

## 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 (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 TESTS 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.

C. ENSURE PROPER PLACEMENT AND COVER OF ALL REINFORCEMENT.

D. REMOVE ALL LOOSE MATERIALS FROM THE EXCAVATION PRIOR TO PLACEMENT OF CONCRETE.

E. PROVIDE A MINIMUM OF 2'-0" FROM THE FINISHED GRADE TO TOP OF ALL EXTERIOR WALL FOOTINGS.

F. 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.

G. IF ROCK IS ENCOUNTERED IN A FOOTING EXCAVATION, UNDERCUT IT A MINIMUM OF 12" BELOW THE BOTTOM OF THE FOOTING 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. DEWATERING OPERATIONS SHALL OUTFALL TO AN ACCEPTABLE SEDIMENT-TRAPPING DEVICE AT ALL TIMES.

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 FOOTING 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.

## STORM SEWER SPECIFICATIONS:

1. ALL STORM SEWER PIPE AND FITTINGS SHALL BE AS CLASSIFIED ON THE PROFILE DRAWINGS.

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 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 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.

## UTILITY COMPANY CONTACTS

AEP - KEITH FREEMAN  
COX COMMUNICATIONS - STEVE BOWER 540-293-2683  
ROANOKE GAS - BRETT BENNETT 540-777-3971

## GENERAL SITE NOTES:

1. THIS PROPERTY IS IN A DEFINED ZONE X (OUTSIDE FLOOD) PER MAP 51161C00264.

2. TOPOGRAPHIC INFORMATION FROM RON CLARKE SURVEYING, DATED MARCH, 2010.

3. ARCHITECT OF RECORD: JOHN FULTON ASSOCIATES, LLC REFER TO ARCHITECTURAL PLANS FOR BUILDING CONSTRUCTION.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS. A STREET OPENING PERMIT MAY BE REQUIRED BEFORE PLACEMENT OF THE CONSTRUCTION ENTRANCE.

5. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION TO ELIMINATE THE POSSIBILITY OF ANY DISTURBANCE OR DAMAGE TO PUBLIC OR PRIVATELY OWNED UTILITIES, STRUCTURES, OTHER FACILITIES OR OBSTRUCTION RESULTING FROM HIS ACTIVITIES. TO THIS END, CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, TAKE ALL MEASURES NECESSARY TO PROVIDE, AND SHALL BE SOLELY RESPONSIBLE FOR, TEMPORARY SUPPORT AND SHORING, ADEQUATE PROTECTION, AND MAINTENANCE OF CONTINUOUS OPERATION OF ALL UNDER AND ABOVE GROUND UTILITY SERVICES. THE CONTRACTOR SHALL CALL MISS UTILITY AT 1-800-552-7001 48 HOURS PRIOR TO DIGGING. ALL UTILITY TIE-INS ARE TO BE COORDINATED WITH THE APPROPRIATE PUBLIC OR PRIVATE UTILITY AUTHORITY BEFORE COMMENCING WORK ON EXISTING UTILITIES. THE CONTRACTOR SHALL SUPPLY ALL UTILITY COMPANIES WITH APPROVED PLAN COPIES FOR COORDINATION OF EXTENSION AND TIE-IN EFFORTS.

6. SITE CONDITIONS MAY NECESSITATE SLIGHT DEVIATIONS IN ALIGNMENT, GRADE, AND/OR LOCATION OF NEW FACILITIES FROM THE PLAN ALIGNMENT. THE CONTRACTOR SHALL CONSTRUCT THE NEW FACILITIES TO SUCH DEVIATIONS AS DIRECTED BY THE ENGINEER WITHOUT ADDITIONAL COST OR FINE TO THE OWNER. SHOULD PLAN DEVIATIONS BE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE SITE DESIGNER PRIOR TO UNDERTAKING ANY REVISION.

7. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE CURRENT BOCA AND/OR STATE AND LOCAL BUILDING CODES AS WELL AS THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE CITY OF ROANOKE.

8. THE CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION AREA IN A SAFE AND ACCEPTABLE MANNER AND SHALL BE RESPONSIBLE FOR REMEDIATING ANY DAMAGES RESULTING FROM HIS FAILURE TO DO SO.

9. THE CONTRACTOR SHALL MAINTAIN LIMITS OF CONSTRUCTION WITHIN THE PROPERTY BOUNDARIES OR EASEMENTS AS INDICATED.

10. AN APPROVED SET OF PLANS SHALL BE KEPT ON THE SITE AT ALL TIMES.

11. ALL CONSTRUCTION DEBRIS SHALL BE CONTAINERIZED IN CONFORMANCE WITH THE VIRGINIA LITTER CONTROL ACT AND DISPOSED OF IN A MANNER AND LOCATION ACCEPTABLE TO THE GOVERNING JURISDICTION. AT LEAST ONE TRASH RECEPTACLE SHALL BE ON-SITE DURING CONSTRUCTION.

