

GRADING NOTES

1. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY LAND DISTURBING PERMITS.
2. PRIOR TO BEGINNING EARTHWORK OPERATIONS, THE OWNER SHALL EMPLOY A QUALIFIED, PROFESSIONAL GEOTECHNICAL ENGINEER LICENSED IN THE STATE OF VIRGINIA. AS A RESULT OF ONSITE TESTING, THE GEOTECHNICAL ENGINEER SHALL MAKE RECOMMENDATIONS REGARDING THE ONSITE PLACEMENT OF FILL MATERIAL AND PROPER COMPACTION METHODS. NO WARRANTIES ARE MADE BY THE OWNER OR ENGINEER FOR ANY SUBSURFACE CONDITIONS ON THE PROPERTY.
3. FILL SHALL BE PLACED ONLY ON FIRM SUBGRADES APPROVED BY THE SOILS ENGINEER. SUBGRADES SHALL BE SCARIFIED TO A DEPTH OF 4 INCHES PRIOR TO FILL PLACEMENT TO ASSURE BONDING BETWEEN THE TWO SOILS. ALL FILL AREAS SHALL BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% DRY DENSITY (ASTM D698), UNLESS NOTED OTHERWISE. THE COMPACTION SHALL BE ACCOMPLISHED BY PLACING FILL IN 6 TO 8 INCH LIFTS AND MECHANICALLY COMPACTING EACH LIFT TO THE REQUIRED DENSITY. THE SOILS ENGINEER SHALL PERFORM FIELD DENSITY TEST ON EACH LIFT OR AS NECESSARY TO ASCERTAIN THAT ADEQUATE COMPACTION HAS BEEN ACHIEVED. CALIFORNIA BEARING RATIO TESTS SHALL BE PERFORMED IN MATERIAL PROPOSED FOR USE BENEATH PAVEMENT WHETHER CUT OR FILL.
4. CLEAR SITE WITHIN LIMITS OF GRADING WORK. DO NOT DISTURB AREAS OUTSIDE OF GRADING LIMITS OR PROPERTY BOUNDARY.
5. REMOVE TREES, SHRUBS, GRASS AND OTHER VEGETATION, IMPROVEMENTS OR OBSTRUCTIONS AS REQUIRED TO PERMIT INSTALLATION OF NEW CONSTRUCTION. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF IN A MANNER AND LOCATION ACCEPTABLE TO THE GOVERNING AUTHORITY. REMOVE TREES AND OTHER VEGETATION, INCLUDING STUMPS AND ROOTS, COMPLETELY IN AREAS REQUIRED FOR SUBSEQUENT SEEDINGS.
6. BARRICADE OPEN EXCAVATIONS OCCURRING AS PART OF THIS WORK AND OPERATE WARNING LIGHTS AS RECOMMENDED BY AUTHORITIES HAVING JURISDICTION.
7. EXCAVATION FOR STRUCTURES:
A. CONFORM TO ELEVATIONS AND DIMENSIONS SHOWN WITHIN A TOLERANCE OF PLUS OR MINUS 0.10 FOOT.
B. PROVIDE TRUE AND STRAIGHT FOOTING EXCAVATIONS WITH UNIFORM LEVEL BOTTOMS OF THE WIDTH INDICATED TO ENSURE PROPER PLACEMENT AND COVER OF ALL REINFORCEMENT.
C. REMOVE ALL LOOSE MATERIALS FROM THE EXCAVATION PRIOR TO PLACEMENT OF CONCRETE.
D. PROVIDE A MINIMUM OF 2'-0" FROM THE FINISHED GRADE TO TOP OF ALL EXTERIOR WALL FOOTINGS.
E. 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.
F. 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. CONFIRM EXCAVATIONS WITH GEOTECHNICAL ENGINEER.
8. CUT SURFACE UNDER PAVEMENTS TO COMPLY WITH CROSS SECTIONS, ELEVATIONS, AND GRADES AS INDICATED. GRADES SHOWN ARE FINISHED GRADES.
9. EXCAVATE TRENCHES TO UNIFORM WIDTH CONFORMING TO VDOT STANDARD PB-1 FOR STORM DRAINAGE PIPING AND UB-1 FOR SANITARY SEWER AND WATER. BACK FILL TRENCHES WITH CONTROLLED FILL.
10. 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.
