

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 CITY
 - VDOT - VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS
 - VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS AND HANDBOOK
 - 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.
- OBTAIN EACH REQUIRED PERMIT PRIOR TO COMMENCING THAT PART OF THE WORK.
- NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF CONDITIONS WHICH DIFFER
- COMPLY WITH LOCAL ORDINANCES FOR BURNING OF WASTE. TRANSPORT WASTE MATERIALS AND UNSUITABLE MATERIALS FROM OWNER'S PROPERTY.
- COORDINATE BUILDING DIMENSIONS WITH ARCHITECTURAL PLANS.
- A PRECONSTRUCTION MEETING MUST TAKE PLACE PRIOR TO COMMENCING WORK. AS A MINIMUM, THE CONTRACTOR, OWNER'S AGENT AND CITY'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, 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
- SIGNAGE SHALL COMPLY WITH THE APPLICABLE REGULATIONS OF THE CITY. A
- SITE LIGHTING SHALL CONFORM TO THE APPLICABLE REGULATIONS OF THE
- SCREEN ALL TRANSFORMERS, HEAT PUMPS, AND OTHER MECHANICAL EQUIPMENT. MECHANICAL UNITS LOCATED TO THE REAR OF BUILDINGS MUST BE VISUALLY AND ACOUSTICALLY SCREENED FROM ADJOINING PROPERTIES.
- TRASH TO BE HANDLED BY INDIVIDUAL CANS.
- AN ELEVATION CERTIFICATE WILL NEED TO BE COMPLETED FOR THE NEW BUILDING AND THE ADDITION BEFORE A CERTIFICATE OF OCCUPANCY WILL BE ISSUED. THIS ELEVATION CERTIFICATE SHOULD IDENTIFY THE BASE FLOOD ELEVATION AT THE STRUCTURE.

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.
- ALL PERIMETER EROSION & SEDIMENT CONTROLS SHALL BE INSTALLED PRIOR TO ANY UPSLOPE LAND DISTURBING ACTIVITIES.
- IN ORDER TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO PUBLIC ROADS, THE TIRES ON ALL CONSTRUCTION VEHICLES MUST BE WASHED BEFORE ENTERING PUBLIC RIGHT OF WAY. IN LIEU OF A CONSTRUCTION ENTRANCE, THE CONTRACTOR IS TO ENSURE THAT ALL DISTURBED AREAS RECEIVE CONSTRUCTION ROAD STABILIZATION IMMEDIATELY AFTER DISTURBANCE.

GRADING NOTES:

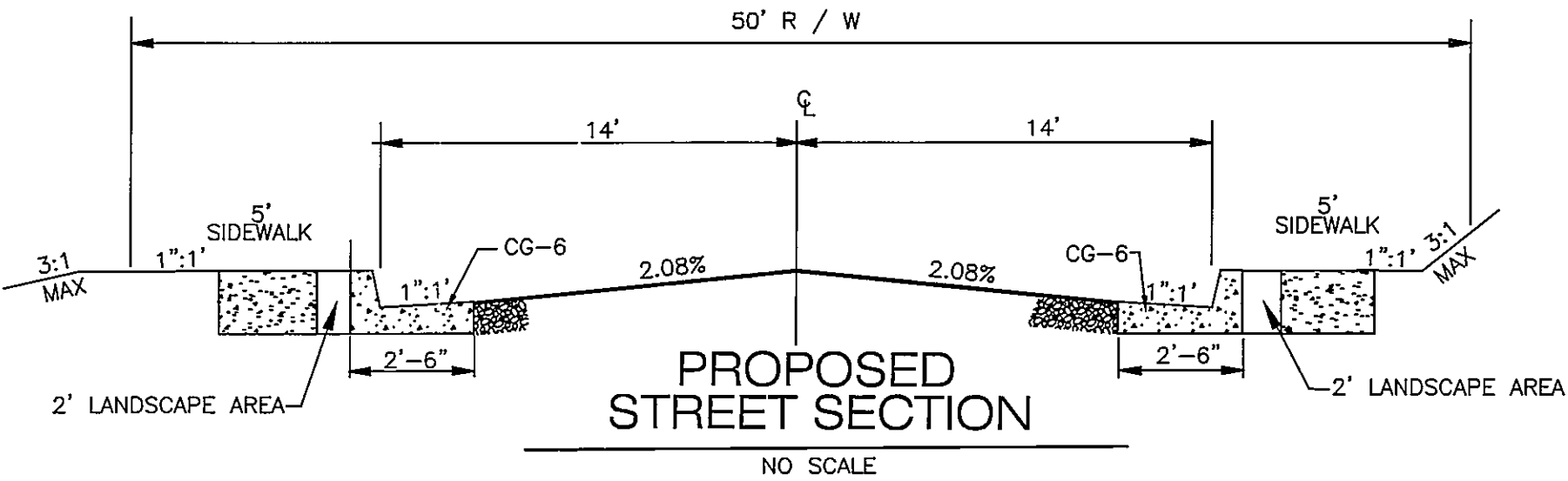
- REFER TO BUILDING PLANS FOR SUBGRADE AND UTILITY TRENCHES WITHIN 5' OF BUILDING ENVELOPE.
- REMOVE TREES, SHRUBS, GRASS, AND OTHER VEGETATION, IMPROVEMENTS OR OBSTRUCTIONS AS REQUIRED TO PERMIT INSTALLATION OF NEW CONSTRUCTION. REMOVE TREES AND OTHER VEGETATION, INCLUDING STUMPS AND ROOTS, COMPLETELY 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.
- EXCAVATION FOR STRUCTURES:
 - CONFORM TO ELEVATIONS AND DIMENSIONS SHOWN WITHIN A TOLERANCE OF PLUS OR MINUS 0.10 FOOT.
 - PROVIDE TRUE AND STRAIGHT FOOTING EXCAVATIONS WITH UNIFORM LEVEL BOTTOMS OF THE WIDTH INDICATED TO ENSURE PROPER PLACEMENT AND COVER OF ALL REINFORCEMENT.
 - REMOVE ALL LOOSE MATERIALS FROM THE EXCAVATION PRIOR TO PLACEMENT OF CONCRETE.
 - PROVIDE A MINIMUM OF 2'-0" FROM FINISHED GRADE TO TOP OF ALL EXTERIOR WALL FOOTINGS.
 - FOOTINGS WHICH SUPPORT CONCRETE MASONRY UNITS MAY BE STEPPED PROVIDED THE VERTICAL STEP DOES NOT EXCEED ONE HALF OF THE HORIZONTAL DISTANCE BETWEEN STEPS AND HORIZONTAL DISTANCE BETWEEN STEPS IS NOT LESS THAN TWO FEET.
 - IF ROCK IS ENCOUNTERED IN A FOOTING EXCAVATION, UNDERCUT IT A MINIMUM OF 12" BELOW THE BOTTOM OF THE FOOTINGS AND FILL THE RESULTING OVER-EXCAVATION WITH CONTROLLED FILL.
- CUT SURFACE UNDER PAVEMENTS TO COMPLY WITH CROSS SECTIONS, ELEVATIONS, AND GRADES AS INDICATED.
- 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.

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 IMMEDIATELY.

PAVING NOTES:

- SEE PAVEMENT SECTION THIS SHEET.
- SAW CUT EDGE OF EXISTING PAVEMENT WHERE CURB IS TO MEET EXISTING PAVEMENT.
- 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 CITY OF ROANOKE.
- DO NOT LAY PAVEMENT BASE STONE UNTIL ALL UTILITIES, INCLUDING STORM SEWER, ARE IN PLACE.



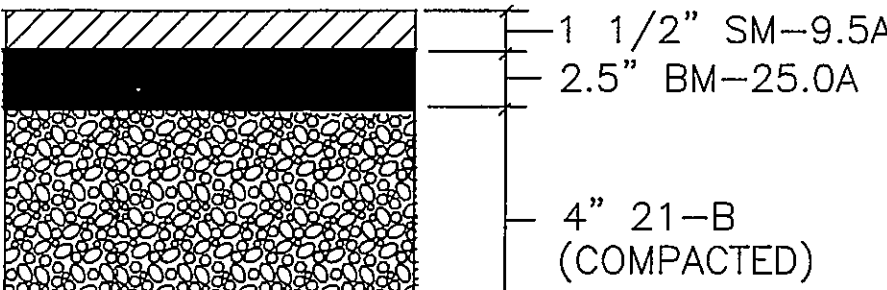
NOTE:

THE PRELIMINARY PAVEMENT DESIGNS SHOWN ARE BASED ON A PREDICTED SUB-GRADE CBR VALUE OF 10.0 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 SUB-GRADE SOIL IS TO BE TESTED BY AN INDEPENDANT LABORATORY AND THE RESULTS SUBMITTED TO THE ENGINEER AND CITY OF ROANOKE FOR REVIEW AND APPROVAL PRIOR TO BASE CONSTRUCTION. THESE TESTS SHALL BE MADE AT EACH CHANGE IN SUBGRADE SOILS AND AT A MAXIMUM SPACING OF 500 FEET WHERE SUBGRADE SOILS REMAIN CONSTANT. SPACING OF CER TESTS SHALL BE IN ACCORDANCE WITH THE VDOT PAVEMENT DESIGN GUIDE, AND A MINIMUM OF TWO CBR SAMPLES WILL BE REQUIRED FOR CUL-DE-SAC OR DEAD END STREETS OF LESS THAN 500 FEET IN LENGTH. SHOULD THE SUB-GRADE CBR VALUE AND/OR THE RF VALUE BE LESS THAN THE PREDICATED VALUES, ADDITIONAL BASE MATERIAL WILL BE REQUIRED IN ACCORDANCE WITH THE ENGINEER REQUIREMENTS. REFER TO THE SAME MANUAL FOR THE NUMBER AND LOCATIONS OF THE REQUIRED SOIL SAMPLES TO BE TESTED.

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

BACKFILLING AND COMPACTION:

- 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 CITY 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.
- DENSITY AND MOISTURE TESTING IS REQUIRED ON BOTH AGGREGATE AND SOIL BACKFILL. 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 PERMITEE. THE PERMITEE SHALL SUBMIT WRITTEN TEST RESULTS TO THE INSPECTOR'S OFFICE.
- FIELD DENSITY TESTING METHODS SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO PERFORMING ANY TESTING. A PERMITEE 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 CITY ENGINEER FOR REVIEW AND APPROVAL.
- FLOWABLE FILL MAY BE USED AS AN ALTERNATE TO AGGREGATE OR SELECT MATERIAL. FLOWABLE FILL SHALL MEET THE REQUIREMENTS 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 12 TEST CYLINDERS SHALL BE TAKEN EVERY 50 CY OF FLOWABLE FILL. 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 PERMITEE. IF THE REPORT INDICATED THE COMPRESSIVE STRENGTHS ARE NOT BETWEEN 30 AND 200 PSI, THE PERMITEE WILL BE RESPONSIBLE FOR REMOVING AND REPLACING THE BACKFILL WITH ACCEPTABLE BACKFILL AND COMPLETING THE RESTORATION OF THE STREET AT NO COST TO THE CITY.