12. TEMPORARY TOILETS SHALL BE PROVIDED ON-SITE AT A RATIO OF ONE TOILET PER 30 WORKERS DURING THE CONSTRUCTION PERIOD.

13. GRADE STAKES SHALL BE SET FOR ROADWAY, CURB & GUTTER, CULVERTS, AND STORM SEWER.

14. SEE THE ARCHITECTURAL PLANS FOR UTILITY LOCATIONS ENTERING THE BUILDING AND DOWNSPOUT LOCATIONS.

15. CONTRACTOR SHALL HAVE BENCHMARKS SET ON-SITE BY A LICENSED LAND SURVEYOR PRIOR TO CONSTRUCTION.

16. ON-SITE UTILITY LINES ARE PRIVATELY OWNED AND MAINTAINED.

17. A SEPARATE PERMIT IS REQUIRED FOR ANY SIGNS. CONTRACTOR TO COORDINATE PROPOSED SIGN LOCATION WITH THE OWNER, ARCHITECT AND CITY OF ROANOKE.

18. 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.

19. THE EXISTING UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE RECORD 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.

20. CONTRACTOR SHALL COORDINATE ALL UTILITY RELOCATIONS WITH THE APPROPRIATE UTILITY COMPANIES.

21. PAVEMENT RADII ARE 5'-0" UNLESS NOTED OTHERWISE. DIMENSIONS ARE FROM FACE TO FACE OF CURB OR EDGE OF PAVEMENT.

22. A CERTIFIED RESPONSIBLE LAND DISTURBER MUST BE NAMED BY THE CONTRACTOR PRIOR TO THE PRE-CONSTRUCTION MEETING. ROANOKE CITY WILL REQUIRE THAT THIS PERSON ATTEND THE PRE-CONSTRUCTION MEETING AND PROVIDED A COPY OF THE RLD CERTIFICATE AT LEAST (2) TWO DAYS PRIOR TO SCHEDULED MEETING.

23. ROOFTOP AND GROUND MECHANICAL EQUIPMENT SHALL BE SCREENED.

24. LIGHTS ON BUILDINGS AND FREE STANDING FIXTURES TO BE FILLED WITH DIFFUSERS TO LIMIT INTENSITY AT PROPERTY LINES TO A MAXIMUM OF 0.5 FOOTCANDLES.

25. NO CONSTRUCTION / FIELD CHANGES WITHOUT THE APPROVAL OF THE CONSULTING SITE DESIGNER AND ROANOKE CITY ARE ALLOWED. ANY NEW ALIGNMENTS, CHANGES IN GRADES, ALTERNATIVE PIPE SIZES OR MANHOLES AND CHANGES IN EROSION AND SEDIMENT CONTROL MEASURES WILL REQUIRE A NEW SET OF PLANS STAMPED BY THE CONSULTING ENGINEER. PLANS SUBMITTED TO ROANOKE CITY FOR REVIEW CAN BE 8 1/2" x 11" SHEET SIZE IF INFORMATION IS LEGIBLE.

26. THE DEPARTMENT OF CONSERVATION AND RECREATION (DCR) REQUIRES ANY LAND DISTURBANCE OF 1 ACRE OR GREATER TO OBTAIN PERMITS THROUGH THEIR OFFICE. CONTACT ERIC CAPPS AT DCR TO DETERMINE PROPER PERMITTING AT (804)786-3857. THIS PERMIT MUST BE APPLIED FOR TWO (2) DAYS PRIOR TO ANY LAND DISTURBANCE ON THE PROPERTY. A COPY OF THE APPLICATION MUST BE SUBMITTED TO ROANOKE CITY WITHIN TWO (2) WORKING DAYS PRIOR TO A PRE-CONSTRUCTION MEETING. CONSTRUCTION MAY BEGIN ONCE THE D.C.R. PERMIT IS OBTAINED THE VSMF IS APPLIED FOR.

## WATER NOTES

1. A MINIMUM COVER OF THREE (3) FEET IS REQUIRED OVER PROPOSED LINES. A MINIMUM VERTICAL SEPARATION OF 18" BETWEEN ALL UTILITIES.

2. 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.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND UNCOVERING VALVE VAULTS AFTER PAVING AND GRADING AND ADJUSTMENT FOR FINISH GRADE ELEVATION IF NECESSARY.