11. PROTECT EXCAVATED BOTTOMS OF ALL FOOTINGS AND TRENCHES AGAINST FREEZING WHEN ATMOSPHERIC TEMPERATURE IS LESS THAN 35 F (1 C).
12. BACK FILLING:
A. COMPACT THE BACK FILL AROUND THE OUTSIDE OF BUILDING TO A MINIMUM OF 85% OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D 698 STANDARD PROCTOR. DO NOT ALLOW HEAVY COMPACTION EQUIPMENT SUCH AS ROLLERS, ETC., CLOSER TO ANY FOOTING THAN THE HORIZONTAL DISTANCE SUBTENDED BY A 45 ANGLE WITH THE TOP EDGE OF THE FOOTINGS AND THE SURFACE OF THE GROUND.
B. BACK FILL BEHIND WALLS AFTER PERMANENT CONSTRUCTION WHEN BRACES ARE IN PLACE OR TEMPORARY BRACING FOR THE WALL IS PROPERLY INSTALLED, AND AFTER ACCEPTANCE OF CONSTRUCTION BELOW FINISH GRADE INCLUDING DAMP-PROOFING, REMOVAL OF CONCRETE FORMWORK, AND REMOVAL OF TRASH AND DEBRIS.
13. 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 TO PREVENT PONDING.
14. FINISH LAWN AREAS TO WITHIN ONE INCH ABOVE OR BELOW REQUIRED SUBGRADE ELEVATIONS. SHAPE SURFACE UNDER WALKS AND PAVEMENTS TO LINE, GRADE, AND CROSS SECTION, WITH NOT MORE THAN 1/2" ABOVE OR BELOW REQUIRED SUBGRADE ELEVATION.
15. GRADE SURFACE UNDER BUILDING SLABS SMOOTH AND EVEN, FREE OF VOIDS. PROVIDE FINAL GRADES WITHIN 1/2" OF THOSE INDICATED WHEN TESTED WITH A 10' STRAIGHT EDGE.
16. PROTECT GRADED AREAS FROM TRAFFIC AND EROSION. REPAIR AREAS WHICH HAVE SETTLED, ERODED, OR BECOME DAMAGED DUE TO CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO OWNER.
17. UNDER FOUNDATIONS, SIDEWALKS, AND PAVEMENTS COMPACT EACH LAYER TO 95% MAXIMUM DRY DENSITY ASTM D698 (STANDARD PROCTOR).
18. UNDER LAWN OR UNPAVED AREAS, COMPACT SUBGRADE AND EACH LAYER TO 85% MAXIMUM DRY DENSITY ASTM D698 (STANDARD PROCTOR).
19. SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE CAPPED AND PIPED TO THE NEAREST STORM SEWER SYSTEM OR NATURAL WATERCOURSE. THE PIPE SHALL BE A MINIMUM OF 6" DIAMETER AND CONFORM TO V.D.O.T. STANDARD SB-1.
20. THE DEPARTMENT OF CONSERVATION AND RECREATION (DCR) REQUIRES ANY LAND DISTURBANCE OF 1 ACRE OR GREATER TO OBTAIN PERMITS THROUGH THEIR OFFICE. CONTACT LEE HILL AT DCR TO DETERMINE PROPER PERMITTING AT 804.786.3998. THIS PERMIT MUST BE APPLIED FOR TWO DAYS PRIOR TO ANY LAND DISTURBANCE ON THE PROPERTY. A COPY OF THE APPLICATION, CHECK AND THE SWPPP MUST BE SUBMITTED TO ROANOKE COUNTY, DENISE SOWDER, DEVELOPMENT REVIEW COORDINATOR.
21. THE CONTRACTOR IS TO ADHERE TO ALL OSHA REGULATIONS FOR DEEP TRENCHES AND LAYING BACK SLOPES FOR RETAINING WALL INSTALLATION.
22. THE DEVELOPER/OWNER IS RESPONSIBLE FOR ACQUIRING ALL REQUIRED LOCAL, STATE, FEDERAL PERMITS INCLUDING, BUT NOT LIMITED TO VDOT, DCR AND DEQ.
23. NO CONSTRUCTION/FIELD CHANGES WITHOUT THE APPROVAL OF THE CONSULTING ENGINEER AND/OR ROANOKE COUNTY. ANY NEW ALIGNMENTS, CHANGES IN GRADES, ALTERNATIVE PIPE SIZES OR MANHOLES AND ESC MEASURES WILL REQUIRE A NEW SET OF PLANS STAMPED BY THE CONSULTING ENGINEER. PLAN SHEETS CAN BE 8.5" X 11" IF THE INFORMATION IS LEGIBLE.