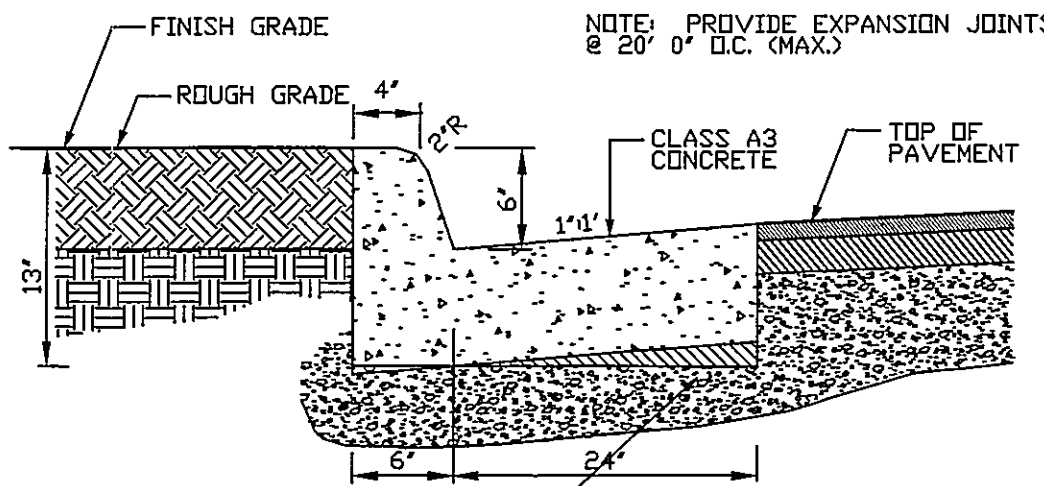


PAVEMENT SECTION

NO SCALE

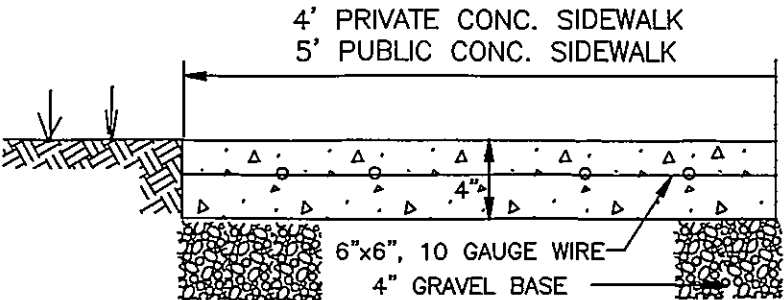
NOTE: FOR AN EXCAVATED SUBGRADE: THE SUBGRADE AREA SHALL BE SCARIFIED TO A DEPTH OF 6 INCHES FOR A DISTANCE OF 2 FEET BEYOND THE PROPOSED EDGES OF THE PAVEMENT ON EACH SIDE. SUBGRADE MATERIAL SHALL BE COMPACTED AT OPTIMUM MOISTURE ($\pm 20\%$) TO THE REQUIREMENTS SET FORTH BY SEC. 305.03 OF THE VDOT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



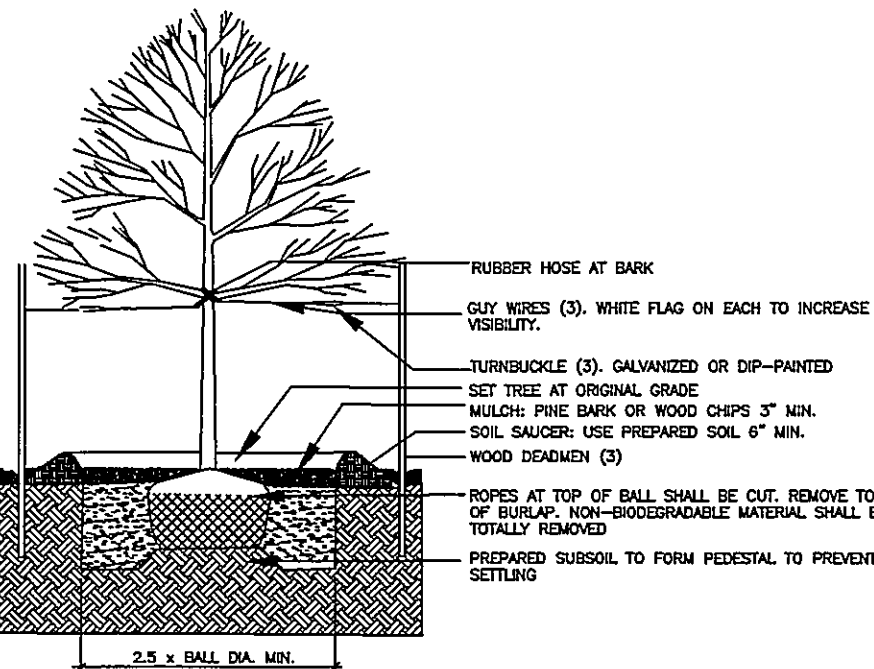
CG-6 (WET) DETAIL

N.T.S.



