

GENERAL NOTES

PRE-CONSTRUCTION MEETING AND CONSTRUCTION COMMENCEMENT:

- All construction equipment and material shall conform to the Construction Standard and Specification of Roanoke County, the Western Virginia Water Authority, and the Virginia Department of Transportation.
- Storage Water Management Agreement shall be attached 8 1/2" x 11" or 8 1/2" x 14" plot shall be approved and recorded prior to the pre-construction meeting.
- Once all required items are submitted to the County of Roanoke, the developer shall contact the Development Review Coordinator to indicate that a pre-construction meeting needs to be scheduled. The pre-construction meeting shall be held at the developer's office (2) working days later.
- All land division in project area shall be approved by an erosion and sediment control plan, grading or clearing permit, all required by the applicant prior to the issuance of a Re-usable Land Disturbance (RLD) Certificate by the Department of Environmental Quality. The Re-usable Land Disturbance can be an one time Project that is certified by the Commonwealth of Virginia to be in charge of carrying out the land disturbance activity for the project.
- It is the responsibility of the developer to notify the certified responsible Land Disturbance and the Utility Contractor to attend the pre-construction meeting.
- The Development Review Coordinator shall attend the pre-construction meeting with the Re-usable Engineer, Inspector, and the Western Virginia Water Authority and the Town of Vinton Public Works Department.
- An approved plot plan, Storm Water Pollution Prevention Plan (SWPPP), VSMP cover letter, and all permits shall be available at the construction site at all times.
- The developer and/or contractor shall supply all utility companies with copies of approved plans, indicating that all grading and installation shall conform to approved plans.
- The project engineer shall contact the developer and in writing to the County application to perform inspection on site. Either one in the developer or the developer shall contact the pre-construction checklist indicating their knowledge of Roanoke County application to perform inspection on site.
- The Erosion Control Permit or Combined Erosion Control & VSMP Permit issued to the developer at the pre-construction meeting.
- Notify the County of Roanoke prior to beginning installation of ESC bedding. The County shall inspect initial installation to ensure compliance with approved plan prior to start of grading. The developer SHALL contact the project Inspector 24 hours before beginning any grading or construction on the property.
- Construction Inspector shall inspect for drain water drainage and BMP installation during the process of installation. Please contact the inspector 24 hours in advance.
- All work shall be subject to inspection by Roanoke County, the Western Virginia Water Authority, and the Virginia Department of Transportation Inspector.
- Contractor shall not utilize proposed construction at least (2), but not more than (10) working days in advance. Area public utility shall be notified to "Miss Utility": 1-800-552-7001 or VA 811.
- The 100' clear floodplain shall be staked prior to construction.
- Grade stakes shall be all steel and either, cement, timber, or concrete and shall be at all times construction.
- The Department of Conservation and Development shall be notified when a printing is entered into construction.
- Construction debris shall be contained in accordance with the Virginia Litter Control Act. No less than one litter receptacle shall be provided on site.
- The contractor shall provide adequate clean-up cleaning of dirt, rock, and/or other equipment prior to entering property. Street sweeping shall be provided by a working pressure washer or greater than 100 psi.
- Plan approval in no way relieves the developer or contractor of the responsibility contained within the erosion and sediment control or water management policies.
- Field construction shall conform proposed drainage design as shown on plan.
- Field correction shall be approved by the Roanoke County Engineer, Director, and/or the Western Virginia Water Authority and the Professional of Record, prior to construction.
- The developer or contractor shall apply to the County and the Western Virginia Water Authority to correct A-300 plan before final acceptance.