- 4VAC50-30-40 Minimum Standards.
An erosion and sediment control program adopted by a district or locality must be consistent with the following criteria, techniques and methods:
1. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven days to denuded areas that may not be at final grade but will remain dormant for longer than 30 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year. SHOWN ON PLANS.
2. During construction of the project, soil stockpiles and borrow areas shall be stabilized or protected with sediment trapping measures. The applicant is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site as well as borrow areas and soil intentionally transported from the project site. SHOWN ON PLANS.
3. A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that, is uniform, mature enough to survive and will inhibit erosion. SHOWN ON PLANS.
4. Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment shall be constructed as a first step in any land-disturbing activity and shall be made functional before upslope land disturbance takes place. SILT FENCE SHOWN ON PLANS.
5. Stabilization measures shall be applied to earthen structures such as dams, dikes and diversions immediately after installation. EC-2 APPLIED TO THE SCC.
6. Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Slopes that are found to be eroding excessively within one year of permanent stabilization shall be provided with additional slope stabilizing measures until the problem is corrected. SLOPES GREATER THAN 2:1 WILL RECEIVE BLANKET MATTING.
7. Concentrated runoff shall not flow down cut or fill slopes unless contained within an adequate temporary or permanent channel, flume or slope drain structure. A STORMWATER CONVEYANCE CHANNEL IS PLANNED FROM A POINT ON THE SOUTH BOUNDARY LINE TO THE EXISTING STORMWATER MANAGEMENT FACILITY.
8. Whenever water seeps from a slope face, adequate drainage or other protection shall be provided. IF ENCOUNTERED DURING CONSTRUCTION THEN APPROPRIATE MEASURE WILL BE PROVIDED.
9. All storm sewer inlets that are made operable during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment. SHOWN ON PLANS.
10. Before newly constructed stormwater conveyance channels or pipes are made operational, adequate outlet protection and any required temporary or permanent channel lining shall be installed in both the conveyance channel and receiving channel. OUTLET PROTECTION IS EXISTING.
11. Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria: SEE PLANS FOR PROPOSED UTILITY LOCATIONS COORDINATE WITH APPROPRIATE UTILITY COMPANIES. UTILITIES MAY HAVE BEEN INSTALLED IN PHASE I CONSTRUCTION.
a. No more than 500 linear feet of trench may be opened at one time.
b. Excavated material shall be placed on the uphill side of trenches.
c. Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property.
d. Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization.
e. Restoration shall be accomplished in accordance with these regulations.
f. Applicable safety regulations shall be complied with.
12. Where construction vehicle access routes intersect paved or public roads, provisions shall be made to minimize the transport of sediment by vehicular tracking onto the paved surface. Where sediment is transported onto a paved or public road surface, the road surface shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads by shoveling or sweeping and transported to a sediment control disposal area. Street washing shall be allowed only after sediment is removed in this manner. This provision shall apply to individual development lots as well as to larger land-disturbing activities. PREVENT DEBRIS FROM ENTERING THIRLANE ROAD. CONSTRUCTION ENTRANCE IN PLACE WITH PHASE I.
13. All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization or after the temporary measures are no longer needed, unless otherwise authorized by the local program authority. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation. CONTACT ROANOKE COUNTY PRIOR TO REMOVING MEASURES.
14. Properties and waterways downstream from development sites shall be protected from sediment deposition, erosion and damage due to increases in volume, velocity and peak flow rate of stormwater runoff for the stated frequency storm of 24-hour duration in accordance with the following standards and criteria. AN EXISTING STORMWATER MANAGEMENT FACILITY IS IN PLACE. DRAINAGE STRUCTURES ARE SHOWN ON THE PLANS.
a. Concentrated stormwater runoff leaving a development site shall be discharged directly into an adequate natural or man-made receiving channel, pipe or storm sewer system. For those sites where runoff is discharged into a pipe or pipe system, downstream stability analyses at the outfall of the pipe or pipe system shall be performed.
b. Adequacy of all channels and pipes shall be verified in the following manner:
(1) The applicant shall demonstrate that the total drainage area to the point of analysis within the channel is one hundred times greater than the contributing drainage area of the project in question; or
(2) (a) Natural channels shall be analyzed by the use of a two-year storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks; and
(b) All previously constructed man-made channels shall be analyzed by the use of a ten-year storm to verify that stormwater will not overtop its banks and by the use of a two-year storm to demonstrate that stormwater will not cause erosion of channel bed or banks; and
(c) Pipes and storm sewer systems shall be analyzed by the use of a ten-year storm to verify that stormwater will be contained within the pipe or system.
c. If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the applicant shall:
(1) Improve the channel to a condition where a ten-year storm will not overtop the banks and a two-year storm will not cause erosion to the channel bed or banks; or
(2) Improve the pipe or pipe system to a condition where the ten-year storm is contained within the appurtenances; or
(3) Develop a site design that will not cause the pre-development peak runoff rate from a two-year storm to increase when runoff outfalls into a natural channel or will not cause the re-development peak runoff rate from a ten-year storm to increase when runoff outfalls into a man-made channel; or
(4) Provide a combination of channel improvement, stormwater detention or other measures which is satisfactory to the plan-approving authority to prevent downstream erosion.
- d. The applicant shall provide evidence of permission to make the improvements.
- e. All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development of the subject project.
- f. If the applicant chooses an option that includes stormwater detention he shall obtain approval from the locality of a plan for maintenance of the detention facilities. The plan shall set forth the maintenance requirements of the facility and the person responsible for performing the maintenance.
- g. Outfall from a detention facility shall be discharged to a receiving channel, and energy dissipators shall be placed at the outfall of all detention facilities as necessary to provide a stabilized transition from the facility to the receiving channel.
- h. All on-site channels must be verified to be adequate.
- i. Increased volumes of sheet flows that may cause erosion or sedimentation on adjacent property shall be diverted to a stable outlet, adequate channel, pipe or pipe system, or to a detention facility.
- j. In applying these stormwater runoff criteria, individual lots or parcels in a residential, commercial or industrial development shall not be considered to be a separate development project. Instead, the development, as a whole, shall be considered to be a single development project. Hydrologic parameters that reflect the ultimate development condition shall be used in all engineering calculations.
- k. All measures used to protect properties and waterways shall be employed in a manner which minimizes impacts on the physical, chemical and biological integrity of rivers, streams and other waters of the state.

