

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 ON-SITE TESTING, THE GEOTECHNICAL ENGINEER SHALL MAKE RECOMMENDATIONS REGARDING THE ON-SITE 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 (ASTM698), 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 SEEDING.
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. CONFORM 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 SUSTAINED 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. A PERMIT FROM THE DEPARTMENT OF ENVIRONMENTAL QUALITY IS REQUIRED FOR THIS PROJECT. CONTACT KEVIN HARLOW TO DETERMINE PROPER PERMITTING AT (540) 562-6788. THE PERMIT MUST BE APPLIED FOR TWO DAY PRIOR TO ANY LAND DISTURBANCE ON THIS SITE. A COPY OF THE APPLICATION MUST BE SUBMITTED TO ROANOKE COUNTY DEPARTMENT OF DEVELOPMENT REVIEW OFFICE WITHIN FIVE WORKING DAYS OF THE E & S PERMIT ISSUANCE DATE, OR THE PERMIT WILL BE SUBJECT TO A STOP WORK ORDER BEING PLACED ON THE PROPERTY.
21. THE CONTRACTOR IS TO ADHERE TO ALL OSHA REGULATIONS FOR DEEP TRENCHES AND LAYING BACK SLOPES FOR RETAINING WALL INSTALLATION.

SITE DEMOLITION NOTES

1. COORDINATE DEMOLITION WITH OWNER AND EFFECTED ADJACENT COMMERCIAL PROPERTY PRIOR TO COMMENCING WORK.
2. PRIOR TO COMMENCING DEMOLITION AND THROUGHOUT THE ENTIRE CONSTRUCTION TERM PROVIDE SAFETY FENCING AT THE CONSTRUCTION LIMITS TO DETER PEDESTRIAN TRAFFIC FROM ENTERING THE CONSTRUCTION AREA. ENSURE THAT FENCING REMOVED FOR THE ON-SITE DELIVERY OF MATERIALS AND EQUIPMENT IS PROMPTLY REPLACED AT THE EARLIEST POSSIBLE TIME.
3. INSTALL ALL PERIMETER EROSION CONTROL DEVICES PRIOR TO DEMOLITION. REFER TO EROSION SEDIMENT CONTROL PLAN.
4. DO NOT LEAVE STRUCTURES IN THE PROCESS OF DEMOLITION IN AN UNSTABLE CONDITION SUCH THAT FAILURE WOULD RISK IMPACTING ANY OFF-SITE AREAS, EXISTING STRUCTURES, VEHICLES OR PERSONS. SECURE ALL DEMOLITION AREAS AT THE END OF THE WORK DAY IN A MANNER ADHERING TO O.S.H.A. AND STATE REGULATIONS.
5. NOTIFY THE OWNER PRIOR TO UTILITIES DEMOLITION IN ORDER TO MINIMIZE DISRUPTION OF DAILY OPERATIONS.
6. WHERE NECESSARY PROVIDE BY-PASS CONNECTIONS TO MAINTAIN CONTINUITY OF UTILITIES SERVICE THROUGH DEMOLITION AND CONSTRUCTION. CAP AND PLUG EXISTING UTILITIES WHERE REQUIRED. THIS INCLUDES CONSTRUCTION OF NEW GAS AND TELEPHONE EXTENSIONS BEFORE DEMOLITION OF CURRENT SERVICE LINES.
7. SAW CUT PAVED AND CONCRETE AREAS TO BE PARTIALLY DEMOLISHED AT THE APPROPRIATE LIMITS TO PRECLUDE A ROUGH REJOINING OF MATERIALS.
8. REMOVE DEMOLISHED MATERIALS FROM THE CONSTRUCTION AREA IMMEDIATELY AND DISPOSE OF OFF-SITE IN A LOCATION AND MANNER ACCEPTABLE TO ALL GOVERNING AGENCIES DICTATING DISPOSAL LAW. IF HAZARDOUS MATERIALS ARE ENCOUNTERED DURING DEMOLITION OPERATIONS, COMPLY WITH ALL REGULATIONS, LAWS AND ORDINANCES CONCERNING REMOVAL, HANDLING AND PROTECTION AGAINST EXPOSURE OR ENVIRONMENTAL POLLUTION.
9. BURNING OF REMOVED MATERIAL IS NOT PERMITTED.
10. AFTER COMPLETION OF DEMOLITION WORK SECURE THE AREA FOR THE COMMENCEMENT OF FINAL CONSTRUCTION AND EXCAVATIONS.