VIRGINIA DEPARTMENT OF TRANSPORTATION:

- Plan approval by Roanoke County does not guarantee issuance of a permit by the Virginia Department of Transportation.
- A permit shall be obtained from the Virginia Department of Transportation, Sales and Revenue Office prior to construction in the area of the project.
- The preliminary engineering design shall be based on a predicted Grade Control Table (GCT) and the Realigner Factor (RF) of 2.0 as shown in Appendix I of the 2000 Virginia Department of Transportation Planning Guide for Sidewalks and Secondary Roads. The GCT shall be submitted to an independent contractor and the results submitted to the Virginia Department of Transportation prior to the construction. Should the GCT and/or the RF be less than the predicted value, additional material shall be required in accordance with Departmental specifications. Refer to the table contained in the letter and location of the required material to be tested. All plans shall be submitted to the Department for review and approval. The GCT shall be approved by the Virginia Department of Transportation prior to placement of the material. The approved GCT shall be used for construction and design, and construction documents shall be applied.
- Standard railroad right-of-way section shall be required on all or in areas where standard right-of-way is necessary. After completion of railroad construction, the County Engineer and Virginia Department of Transportation shall be contacted to check a field review. Where a rail is warranted, the standard railroad right-of-way shall be provided and the railroad shall be installed in accordance with the 2001 VDOT Road and Bridge Standard as part of the development.
- Standard street and traffic control shall be erected at each intersection as the developer prior to final street acceptance.
- All traffic devices shall be in accordance with current edition of the "Manual on Uniform Traffic Control Devices" (MUTCD).
- All drainage material shall be related to the construction line of the road as before placing the backfill.

See Sheet N/A for Storm Water Site Statistics Table.
See Sheet N/A for BMP Information Table.



COUNTY OF ROANOKE, VA

NOTE: THIS COST ESTIMATE TABLE IS PROVIDED FOR BIDDING PURPOSES ONLY. VERIFICATION OF ALL QUANTITIES AND PRICES FOR BIDDING PURPOSES SHALL BE THE RESPONSIBILITY OF THE BIDDER.