GENERAL NOTES

1. QUALITY CONTROL

ALL WORK DONE IN THE PROPOSED, OR EXISTING RIGHT OF WAY, INCLUDING BUT NOT LIMITED TO STREET GRADING, STREET PAVING AND ALL CONSTRUCTION OF ALL STRUCTURAL COMPONENTS, SHALL BE DONE IN ACCORDANCE WITH CURRENT VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS. ALL MATERIALS USED SHALL BE TESTED IN ACCORDANCE WITH VDOT STANDARD POLICIES. THE DEVELOPER SHALL CONTACT THE OFFICE OF THE RESIDENT ENGINEER, PRIOR TO BEGINNING CONSTRUCTION WITHIN THE PROPOSED OR EXISTING RIGHT OF WAY. AT THAT TIME, THE RESIDENT ENGINEER SHALL PREPARE AN INSPECTION AND TESTING SCHEDULE. THE DEVELOPER WILL PRODUCE TEST REPORTS FROM APPROVED INDEPENDENT LABORATORIES AT THE DEVELOPER'S EXPENSE.

THE PAVEMENT DESIGNS SHOWN ARE BASED ON A SUBGRADE CBR VALUE OF 10 OR GREATER. 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 VALUES BE LESS THAN 10, ADDITIONAL BASE MATERIAL WILL BE REQUIRED IN ACCORDANCE WITH DEPARTMENTAL SPECIFICATIONS.

THE SUBGRADE SHALL BE APPROVED BY THE VIRGINIA DEPARTMENT OF TRANSPORTATION PRIOR TO PLACEMENT OF THE BASE MATERIAL. BASE SHALL BE APPROVED BY THE VIRGINIA DEPARTMENT OF TRANSPORTATION FOR DEPTH, TEMPLATE, AND COMPACTION BEFORE SURFACE IS APPLIED.

2. UTILITIES

ALL NECESSARY LATERALS ALONG WITH PROVISIONS FOR CONDUITS (I.E. WATER, SEWER, STORM, GAS AND TELEPHONE) WILL BE CONSTRUCTED PRIOR TO PAVEMENT BASE MATERIAL.

GAS OR PETROLEUM TRANSMISSION LINES WILL NOT BE PERMITTED WITHIN THE PAVEMENT OR SHOULDER ELEMENT (BACK CURB TO BACK OF CURB) OF THIS DEVELOPMENT. SERVICE LATERALS CROSSING AND PIPE LINES LOCATED OUTSIDE THE PAVEMENT BY THE INSIDE RIGHT OF WAY WILL BE CONSTRUCTED IN CONFORMITY WITH ASAB.31.8 SPECIFICATIONS AND SAFETY REGULATIONS. DISTRIBUTION LINES WITH PRESSURES LESS THAN 120 LBS. ARE UNAFFECTED BY THE ABOVE.

PERMITS WILL BE REQUIRED FOR ALL UTILITIES WITHIN THE STREET RIGHT-OF-WAY PRIOR TO ACCEPTANCE INTO THE SECONDARY HIGHWAY SYSTEM. ANY EASEMENT GRANTED TO A UTILITY COMPANY FOR PLACEMENT OF POWER, TELEPHONE, WATER, SEWER, ETC..., SHALL BE RELEASED PRIOR TO ACCEPTANCE.

3. PRIVATE ENTRANCES

MODIFIED CG-9D GUTTER WILL BE PROVIDED AT ALL ENTRANCES TO PRIVATE LOTS WHERE STANDARD CG-6 CURB AND GUTTER IS APPROVED FOR USE.

DRIVEWAYS CONNECTING TO ROADS WITHOUT CURB AND GUTTER SHALL CONFORM TO THE PAVEMENT, SHOULDER AND SLOPE.

PERMITS WILL BE REQUIRED FOR ALL PRIVATE ENTRANCES CONSTRUCTED ON STREETS RIGHTS OF WAY AFTER ACCEPTANCE INTO THE SECONDARY HIGHWAY SYSTEM.