4. ALL EXISTING UTILITIES MAY NOT BE SHOWN IN THE EXACT LOCATION. THE CONTRACTOR SHALL COMPLY WITH THE WESTERN VIRGINIA WATER AUTHORITY REGULATIONS WHERE LINES CROSS.

5. ALL TRENCHES IN EXISTING OR FUTURE HIGHWAY RIGHTS-OF-WAY SHALL BE COMPACTED ACCORDING TO THE WESTERN VIRGINIA WATER AUTHORITY STANDARDS.

6. LINES SHALL BE STAKED PRIOR TO CONSTRUCTION.

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 WESTERN VIRGINIA STANDARDS. COORDINATE INSPECTIONS FOR TESTING WITH THE WESTERN VIRGINIA WATER AUTHORITY.

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. A CONTINUOUS AND UNIFORM BEDDING SHALL BE PROVIDED IN THE TRENCH FOR ALL PIPE. STONES AND ROCKS FOUND IN THE TRENCH SHALL BE REMOVED FOR A DEPTH OF AT LEAST SIX (6) INCHES BELOW THE BOTTOM OF THE PIPE AND TAMPED SELECTED FILL BEDDING PROVIDED. AFTER THE PIPE HAS BEEN PLACED IN THE TRENCH, THE TRENCH SHALL BE BACK FILLED WITH SELECTED MATERIAL, THOROUGHLY COMPACTED TO 90%, 95% UNDER PAVEMENT OR CONCRETE SLAB, OF THE STANDARD PROCTOR (ASTM D-698) USING CARE NOT TO DAMAGE THE PIPE.

11. ALL WATER FACILITIES ARE TO BE INSTALLED ACCORDING TO THE WESTERN VIRGINIA WATER AUTHORITY DESIGN AND CONSTRUCTION STANDARDS.

12. THE DEVELOPER IS RESPONSIBLE FOR FURNISHING AND INSTALLING ALL COMPONENTS OF THE WATER SERVICE BETWEEN THE MAIN AND THE BUILDING. PRIOR TO THE START OF CONSTRUCTION, CALL THE AUTHORITY INSPECTOR AT 537-3243. THE WET TAP WILL BE MADE BY THE AUTHORITY FOLLOWING PAYMENT AND SCHEDULING. CALL UTILITY LINE SERVICES AT 853-2513, THREE WORKING DAYS PRIOR TO THE ANTICIPATED TAP DATE.

## SANITARY SEWER NOTES

1. ALL SANITARY SEWER PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC), SDR 35, AND SHALL CONFORM WITH WESTERN VIRGINIA WATER AUTHORITY REGULATION AND SPECIFICATIONS.

2. THE SANITARY SEWER PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS AND THESE SPECIFICATIONS. THE PIPE SHALL BE LAID IN TRUE STRAIGHT LINES 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 IN THE TRENCH. FIELD CUTTING OF THE PIPE SHALL BE DONE SO IN A NEAT AND WORKMANLIKE 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 FOUR (4) INCHES BELOW THE BOTTOM OF THE PIPE, TO PROVIDE FOR THE COMPACTED BEDDING MATERIAL.

4. BEDDING MATERIAL SHALL BE COARSE AGGREGATE SIZE NUMBER 57 AND SHALL CONFORM WITH VDOT SECTION 203 AND/OR ASTM C33. BEDDING MATERIAL SHALL BE PLACED AND COMPACTED IN FOUR (4) INCHES BELOW THE PIPE AND AS A MINIMUM UP TO THE SPRINGLINE OF THE PIPE. CARE SHALL BE TAKEN TO ENSURE THE BEDDING MATERIAL FULLY SUPPORTS THE SIDE AND BOTTOM OF THE PIPE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

5. BACK FILL MATERIAL SHALL BE EITHER APPROVED EXCAVATED MATERIAL OR APPROVED SUITABLE MATERIAL FROM OTHER SOURCES THAT IS FREE OF ORGANIC MATERIAL, LOAM, DEBRIS, OR MINIMUM ONE (1) FOOT ABOVE THE TOP OF PIPE SHALL BE FREE OF STONES LARGER THAN TWO (2) INCHES AND SHALL BE PLACED IN SIX (6) INCH LAYERS AND COMPACTED WITH HAND TAMPERS. BACK FILL FROM THIS POINT TO TOP OF TRENCH SHALL BE FREE OF STONES LARGER THAN FOUR (4) INCHES AND SHALL BE PLACED IN LAYERS NOT TO EXCEED EIGHT (8) INCHES AND COMPACTED WITH MECHANICAL TAMPERS. BACK FILL BELOW UNPAVED AREAS SHALL BE COMPACTED TO 90%. BACK FILL BELOW PAVED AREAS SHALL BE COMPACTED TO 95%. BACK FILL COMPACTION TESTING SHALL BE IN ACCORDANCE WITH ASTM D-698.