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 USUALLY INSPECTED FOR DEFECTS BEFORE LOWERING THE PIPE INTO THE TRENCH. FIELD CUTTING 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 GRADING, 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.

EROSION & SEDIMENT CONTROL NOTES

1. UNLESS OTHERWISE INDICATED ALL VEGETATIVE AND STRUCTURAL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VA. EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
2. THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
3. ALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED AS THE FIRST STEP IN GRADING.
4. A COPY OF THE APPROVED EROSION CONTROL PLANS SHALL BE KEPT ON SITE AT ALL TIMES.
5. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE ROANOKE COUNTY CONSTRUCTION INSPECTOR.
6. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL DEVICES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND UNTIL FINAL STABILIZATION IS ACHIEVED.
7. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DISTURBED AREAS WITHIN SEVEN DAYS OF REACHING FINAL GRADES. TEMPORARY, DENuded AREAS THAT ARE TO BE EXPOSED LONGER THAN THIRTY DAYS SHALL BE SEEDED WITH TEMPORARY VEGETATION.
8. DURING CONSTRUCTION, SOIL STOCKPILES SHALL BE STABILIZED AND PROTECTED WITH SEDIMENT TRAPPING MEASURES AND STABILIZED WITH TEMPORARY VEGETATION IF UNUSED FOR 30 DAYS OR LONGER.
9. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH MAJOR RAINFALL EVENT. ANY REPAIRS NECESSARY SHALL BE MADE IMMEDIATELY TO ENSURE THE PROTECTION OF OFFSITE PROPERTIES.
10. THE CONTRACTOR IS REQUIRED TO REMOVE ALL SILT FROM STREAMS AND DRAINAGE WAYS PRIOR TO BOND RELEASE.
11. TEMPORARY AND PERMANENT SEEDING SHALL ADHERE TO THE SPECIFICATIONS SHOWN HEREON.
12. REFER TO THE MINIMUM STANDARD REFERENCES FOLLOWING FOR STATE SPECIFIC REFERENCES TO EROSION SEDIMENT CONTROL REQUIREMENTS.
13. MINIMUM STANDARD # 3: PERMANENT STABILIZATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE, AND WILL INHIBIT EROSION. AREAS THAT DO NOT BECOME ESTABLISHED WILL REQUIRE ADDITIONAL STABILIZATION MEASURES.
14. MINIMUM STANDARD # 7 & 8: CUT AND FILL SLOPES MUST BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT BEGIN TO ERODE EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION MUST BE PROVIDED WITH ADDITIONAL STABILIZATION UNTIL THE PROBLEM IS CORRECTED.
15. MINIMUM STANDARD # 11: BEFORE NEWLY CONSTRUCTED STORM WATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT LINING MUST BE INSTALLED IN BOTH CONVEYANCE AND RECEIVING CHANNELS. ALL CHANNELS AND OUTLETS MUST BE CHECKED FOR ADEQUACY AND EROSION CONTROL MEASURES. (SEE MIN. STD. NO. 19 BELOW)
16. MINIMUM STANDARD #16: UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
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. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH E&S REGULATIONS.
E. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.
17. MINIMUM STANDARD # 17: ANY SEDIMENT WHICH IS TRACKED ONTO PUBLIC ROADS MUST BE REMOVED FROM THE ROAD DAILY, BY EITHER SHOVELING OR SWEEPING, AND TRANSPORTED TO AN APPROVED DISPOSAL AREA.
18. MINIMUM STANDARD # 18: TRAPPED SEDIMENT AND DISTURBED AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY PRACTICES MUST BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
19. ANY OFFSITE AREAS, SUCH AS BORROW OR WASTE AREAS, THAT ARE TO BE DISTURBED AS A RESULT OF THIS PROJECT, MUST BE ADDRESSED IN THE PLAN AND SUCH ACTIVITY MUST BE CONDUCTED AND STABILIZED ACCORDING TO THE REGULATIONS OF THE HANDBOOK. THE LOCATION OF BORROW OR FILL AREAS MUST BE PROVIDED TO ROANOKE COUNTY ENGINEERING AND INSPECTIONS AND MAY REQUIRE AN EROSION CONTROL PLAN.

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 PERIMETER CONTROLS IMMEDIATELY FOLLOWING CLEARING OPERATION.
3. ESTABLISH ALL PERIMETER 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 5150 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 AWWA 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 1.800.552.7001 (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.