4. EROSION CONTROL AND LANDSCAPING

CARE SHALL BE TAKEN DURING CONSTRUCTION TO PREVENT EROSION, DUST, AND MUD FROM DAMAGING ADJACENT PROPERTY, CLOGGING DITCHES, TRACKING PUBLIC STREETS, AND OTHERWISE CREATING A PUBLIC OR PRIVATE NUISANCE TO SURROUNDING AREAS.

THE ENTIRE CONSTRUCTION AREA INCLUDING DITCHES, CHANNELS, BACK OF CURBS AND/OR PAVEMENT SHALL BE BACKFILLED AND SEEDED AT THE EARLIEST POSSIBLE TIME AFTER FINAL GRADING.

DRAINAGE EASEMENTS MUST BE DEFINED BY EXCAVATED DITCHES OR CHANNELS FOR THEIR FULL LENGTH TO WELL DEFINED EXISTING NATURAL WATERCOURSES.

ALL VEGETATION AND OVERBURDEN TO BE REMOVED FROM SHOULDER TO SHOULDER PRIOR TO CONDITIONING (CUTTING AND/OR PREPARATION) OF THE SUBGRADE.

5. INTERSECTION PAVEMENT RADIUS

MINIMUM PAVEMENT RADIUS OF 25 FEET REQUIRED AT ALL STREET INTERSECTIONS.

6. CONNECTIONS TO STATE-MAINTAINED ROADS

WHILE THESE PLANS HAVE BEEN APPROVED, SUCH APPROVAL DOES NOT EXEMPT CONNECTIONS WITH EXISTING STATE MAINTAINED ROADS FROM CRITICAL REVIEW AT THE TIME PERMIT APPLICATIONS ARE MADE. THIS IS NECESSARY IN ORDER THAT THE PREVAILING CONDITIONS BE TAKEN INTO CONSIDERATION REGARDING SAFETY ACCOMPANIMENTS SUCH AS TURNING LANES.

7. GUARDRAILS

STANDARD GUARDRAIL WITH SAFETY END SECTIONS MAY BE REQUIRED ON FILLS AS DEEMED NECESSARY BY THE RESIDENT ENGINEER. AFTER COMPLETION OF ROUGH GRADING OPERATIONS, THE OFFICE OF THE RESIDENT ENGINEER, SHALL BE NOTIFIED SO THAT A FIELD REVIEW MAY BE MADE OF THE PROPOSED LOCATIONS.

WHERE GUARDRAILS ARE TO BE INSTALLED THE SHOULDER WIDTH SHALL BE INCREASED IN ACCORDANCE WITH VDOT ROAD AND BRIDGE STANDARDS.

8. STORM DRAINAGE

FIELD REVIEW WILL BE MADE DURING CONSTRUCTION TO DETERMINE THE NEED AND LIMITS OF PAVED DITCHES AND/OR DITCH STABILIZATION TREATMENTS, TO DETERMINE THE NEED AND LIMITS OF ADDITIONAL DRAINAGE EASEMENTS. ALL DRAINAGE EASEMENTS SHALL BE CUT AND MADE TO FUNCTION AS A NATURAL WATERCOURSE. ANY EROSION PROBLEMS ENCOUNTERED IN AN EASEMENT SHALL BE CORRECTED BY WHATEVER MEANS NECESSARY PRIOR TO SUBDIVISION ACCEPTANCE.

DITCH SLOPES ARE TO BE FOUR TO ONE (4:1) FOR SHOULDER WIDTHS OF SIX FEET (6') OR GREATER AND THREE TO ONE (3:1) FOR SHOULDER WIDTHS OF FOUR FEET (4') OR FIVE FEET (5'), UNLESS OTHERWISE SPECIFIED IN THE PLANS.

9. ENTRANCE PERMIT

CONTRACTOR SHALL OBTAIN ENTRANCE PERMIT TO THE EXISTING VIRGINIA DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY FROM THE RESIDENT ENGINEER PRIOR TO ROAD CONSTRUCTION.

10. INSPECTION

AN INSPECTOR WILL NOT BE FURNISHED EXCEPT FOR PERIODIC PROGRESS INSPECTIONS, THE ABOVE MENTIONED FIELD REVIEWS, AND CHECKING FOR REQUIRED STONE DEPTHS. THE DEVELOPER WILL BE REQUIRED TO POST A SURETY TO GUARANTEE THE ROAD FREE OF DEFECTS FOR ONE YEAR AFTER ACCEPTANCE BY THE VIRGINIA DEPARTMENT OF HIGHWAYS AND TRANSPORTATION.

11. STREET MAINTENANCE

THE STREETS SHALL BE PROPERLY MAINTAINED UNTIL ACCEPTANCE. AT SUCH TIME AS ALL REQUIREMENTS HAVE BEEN MET FOR ACCEPTANCE, ANOTHER INSPECTION WILL BE MADE TO DETERMINE THAT THE STREET HAS BEEN PROPERLY MAINTAINED.

