

EROSION & SEDIMENT CONTROL NOTES

1. 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.
2. SCHEDULE A PRECONSTRUCTION MEETING INVOLVING THE ENGINEER, DEVELOPER'S REPRESENTATIVE AND SELECTED CONTRACTOR ON SITE PRIOR TO BEGINNING CONSTRUCTION.
3. ADHERE TO THE EROSION AND SEDIMENT CONTROL NARRATIVE AS PART OF THIS CONTRACT. INSTALL EROSION CONTROL DEVICES AS PER THE NARRATIVE/PLAN.
4. 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.
5. SEED AND MULCH OR TEMPORARILY STABILIZE ALL DENUDED AREAS WITHIN SEVEN DAYS OF DISTURBANCE. SEED TRENCHES IMMEDIATELY FOLLOWING BACKFILL.
6. OBTAIN ALL NECESSARY PERMITS PRIOR TO BEGINNING CONSTRUCTION.
7. INSPECT ESC MEASURES WEEKLY AND AFTER EACH RAINFALL TO INSURE PROPER FUNCTIONING.
8. AVOID CONSTRUCTION TRAFFIC IN NATURAL STREAMS AND DRAINAGE WAYS WHENEVER POSSIBLE.
9. REMOVE ALL SILT FORM STREAMS AND DRAINAGE WAYS PRIOR TO BOND RELEASE.
10. SEED OR TEMPORARILY STABILIZE DISTURBED AREAS WITHIN SEVEN DAYS OF DISTURBANCE.

GRADING NOTES

1. REFER TO BUILDING PLANS FOR SUBGRADE AND UTILITY TRENCHES WITHIN 5' OF BUILDING ENVELOPE.
2. PROTECT EXISTING TREES AND OTHER VEGETATION INDICATED TO REMAIN IN PLACE AGAINST UNNECESSARY CUTTING, BREAKING OR SKINNING OF ROOTS, SKINNING OR BRUISING OF BARK, SMOTHERING OF TREES BY STOCKPILING CONSTRUCTION MATERIALS OR EXCAVATED MATERIALS WITHIN DRIP LINE, EXCESS FOOT OR VEHICULAR TRAFFIC, OR PARKING OF VEHICLES WITHIN DRIP LINE. PROVIDE TEMPORARY GUARDS TO PROTECT TREES AND VEGETATION TO BE LEFT STANDING.
 - (A) WATER TREES AND OTHER VEGETATION TO REMAIN WITHIN LIMITS OF CONTRACT WORK AS REQUIRED TO MAINTAIN THEIR HEALTH DURING COURSE OF CONSTRUCTION OPERATIONS.
 - (B) PROVIDE PROTECTION FOR ROOTS OVER 1-1/2 INCH DIAMETER THAT ARE CUT DURING CONSTRUCTION OPERATIONS. COAT CUT FACES WITH AN EMULSIFIED ASPHALT, OR OTHER ACCEPTABLE COATING, FORMULATED FOR USE ON DAMAGED PLANT TISSUES. TEMPORARILY COVER EXPOSED ROOTS WITH WET BURLAP TO PREVENT ROOTS FROM DRYING OUT; COVER WITH EARTH AS SOON AS POSSIBLE.
 - (C) USE ONLY HAND METHODS FOR GRUBBING INSIDE DRIP LINE OF TREES INDICATED TO REMAIN.
 - (D) TREES SHALL REMAIN UNLESS INDICATED TO BE REMOVED.
3. NOTIFY THE PROJECT ENGINEER 24 HOURS IN ADVANCE OF BEGINNING CLEARING AND GRADING OPERATIONS.
4. 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:
 - ANY LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS.
 - IF THERE APPEARS TO BE ANY CONFLICT.
 - UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THE PLANS.TO MISS UTILITIES, CALL "MISS UTILITY" OF VIRGINIA (TOLL FREE) 1-800-552-7001 48 HOURS BEFORE YOU DIG. THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE CAUSED TO ANY UTILITY, PUBLIC OR PRIVATE, AS A RESULT OF THIS WORK.
5. REPAIR ALL DAMAGE CAUSED TO ANY UTILITY, PUBLIC OR PRIVATE, AS A RESULT OF THIS WORK, AT NO ADDITIONAL COST TO OWNER.
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 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.
8. CUT SURFACE UNDER PAVEMENTS TO COMPLY WITH CROSS SECTIONS, ELEVATIONS, AND GRADES AS INDICATED.