6. TESTING FOR WATER TIGHTNESS SHALL BE MADE UTILIZING A LOW PRESSURE AIR TEST. THE TESTING EQUIPMENT, PROCEDURE AND RESULTS WILL ALL BE SUBJECT TO THE APPROVAL OF THE WVWA UTILITY ENGINEER. THE AIR TEST SHALL BE IN ACCORDANCE WITH ASTM C-828, CURRENT REVISION. THE CONTRACTOR SHALL DEFLECTION TEST THE ENTIRE LENGTH OF PIPE BY MEANS OF A GO-NO-GO MANDREL TO ASSURE THAT A 5.0% DEFLECTION HAS NOT BEEN EXCEEDED. MANDREL SHALL BE SIZED AT 5% LESS THAN ASTM DIMENSION FOR THE SEWER.

7. A MINIMUM COVER OF THREE (3) FEET IS REQUIRED OVER PROPOSED LINES. A MINIMUM VERTICAL SEPARATION OF 18" IS REQUIRED BETWEEN ALL UTILITIES.

8. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND UNCOVERING ALL MANHOLES AFTER GRADING AND PAVING. MANHOLE TOPS SHALL BE ADJUSTED TO FINISH GRADE ELEVATION IF NECESSARY.

9. 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 ALL EXISTING UTILITIES MAY NOT BE SHOWN OR MAY NOT BE SHOWN IN THE EXACT LOCATION. THE CONTRACTOR SHALL COMPLY WITH STATE WATER WORKS REGULATIONS, SECTION 12.05.03, WHERE LINES CROSS.

10. BUILDING CONNECTIONS ARE TO BE MADE WITH 6" PIPE INSTALLED AT A MINIMUM GRADE OF 1/4 INCH TO 1 FOOT IN ACCESS AND UTILITY EASEMENT.

11. LINES SHALL BE STAKED PRIOR TO CONSTRUCTION.

12. THE WVWA UTILITY INSPECTOR MUST OBSERVE AND APPROVE ALL TAPS INTO THE MANHOLE BY CONTRACTORS.

13. FIELD LOCATE THE EXISTING SANITARY SEWER LATERAL. CHECK THE LATERAL SIZE, ELEVATION AND CONDITION. IF THE EXISTING LATERAL IS IN GOOD CONDITION AND CAN BE USED THEN THE PROPOSED SANITARY SEWER LATERAL INTO THE EXISTING. NOTIFY THE WVWA ENGINEER IF THE EXISTING SANITARY SEWER CAN NOT BE USED.

14. ALL SEWER FACILITIES ARE TO BE INSTALLED ACCORDING TO THE WESTERN VIRGINIA WATER AUTHORITY DESIGN AND CONSTRUCTION STANDARDS.

15. 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.

**SPECIFICATIONS**

**CURB & GUTTER**  
ENTRANCE WAYS  
TRENCHES & CUTS

**Standard Notes:**

- Work shall not commence in public right-of-way before approval by an inspector and a permit is obtained.
- Notify Construction Inspectors office at 853-2856 - 48 hours before work begins.
- Do not pour any concrete before forms have been inspected and approved.

**Sidewalk & Entrance Way and Curb & Gutter Notes:**

- Use only standard metal forms as approved by the Virginia Department of Transportation. Wood forms will not be permitted.
- Joists or score marks are to be sharp and clean without showing edges of joisting foot.
- All radius shown shall be 1/2" unless otherwise noted for promoted expansion joints.
- All concrete shall be Class A 3000 P.S.I.
- Curb radius (R) is from back of curb and gutter to back of sidewalk.