12. UNDERGROUND UTILITIES

CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON THE PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT THE ENGINEER IMMEDIATELY IF THE LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS. IF THERE APPEARS TO BE A CONFLICT, AND UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THIS PLAN, CONTACT "MISS UTILITY" OF CENTRAL VIRGINIA AT 1-800-552-7001.

13. REVISIONS OF SPECIFICATIONS AND STANDARDS

APPROVAL OF THESE PLANS WILL BE BASED ON SPECIFICATIONS AND STANDARDS IN EFFECT AT THE TIME OF APPROVAL AND WILL BE SUBJECT, UNTIL COMPLETION OF THE ROADWAY AND ACCEPTANCE BY THE VIRGINIA DEPARTMENT OF TRANSPORTATION, TO FUTURE REVISIONS OF THE SPECIFICATIONS AND STANDARDS.

14. SIGNAGE

A SEPARATE SIGN PERMIT SHALL BE REQUIRED. UP TO 292.5 SQUARE FEET OF SIGNAGE IS PERMITTED WITH THE SITE ONCE THE SUBDIVISION PLAT IS RECORDED.

15. FIRE AND RESCUE

FIRE ALARM SYSTEM IS TO BE INSTALLED IN ACCORDANCE WITH THE NFPA 72, UNIFORM STATEWIDE BUILDING CODE, AND TESTED IN ACCORDANCE WITH THE STATEWIDE FIRE PREVENTION CODE. ANNUNCIATOR OR PANEL TO BE LOCATED AT THE MAIN ENTRANCE.

PROVIDE A KEY BOX FOR FIRE DEPARTMENT EMERGENCY ACCESS IN ACCORDANCE TO THE STATEWIDE FIRE PREVENTION CODE 506.1. ROANOKE COUNTY IS ON THE KNOX BOX SYSTEM. BOXES MAY BE ORDERED ON LINE AT WWW.KNOXBOX.COM

16. CERTIFIED RESPONSIBLE LAND DISTURBER

THE CERTIFIED RESPONSIBLE LAND DISTURBER WILL NEED TO ATTEND THE PRE CONSTRUCTION MEETING AND PROVIDE ROANOKE COUNTY WITH A COPY OF THEIR RLS CERTIFICATE.

17. LANDSCAPING

ROOFTOP AND GROUND MECHANICAL EQUIPMENT SHALL BE SCREENED.

18. FOR WORK WITHIN ROAD RIGHT-OF-WAY, CONTRACTOR SHALL SECURE A HIGHWAY ENTRANCE PERMIT FROM VDOT. THE PERMIT IS REQUIRED PRIOR TO SCHEDULING A CONSTRUCTION MEETING.

SITE TABULATION

PROPOSED USE: SMALL METROPOLITAN SWITCHING STATION	REQUIRED = 30.00'
ZONING CLASSIFICATION: C2	PROVIDED = 30.00'
MINIMUM LOT AREA: 15,000 sq. ft.	LANDSCAPING: 6.0' SCREEN
W/PUBLIC WATER AND SEWER: 129,749 sq. ft.	1 LARGE TREE FOR EVERY 30.00'
PROVIDE (WITH VDOT DEDICATION)	4 SHRUBS FOR EVERY 10.00'
MINIMUM STREET FRONTAGE: 75 ft.	PARKING - SCHEDULE "A"
W/ PUBLIC WATER AND SEWER: 194.17 ft.	REQUIRED: OFFICE-1/300 S.F.
PROVIDED: N/A	INDOOR STORAGE-1/5000 S.F.
MAXIMUM W/D RATIO:	PH 1 & II OFFICE AREA 6,238 SF = 21 SPACES
SETBACK REQUIREMENTS: 30 ft.	FUTURE BLDG. EXP. STORAGE AREA 6,320 SF= 2 SPACES
FRONT YARD: 30 ft. SEE BUFFER YARD	PARKING PROVIDED: 30 SPACES
SIDE YARD: 15 ft.	
REAR YARD:	
SETBACK PROVIDED:	MEETS REQUIREMENTS
ACCESSORY BUILDING REQUIREMENTS:	ACCESSORY BUILDING REQUIREMENTS:
SIDE YARD AT FRONT BUILDING LINE:	MUST BE LOCATED BEHIND FRONT BUILDING LINE
SIDE YARD AT REAR BUILDING LINE:	NONE
REAR YARD:	15 ft.
ACCESSORY BUILDINGS PROVIDED:	EQUIPMENT SHELTER
ACCESSORY STRUCTURE PROVIDED:	30' MONOPOLE WITH MOUNTED MICROWAVE DISH (MAX. UNIT HT. 30')
ALLOWABLE COVERAGE AND HEIGHT:	
MAIN BUILDING: 50%	
MAXIMUM LOT COVERAGE: 90%	
ACCESSORY BUILDING COVERAGE: N/A%	
MAX. BUILDING HEIGHT:	HEIGHT PER ARCH. PLANS 22'-4"
TOTAL COVERAGE AND HEIGHT:	
MAIN BUILDING: 22,700 SF =17.50%	
MAXIMUM LOT COVERAGE: 61,340 SF=47.30%	
MAXIMUM BUILDING HEIGHT:	(SEE ARCHITECTURAL PLANS FOR ANNOTATION) 22.33'
SITE LIGHTING - 20' MOUNTING HEIGHT PER PRESTANDING FIXTURES. LIGHTS ON BUILDING AND FREE STANDING FIXTURES TO BE FITTED WITH DIFFUSERS TO LIMIT LIGHT INTENSITY AT PROPERTY LINES TO A MAXIMUM OF 0.5 FOOT-CANDELS.	