9. EXCAVATE TRENCHES TO UNIFORM WIDTH CONFORMING TO VDOT STANDARD PB-1 FOR STORM DRAINAGE PIPING AND UB-1 FOR SANITARY SEWER AND WATER. BACKFILL 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 THEN 35° F (1° C).

BACKFILLING:

- (A) COMPACT THE BACKFILL AROUND THE OUTSIDE OF EACH BUILDING TO A MINIMUM OF 85% OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D 1557 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) BACKFILL BEHIND WALLS AFTER PERMANENT CONSTRUCTION WHICH BRACES THE WALL IS IN PLACE OR TEMPORARY BRACING OF 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 AND 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.

PLACE ALL FILL AND BACKFILL AS CONTROLLED FILL AS FOLLOWS:

- (A) ESTABLISH SUITABLE SUBGRADE CONDITIONS PRIOR TO PLACING FILL BY PROOFROLLING, UNDERCUTTING AND COMPACTING AS NECESSARY.
- (B) PLACE FILL MATERIALS IN LAYERS NOT MORE THAN 8" IN LOOSE DEPTH FOR HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4" FOR HAND TAMPERS.
- (C) 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.
- (D) COMPACT SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D 1557 (STANDARD PROCTOR):
 - (i) 95% UNDER FOUNDATIONS, SLABS, WALKS, AND PAVEMENTS
 - (ii) 85% UNDER LAWN OR UNPAVED AREAS

18. SPREAD TOPSOIL TO A DEPTH OF 4" OVER ALL DISTURBED AREAS NOT RECEIVING WALKS, PAVEMENT, OR BUILDING, 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 PER EROSION CONTROL NOTE 5.

19. OWNER SHALL EMPLOY QUALIFIED SOILS TESTING LABORATORY TO INSPECT EARTHWORK OPERATIONS. NOTIFY LABORATORY PRIOR TO PERFORMING EARTHWORK OPERATIONS.

20. DO NOT REMOVE ROCK WITHOUT AUTHORIZATION FROM THE OWNER.

21. REMOVE EXCESS AND UNSUITABLE MATERIAL AND DEBRIS FROM OWNER'S PROPERTY AND LEGALLY DISPOSE OF OFF-SITE.

DIMENSIONAL NOTES

1. DIMENSIONS SHOWN ARE TO BOTTOM FACE OF CURB, FACE OF WALL, CENTER OF PAINTED LINE.
2. CURB RADII ARE 5' UNLESS OTHERWISE INDICATED.
3. PROVIDE 4'-0" WIDE ASPHALTIC CEMENT SIDEWALKS.
4. REFER TO BUILDING PLANS FOR ACTUAL BUILDING DIMENSIONS.

GENERAL UTILITY NOTES

1. SUPPLY AND INSTALL ALL MATERIALS AND METHODS FOR WATERLINES, SANITARY SEWERS AND STORM DRAINAGE IN ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS OF THE CITY OF ROANOKE AND THE VIRGINIA DEPARTMENT OF TRANSPORTATION "ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS", LATEST EDITION.
2. OBTAIN ALL REQUIRED PERMITS AND NOTIFY APPROPRIATE OFFICIALS 48 HOURS PRIOR TO COMMENCEMENT OF WORK. OBTAIN INFORMATION FROM THE CITY CONCERNING PERMITS AND CONNECTIONS TO EXISTING LINES.
3. ALL WORK SHALL BE SUBJECT TO INSPECTION BY THE CITY. NOTIFY APPROPRIATE OFFICIALS PRIOR TO COMMENCEMENT OF WORK.
4. GRADE LINES ON PROFILES, WHERE APPLICABLE, DENOTE FINISHED GRADE OF THE CENTERLINE OF THE UTILITY.
5. SITE SHALL BE TO SUBGRADE PRIOR TO INSTALLATION OF UTILITIES. ALL UTILITIES SHALL BE IN PLACE PRIOR TO PLACEMENT OF PAVEMENT BASE MATERIAL.
6. USE SELECT MATERIAL FREE FROM FROST, LARGE CLOUDS, STONES, AND DEBRIS FOR BACKFILL FROM THE BOTTOM OF THE TRENCH TO TWELVE (12) INCHES ABOVE THE PIPE.

7. MINIMIZE ANY DISTURBANCE TO EXISTING WATER SERVICE, SEWER LINES OR ANY OTHER UTILITY DURING CONSTRUCTION AND PROVIDE QUALITY WORKMANSHIP.