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 INSIDE THE RIGHT OF WAY WILL BE CONSTRUCTED IN CONFORMITY WITH ASA.B.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.
- DRYWAYS 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 SEEDD 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 TO 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. IF CONTACT WITH ENGINEER IMMEDIATELY IF LOCATION, SIZE 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 PRE CONSTRUCTION MEETING.

SITE TABULATION

ZONING CLASSIFICATION: C2		BUFFER YARD REQUIREMENTS: REQUIRED = 30.00' PROVIDED = 30.00' LANDSCAPING: 6.0' SCREEN 1 LARGE TREE FOR EVERY 30.00' 4 SHRUBS FOR EVERY 10.00'
MINIMUM LOT AREA: W/PUBLIC WATER AND SEWER: PROVIDED(WITH VDOT DEDICATION)	15,000 sq. ft. 129,749 sq. ft.	
MINIMUM STREET FRONTAGE: W/ PUBLIC WATER AND SEWER: PROVIDED:	75 ft. 194.17 ft.	
MAXIMUM W/D RATIO:	N/A	PARKING -- SCHEDULE "A" REQUIRED: OFFICE--1/300 S.F. INDOOR STORAGE--1/5000 S.F.
SETBACK REQUIREMENTS: FRONT YARD: SIDE YARD: REAR YARD:	30 ft. NONE 15 ft.	= 11 SPACES = 2 SPACES = 20 SPACES
		PROVIDED:

SETBACK REQUIREMENTS: (BUILDING EXCEEDING 45' MAXIMUM)
MINIMUM PER ZONING DISTRICT:MAXIMUM 10' ABOVE (ANTENNA STRUCTURE)
MAXIMUM 45' BUILDING
HEIGHT. PROVIDE 2'
SETBACK FOR EACH 1'
OF HEIGHT ABOVE 45'

SETBACK PROVIDED:
MEETS REQUIREMENTS
SEE SETBACKS ABOVE.

ACCESSORY BUILDING REQUIREMENTS:
SIDE YARD AT FRONT BUILDING LINE:
SIDE YARD AT REAR BUILDING LINE:
REAR YARD:

MUST BE LOCATED BEHIND FRONT BUILDING LINE
NONE
15 ft.

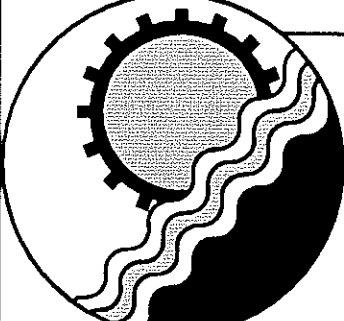
ACCESSORY BUILDINGS PROVIDED:

NONE PROPOSED

ALLOWABLE COVERAGE AND HEIGHT:
MAIN BUILDING: 50%
MAXIMUM LOT COVERAGE: 90%
ACCESSORY BUILDING COVERAGE: N/A%
MAX. BUILDING HEIGHT: 45 ft. + 10 FEET FOR ANTENNA STRUCTURE

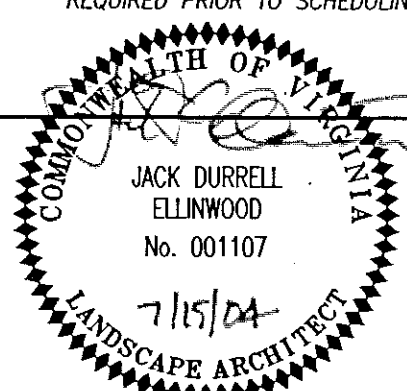
PROPOSED COVERAGE AND HEIGHT:
MAIN BUILDING: 13.25%
MAXIMUM LOT COVERAGE: 29.9%
MAXIMUM BUILDING HEIGHT: 40.0' (SEE ARCHITECTURAL PLANS FOR ANNOTATION)

SITE LIGHTING -- 20' MOUNTING HEIGHT PER FREESTANDING 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 FOOTCANDLES.



ENGINEERING CONCEPTS, INC.

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No.	Revision	By	Appd	Date	Drawn
1	COUNTY COMMENTS OF MAY 18, 2004	DRB	JDE	6-02-04	JSC/WTR
2	COUNTY COMMENTS OF JUNE 22,2004	MSM	JDE	7-15-04	Designed JDE
					Checked JDE
					Approved JDE

VERIZON WIRELESS
THIRLANE ROAD SWITCHING CENTER

GENERAL NOTES
ROANOKE COUNTY, VIRGINIA

NOT SHOWN
JULY, 2004
PROJECT: 04016
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