EROSION & SEDIMENT CONTROL PHASING NOTES

1. BEGIN CLEARING OPERATIONS AT THE LIMITS OF DISTURBANCE. SET TREE PROTECTION MEASURES AT THE DRIP LINES OF TREES OUTSIDE EXCAVATION LIMITS.
2. INSTALL ALL PERMETER CONTROLS IMMEDIATELY FOLLOWING CLEARING OPERATION.
3. ESTABLISH ALL PERMETER SILT FENCE MEASURES AS IDENTIFIED ON THE PLANS.
4. IMMEDIATELY FOLLOWING GRADING OF CUT AND FILL SLOPES, ALL SLOPES SHALL BE DRESSED FOR SEEDING BY FILLING OF RILLS AND OTHER EROSION AREAS AND TRACK ROLLED. ALL SLOPES EXCEEDING 3:1 SHALL BE HYDROSEEDED WITH SEED AS SPECIFIED ON THE EROSION CONTROL DETAIL SHEET AND COVERED IMMEDIATELY WITH SLOPE PROTECTION BLANKET MATTING. BLANKET MATTING SHALL BE NORTH AMERICAN GREEN S150 MATTING. INSTALL PER MANUFACTURERS STANDARDS AND SPECIFICATIONS.
5. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL REMOVAL IS APPROVED BY THE INSPECTOR. REMOVE ALL DEVICES COMPLETELY, REDRESS THE AREA AND RESEED.

GENERAL UTILITY NOTES

1. VERIFY LOCATION, SIZE AND ELEVATION FOR ALL UTILITIES IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION, SIZE OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON PLAN, IF THERE APPEARS TO BE A CONFLICT, OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON PLAN.
2. PROVIDE CONSTRUCTION METHODS AND MATERIALS IN ACCORDANCE WITH THE COMMONWEALTH OF VIRGINIA SEWAGE AND WATERWORKS REGULATIONS AND ROANOKE COUNTY BUILDING REGULATIONS WHERE APPLICABLE.
3. A MINIMUM OF THREE (3) FEET OF COVER IS REQUIRED OVER PROPOSED WATER AND SEWER LINES.
4. ALL EXISTING UTILITIES MAY NOT BE SHOWN IN EXACT LOCATION. THE CONTRACTOR SHALL COMPLY WITH THE STATE WATER WORKS REGULATIONS, SECTION 12.05.03, WHERE LINES CROSS.
5. ALL UTILITY LINES SHALL BE STAKED PRIOR TO CONSTRUCTION.
6. REFER TO DETAIL SHEETS FOR BEDDING DETAILS. AFTER THE PIPE HAS BEEN PLACED IN THE TRENCH, THE TRENCH SHALL BE BACKFILLED WITH SELECTED MATERIAL, THOROUGHLY COMPACTED TO 95% OF THE STANDARD PROCTOR (ASTM D698) UNDER PAVEMENT OR CONCRETE SLAB, USING CARE NOT TO DAMAGE THE PIPE.
7. ALL WATER MAINS SHALL BE PROPERLY RESTRAINED WITH PROPER THRUST BLOCKING OR APPROVED ALTERNATIVE.
8. ALL WATER MAINS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH ANWA STANDARDS. COORDINATE INSPECTIONS FOR TESTING WITH GOVERNING JURISDICTION.
9. THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. UTILITIES MAY EXIST WITHIN THE CONSTRUCTION AREA OF THESE PLANS THAT ARE NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND DEPTH OF ALL UTILITIES BEFORE COMMENCING WORK, AND FOR ANY DAMAGES WHICH OCCUR BY HIS FAILURE TO LOCATE SUCH UTILITIES. IF DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THESE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE CONTINUANCE OF SERVICE. CALL MISS UTILITIES AT 1.800.652.7001 (TOLL FREE) 48 HOURS BEFORE DIGGING.
10. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL, GAS, TELEPHONE, CABLE AND FIBER OPTIC INSTALLATIONS WITH THE APPROPRIATE UTILITY COMPANY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL REQUIRED CONDUIT, WHERE UTILITIES DROP TO UNDERGROUND, PROVIDE CONDUIT RUNS THE ENTIRE LENGTH OF ROUTE TO BUILDING CONNECTION POINT.