8. MAKE ALL PIPE JOINTS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE CITY'S SPECIFICATIONS.

9. PROVIDE EIGHTEEN (18) INCHES VERTICAL SEPARATION FOR CROSSINGS OF WATER AND SEWER PIPES.

10. SEWER AND WATER TAPS SHALL BE LOCATED BY THE CONTRACTOR AND MADE BY THE CITY AT THE DEVELOPER'S EXPENSE.

11. LOCATE AND UNCOVER VALVE VAULTS AND MANHOLES AFTER PAVING AND ADJUST TO FINAL GRADE, IF NECESSARY.

12. DO NOT BUILD STRUCTURES OR PLANT TREES IN UTILITY EASEMENTS.

13. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS WHERE UTILITIES ENTER THE BUILDINGS.

PAVING NOTES

1. PROVIDE 6" THICK 21B BASE COURSE AND 2" THICK SM-2A WEARING COURSE, FINISHED COMPACTED THICKNESSES.

2. SAW CUT EDGE OF EXISTING PAVEMENT WHERE NEW IS TO MEET EXISTING.

3. PROVIDE SMOOTH TRANSITION FROM EXISTING TO NEW PAVEMENT AND CURB.

4. THE PAVEMENT DESIGN SHOWN IS BASED ON A SUBGRADE RATING OF CBR10 OR GREATER. SHOULD THE ACTUAL SUBGRADE CBR VALUES BE LESS THAN 10, PROVIDE ADDITIONAL BASE IN ACCORDANCE WITH CITY SPECIFICATIONS AND THE SOILS ENGINEER.

5. DO NOT LAY BASE STONE PRIOR TO COMPLETION OF UTILITY WORK WITHIN PAVING LIMITS.

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

The project consists of the construction of a two story, 16 unit motel and associated parking. No public utilities are planned. Total project area is 1.042 acres. Total disturbed area is approximately 0.5 acres.

EXISTING SITE CONDITIONS

The site is now vacant with several large trees and grass. The site slopes from southwest to northeast at approximately 4%.

ADJACENT PROPERTIES

The site is bordered on the northeast by vacant property (zoned residential), on the southeast by single-family residential, on the southwest and northwest by commercial property.

OFF-SITE AREAS

The vacant property to the northeast will receive runoff from the site.

SOILS

On-site soils were identified on the "Generalized Soil Parent Material Map" of Roanoke, Virginia. Soils in this area are generally identified as Elbrook complex, classified as fair to good for road beds and large buildings.

CRITICAL EROSION AREAS

Protecting the existing trees to remain is of critical importance.

EROSION AND SEDIMENT CONTROL MEASURES

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

1. Construction Entrance - 3.02

A gravel construction entrance to will prevent mud and dust entering Lanford Street.

2. Silt Fence - 3.05

Silt fence will protect downstream property from sediment laden runoff.

3. Temporary Seeding - 3.31

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

4. Tree Preservation and Protection - 3.38

Every precaution will be made to preserve existing trees.

MANAGEMENT STRATEGIES

1. Construction will be sequenced so that grading operations can begin and end as quickly as possible.
2. The gravel construction entrance will be installed as a first step in construction.
3. Tree protection will be installed as a second step in construction.
4. Temporary seeding or other stabilization will follow immediately after grading.
5. The job superintendent shall be responsible for the installation and maintenance of all erosion and sediment control and tree protection practices.
6. After achieving adequate stabilization, the temporary erosion and sediment control measures will be cleaned and removed.

PERMANENT STABILIZATION

All areas disturbed by construction 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.

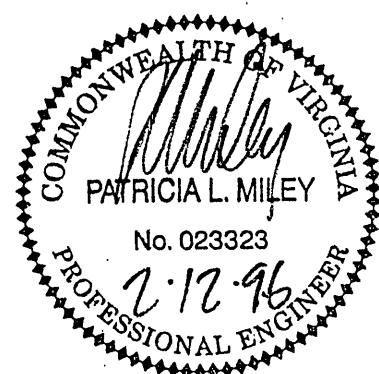
STORMWATER MANAGEMENT

See attached calculations. Stormwater will surface flow from west of the site to a small pond which will discharge to the north. Undisturbed areas will sheet flow to the north.

MAINTENANCE

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

1. 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.
2. The seeded areas will be checked regularly to ensure that a good stand is maintained. Areas should be fertilized and reseeded as needed.
3. 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 within 48 hours.



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NOTES
AFFORDABLE
EFFICIENCY INNS
LANFORD STREET PHASE II
ROANOKE, VIRGINIA

DRAWN BY MM

DESIGNED BY PLM

CHECKED BY PLM

DATE DECEMBER 2, 1996

REVISIONS
△ FEB. 1, 1996
△ FEB 23, 1996

SCALE AS NOTED
SHEET NO.

C4

JOB NO.
95115