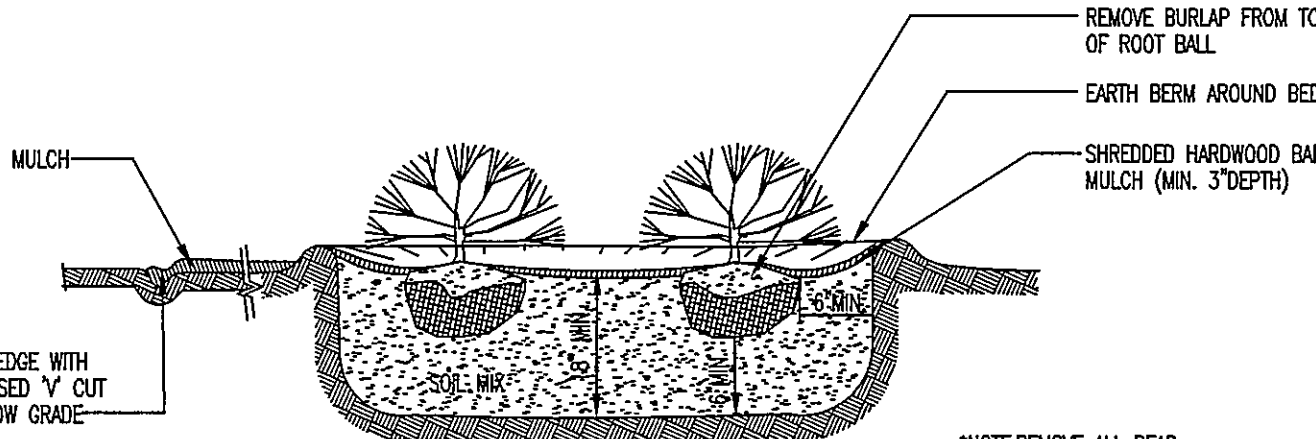
SIDEWALK DETAIL

NO SCALE



PLANTING DETAIL

NO SCALE



SHRUB PLANTING DETAIL

NOT TO SCALE

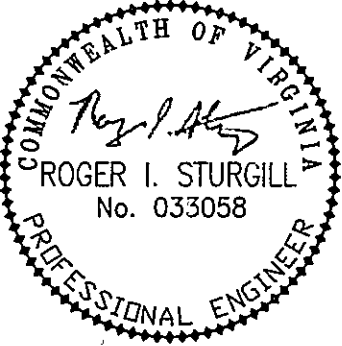
INFILTRATION BASIN DETAIL

NOT TO SCALE

* NOTE: SEE SEQUENCING OF CONSTRUCTION NOTES ON SHEET C5

QUANTITY + COST ESTIMATE

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	BONDABLE
CLEARING AND GRUBBING	3.0	ACRES	\$3,000.00		\$9,000.00
CURB INLET DI-3B 12'	2	EACH	\$1,500.00		\$3,000.00
CURB INLET DI-3C 14'	2	EACH	\$1,500.00		\$3,000.00
DI-1	2	EACH	\$1,500.00		\$3,000.00
DI-7	1	EACH	\$1,500.00		\$1,500.00
MANHOLE MH-	2	EACH	\$2,000.00		\$4,000.00
15-IN. CONCRETE PIPE, CLASS III	460	LIN. FT.	\$30.00		\$13,800.00
18-IN. CONCRETE PIPE, CLASS III	146	LIN. FT.	\$36.00		\$5,256.00
15-IN. END SECTION ES-1	1	EACH	\$300.00		\$300.00
18-IN. END SECTION ES-1	1	EACH	\$350.00		\$350.00
PAVEMENT	1,600	S.Y.	\$16.00		\$25,600.00
HEADER CURB & GUTTER CG-6	950	LIN. FT.	\$12.00		\$11,400.00
SIDEWALK	950	LIN. FT.	\$15.00		\$14,250.00
10" WATER LINE	800	LIN. FT.	\$27.00		\$21,600.00
SINGLE WATER CONNECTIONS	20	EACH	\$250.00		\$5,000.00
FIRE HYDRANT ASSEMBLIES	2	EACH	\$1,500.00		\$3,000.00
8-IN. GATE VALVES, W/VAULT, FRAME & COVER	2	EACH	\$500.00		\$1,000.00
8" SANITARY SEWER	405	LIN. FT.	\$25.00		\$10,125.00
STANDARD MANHOLE W/FRAME & COVER	5	EACH	\$1,500.00		\$7,500.00
LANDSCAPING	1	LUMP SUM	\$6,500.00		\$6,500.00
SUBTOTAL					\$149,181.00
10% CONTINGENCY					\$14,918.00
ESTIMATED TOTAL					\$164,099.00



PLANNERS • ARCHITECTS
ENGINEERS • SURVEYORS

1208 Corporate Circle
Roanoke, Virginia 24018
Phone: 540/772-9580
FAX: 540/772-8050

501 Branchway Road
Richmond, Virginia 23226
Phone: 804/794-0371
FAX: 804/794-2635

880 Technology Park Drive
Suite 200
Glen Allen, Virginia 23059
Phone: 804/653-0192
FAX: 804/653-0133

448 Pappas Ferry Road
Christiansburg, Virginia 24073
Phone: 540/681-4290
FAX: 540/681-4291

1567 Commerce Road
Suite 201
Verona, Virginia 24485
Phone: 540/248-3252
FAX: 540/248-3221

JANETTE AVENUE PHASE II
NOTES & DETAILS
ROANOKE CITY, VIRGINIA

DRAWN BY: BTC
DESIGNED BY: SMH
CHECKED BY: RIS
DATE: 5-10-06
REVISIONS:
8-11-06
8-28-06

SCALE: 1"=30'
SHEET NO.
C9
JOB NO.
R0500334.00