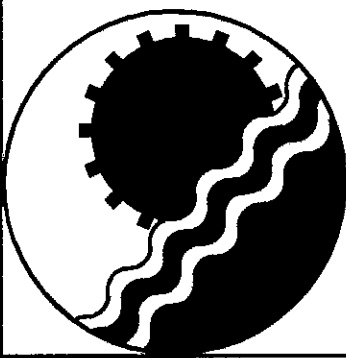
STORM SEWER SPECIFICATIONS

1. ALL STORM SEWER PIPE AND FITTINGS SHALL CONFORM TO THE LATEST STANDARDS & SPECIFICATIONS OF THE MANUFACTURER.
2. THE STORM SEWER PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS AND THESE SPECIFICATIONS. THE PIPE SHALL BE LAID IN A TRUE, STRAIGHT LINE WITH THE BELL ENDS UPSTREAM AND WITH THE INVERT OF THE PIPE BEING THE TRUE ELEVATION AND GRADE OF THE SYSTEM. THE PIPE SHALL BE VISUALLY INSPECTED FOR DEFECTS BEFORE LOWERING THE PIPE INTO THE TRENCH. FIELD CUTOFF OF THE PIPE SHALL BE DONE IN A NEAT MANNER, SO AS TO LEAVE A SMOOTH END AT RIGHT ANGLES TO THE AXIS OF THE PIPE.
3. TRENCHES SHALL BE EXCAVATED IN STRAIGHT LINES AND SHALL BE OF SUFFICIENT WIDTH TO PERMIT THE PROPER INSTALLATION OF BRACING, SHORING OR SHEETING. TRENCH WIDTH SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATION. THE BOTTOM OF THE PIPE TRENCH SHALL BE EXCAVATED TO A MINIMUM OVER DEPTH OF 4 INCHES BELOW THE BOTTOM OF THE PIPE, TO PROVIDE FOR THE COMPACTED BEDDING MATERIAL.
4. BACKFILL MATERIAL SHALL BE EITHER APPROVED EXCAVATED MATERIAL OR APPROVED SUITABLE MATERIAL FROM OTHER SOURCES THAT IS FREE OF ORGANIC MATTER OR OTHER OBJECTIONABLE MATERIAL. BACKFILL FROM PIPE BEDDING TO MINIMUM ONE FOOT ABOVE THE TOP OF THE PIPE SHALL BE FREE OF STONES LARGER THAN 2 INCHES AND SHALL BE PLACED IN 6 INCH LAYERS AND COMPACTED WITH HAND TAMPERS. BACKFILL FROM THIS POINT TO THE TOP OF THE TRENCH SHALL BE FREE OF STONES LARGER THAN 4 INCHES AND SHALL BE PLACED IN LAYERS NOT TO EXCEED 8 INCHES AND COMPACTED WITH MECHANICAL TAMPERS.

BUILDING ADDITION PHASE II NOTES:
1. THESE PLANS ARE FOR THE PROPOSED 49,082 SF BUILDING ADDITION AND ACCESSORY STRUCTURES. THE PROPOSED BUILDING ADDITION AND SITE PLAN MODIFICATIONS ARE SHOWN IN BOLD LINE STYLES. ITEMS SHOWN AS SHADED OR LIGHTER IN CONTRAST WERE PREVIOUSLY APPROVED FOR CONSTRUCTION IN AUGUST 2004. THE MAJORITY OF THE SHADED ITEMS ARE ALREADY INSTALLED. THIS SITE IS CURRENTLY UNDER CONSTRUCTION AND PORTIONS OF THE APPROVED DESIGN ARE IN PLACE. SOME ITEMS THAT HAVE BEEN INSTALLED IN THE AREA OF THE PROPOSED ADDITION MAY NEED TO BE REMOVED OR RELOCATED AS SHOWN. SEE PLANS DATED 2-17-05 FOR INFORMATION ON PREVIOUSLY APPROVED ITEMS.
2. REFER TO THE LATEST ARCHITECTURAL PLANS BY TENG AND ASSOCIATES FOR THE LOCATION OF UTILITIES, ALARMS, AND FIRE DEPARTMENT CONNECTIONS. RELOCATE UTILITIES AND ASSOCIATED APPURTENANCES AS NECESSARY TO ACCOMMODATE THE ADDITION.

VERIZON WIRELESS BUILDING ADDITION
PHASE II THIRLANE ROAD
NOTES
ROANOKE COUNTY, VIRGINIA

AS SHOWN
MAR. 27, 2006
PROJECT: 05083
C-002



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