJECT DESCRIPTION

The project consists of the construction of 20 single family homes. Utilities are planned. Total project area is 6.50 acres. Total disturbed area is approximately 2.76 acres.

EXISTING SITE CONDITIONS

The site currently drains from the northeast to the southwest at $\pm 11\%$ onto Daugherty Road and Big Bear Creek.

ADJACENT PROPERTIES

Adjacent properties are zoned R1.

OFF-SITE AREAS

Silt fence will be installed along the southwest property line it insure runoff does not enter into Electric Road.

SOILS

On site soils are identified as 50E and 13A, Tumbling and Derroc land complex, respectively. Soils information is from the U.S. Department of Agriculture soils survey map.

CRITICAL EROSION AREAS

Silt fence should be installed along the southwest property line and maintained to prevent runoff from leaving the property.

EROSION AND SEDIMENT CONTROL MEASURES

All measures to be in accordance with the Virginia Erosion and Sediment Control Handbook, latest edition.

Construction Entrance-3.02

A gravel construction entrance will prevent mud and dust from entering Daugherty Road.

Silt Fence-3.05

Silt fence will protect downstream property from sediment laden runoff.

Temporary Seeding-3.31

Any denuded areas left dormant for extended periods of time will be seeded temporarily within seven days.

Permanent Seeding-3.32

Areas not receiving buildings, paving or landscaping will be seeded.

MANAGEMENT STRATEGIES

Construction will be sequenced so that grading operations can begin and end as quickly as possible.

Install silt fence as the first step in construction.

The gravel construction entrance will be installed as a second step in construction.

Other measures will be installed as work progresses into those areas.

Temporary seeding or other stabilization will follow immediately after grading.

The job superintendent shall be responsible for the installation and maintenance of all erosion and sediment control practices.

After achieving adequate stabilization, the temporary erosion and sediment control measures will be cleaned and removed.

A construction entrance, and any silt fence deemed necessary by Roanoke County, is to be installed with the construction of each house.

PERMANENT STABILIZATION

All areas disturbed by construction which do not receive buildings or paving shall be stabilized with permanent seeding as specified. All seeding shall be tacked and mulched and placed immediately after reaching finished grade. The parking area shall receive paving.

STORMWATER MANAGEMENT

A stormwater management facility is planned for this development.

MAINTENANCE

In general, all erosion and sediment control measures will be checked daily and after each significant rainfall. In particular:

Silt fence will be checked regularly for undermining or deterioration of the fabric. Sediment shall be removed when the level of sediment deposition reaches halfway to the top of the barrier.

The seeded areas shall be checked regularly to ensure that a good stand is maintained. Areas should be fertilized and reseeded as needed.

The contractor shall inspect all erosion control devices immediately after each significant rainfall and daily during periods of prolonged or heavy rainfall and repair all structures as necessary with in 48 hours.

SITE SUMMARY:

OWNER/: A.M. COOPER CONSTRUCTION
DEVELOPER 4430 OLD CAVE SPRING ROAD
ROANOKE, VA 24018
(540)-989-0920

TAX MAP NUMBER: 54.02-1-9.9.1 & 55.01-1-60

SIZE: 6.5 AC

ZONING: R1 - ZERO LOT LINE OPTION

MINIMUM LOT SIZE REQUIRED: 5760 SF

MINIMUM LOT FRONTAGE REQUIRED: 48.0'

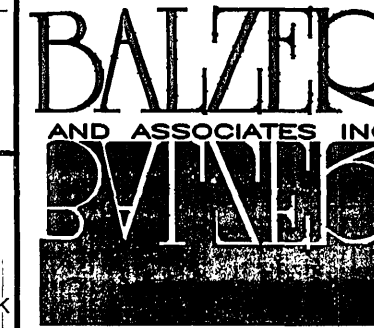
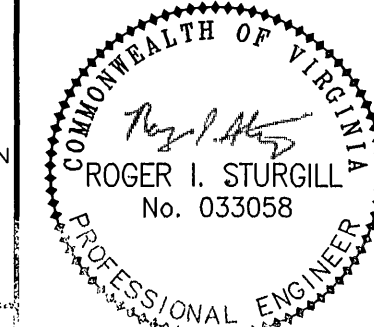
MINIMUM LOT FRONTAGE PROVIDED: 60.02'

SETBACKS: FRONT - 30'
SIDE - ONE SIDEYARD OF 10'
REAR - 25'

MAXIMUM BUILDING COVERAGE: 40%

MAXIMUM LOT COVERAGE: 50%

A SEPARATE SIGN PERMIT WILL BE REQUIRED.
A MAXIMUM OF 30 S.F. OF SIGNAGE WILL BE ALLOWED.



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ENGINEERS • SURVEYORS

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BEAR ROCK SUBDIVISION
NOTES AND DETAILS
CATAWBA MAGISTERIAL DISTRICT
ROANOKE COUNTY, VIRGINIA

DRAWN BY: DRB

DESIGNED BY: SMH

CHECKED BY: RIS

DATE: AUG. 15, 2003

REVISIONS:
11/06/03
12/23/03
02/24/04
04/16/04
12/13/04
12/28/04
03/06/06

WWW ID# 8PUQAN

SCALE: AS SHOWN

SHEET NO.:

6 OF 6

JOB NO.

R0300146.00