OFFICE OF THE CITY ENGINEER - ROANOKE, VIRGINIA

APPROVED: *[Signature]* CITY ENGINEER

DATE: 12/18/12

NOTES

SHEET 1 OF 9

**GENERAL NOTES:**

- Standard commercial "entrance" shall have a minimum curb radius (R) at 7 1/2 feet.
- Minimum entrance width to be 12 feet.
- Where curb & gutter already exists both curb & gutter shall be removed. If proposed entrance falls within five (5) feet of an existing joint removal & reconstruction shall be to this joint. New concrete removed at other than an existing joint shall be cut with a mechanical saw specifically manufactured for that purpose; this also shall apply to street pavement.
- Where sidewalk exists or is to be constructed across driveways the thickness thereof must correspond with the thickness of the entrance.
- Whenever "Entrance" exceeds twenty-four (24) feet in width a 1/2" premoled expansion joint filler shall be installed through the center perpendicular to flow line.
- Finish "Entrances" shall have a "curved bottom flange" running parallel to flow line.
- Forms shall be accompanied by the use of a liquid membrane seal containing white pigment applied at the rate of one (1) gallon per 100 square feet.
- All "Entrance Ways" shall be constructed according to City of Roanoke specifications and to the grades approved by the City Engineering Department.
- Entrances exceeding 30 feet in width shall be approved by the City Manager.

OFFICE OF THE CITY ENGINEER - ROANOKE, VIRGINIA

APPROVED: *[Signature]* CITY ENGINEER

DATE: 12/18/12

STANDARD CITY OF ROANOKE COMMERCIAL ENTRANCE

SHEET 6 OF 9

**SECTION A-A**

**SECTION B-B**

**SECTION C-C**

**SECTION D-D**

**HALF PLAN**

**SECTION ELEVATION AT FLOW LINE**

**2.0" SM-9.5A TOP COURSE**

**3" BM-25.0 BASE COURSE**

**10" 21-B SUBBASE**

**COMPACT SUBGRADE TO 95% MAX. DRY DENSITY PER ASTM D-698**

**ALL EXPOSED EDGES OF EXISTING BITUMINOUS SURFACE COURSE SHALL BE PRIMED WITH ASPHALTIC MIXTURE PRIOR TO NEW ASPHALT PLACEMENT.**

**ALL PAVEMENT SECTIONS ARE "SUPERPAVE" DESIGNATIONS.**

**HEAVY-DUTY PAVEMENT DETAIL**

**NOT TO SCALE**

**BITUMINOUS EXPANSION JOINT**

**CG-2**

**P.V.M.T. SURFACE**

**6"x6" WWF CENTERED**

**6.0'**

**4" CONCRETE**

**4" GRVL. BASE**

- SIDEWALK CONCRETE TO BE 3500psi (A.E.) AS A MINIMUM.
- SCORE JOINTS SHALL BE PROVIDED @ 5.0' INTERVALS ALONG THE LENGTH OF THE SIDEWALK; BITUMINOUS EXPANSION SHALL BE USED @ 25' INTERVALS.

**ON SITE TURNDOWN SIDEWALK DETAIL**

**NOT TO SCALE**

**2" SM-2A TOP COURSE**

**6" 21B BASE**

**COMPACT SUBGRADE TO 95% MAX. DRY DENSITY PER ASTM D-698**

**TYPICAL PAVEMENT SECTION**

**NOT TO SCALE**

**CONCRETE DUMPSTER PAD & LOADING APRON PER PLAN**

**SCORE JOINT 5' SQUARE**

**3500 PSI CONCRETE**

**HEAVY DUTY PAVEMENT SECTION**

**STONE UNDER PAVING**

**SUBGRADE TO 95% MAX DENSITY PER ASTM D-698**

**4" COMPACTED STONE (VDOT #57)**

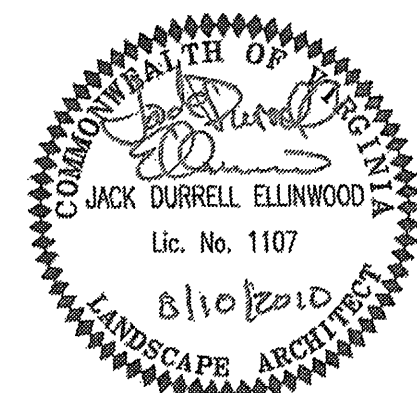
**6" X 6" W.W.F. CENTERED**

**DUMPSTER PAD DETAIL**

**NOT TO SCALE**

## ELLINWOOD LAND DESIGN GROUP, LLC

3862 HYDE PARK DRIVE  
ROANOKE, VIRGINIA 24018  
PHONE: 540-588-3311



No.	Revision	By	Appd.	Date	Drawn	DRB
1	city comments 06/2010	DRB	JDE	06/11/10	Designed	JDE
2	city comments 07/13/10	DRB	JDE	08/10/10	Checked	JDE
					Approved	JDE

DEVELOPMENT PLAN FOR  
LOT 8A - BLUE HILLS VILLAGE

NOTES AND DETAILS  
ROANOKE, VIRGINIA

APPROVED SEP 10 2010 CP100024	SCALE: AS NOTED
JUNE 11, 2010	PROJECT: 201003
2	