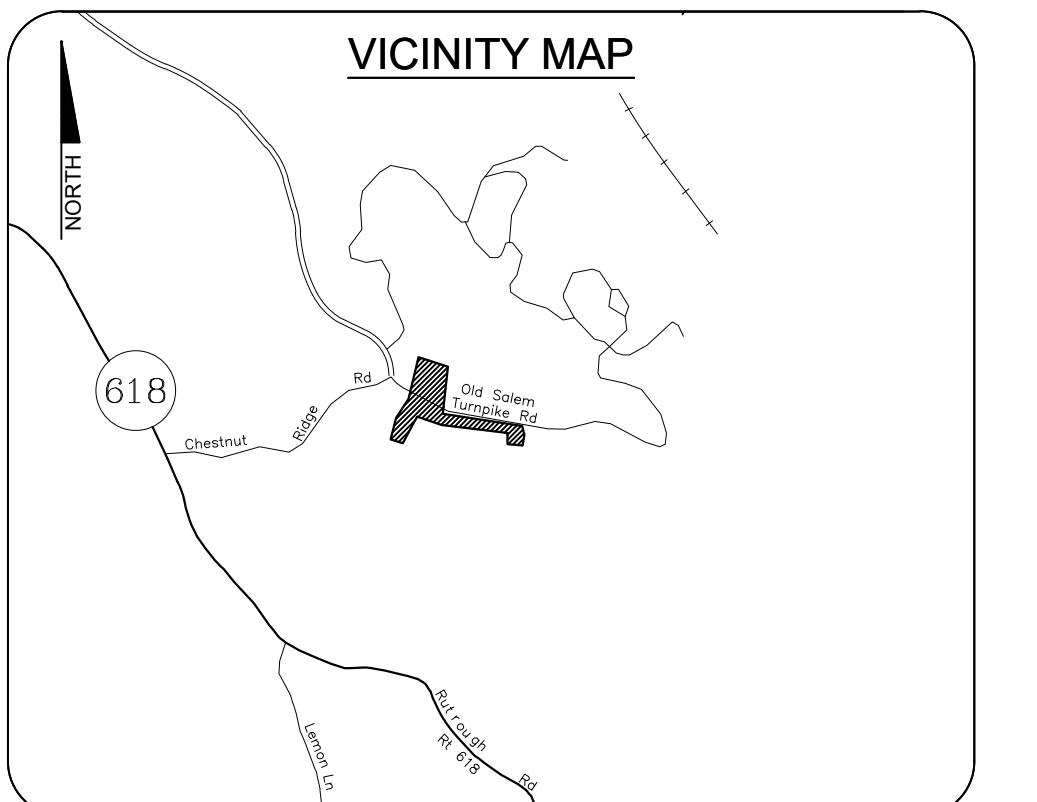
QUANTITY & COST ESTIMATE

| ITEM | QUANTITY | UNIT | UNIT PRICE | COST | DESCRIPTION |
|---|----------|----------|------------|------|-------------|
| CLEARING AND GRADING | | ACRES | | | |
| S.W.M. EXCAVATION | | C.Y. | | | |
| S.W.M. EMBANKMENT | | C.Y. | | | |
| NYLOPLAST DROP INLET | | EACH | | | |
| 8" TYPE S HDPE PIPE | | LIN. FT. | | | |
| 10" TYPE S HDPE PIPE | | LIN. FT. | | | |
| 12" TYPE S HDPE PIPE | | LIN. FT. | | | |
| 15" TYPE S HDPE PIPE | | LIN. FT. | | | |
| BOX CULVERT | | LUMP SUM | | | |
| PAVED DITCH | | LIN. FT. | | | |
| RIPRAP - CLASS | | S.F. | | | |
| SODDED SWALE | | S.Y. | | | |
| -IN. CONCRETE ENDWALL EW- | | EACH | | | |
| PAVEMENT (INCLUDING SURFACE) | | | | | |
| CURB & GUTTER CG- | | LIN. FT. | | | |
| GRAVEL SHOULDER | | S.Y. | | | |
| SURFACE TREATMENT | | S.Y. | | | |
| -IN. CT. CONC. TYPE D- | | S.Y. | | | |
| -IN. CT. CONC. TYPE S- | | S.Y. | | | |
| -IN. BASE MATERIAL | | C.Y. | | | |
| -IN. SURFACE MATERIAL | | C.Y. | | | |
| COMMERCIAL WATER METER (1") & Lateral | | EACH | | | |
| FIRE HYDRANT ASSEMBLIES | | EACH | | | |
| LOW OFFS W/VAUTL, FRAME & COVER | | EACH | | | |
| 8-IN. GATE VALVE, W/VAUTL, FRAME & COVER | | EACH | | | |
| -IN. GATE VALVE, W/VAUTL, FRAME & COVER | | EACH | | | |
| SANITARY SEWER MANHOLE | | EACH | | | |
| 8" PVC SANITARY SEWER MAIN | | LIN. FT. | | | |
| SANITARY SEWER LATERAL & SAMPLING MANHOLE | | EACH | | | |
| LANDSCAPING (SEE SHEET C-08) | | LUMP SUM | | | |
| AS-BUILT PLANS - STORM SEWER | | | | | |
| SUB-TOTAL | | | | | |
| 100% CONTINGENCY | | | | | |
| ESTIMATED TOTAL | | | | | |

NOT APPLICABLE

C1 COVER SHEET
C2 SANITARY SEWER PLAN VIEW
C3 PROFILE AND S.S. DETAILS
C4 ESC NOTES
C5 NOTES AND ESC DETAILS
C6 WATER AND SEWER DETAILS

Sheet Index



LEGEND

| | |
|---------------------------|---|
| Property Line | — |
| Right-of-Way | — |
| Centerline | — |
| Minor Building Line | — |
| Existing Storm Sewer | — |
| Existing Sanitary Sewer | — |
| Existing Water Main | — |
| Existing Contour | — |
| Proposed Contour | — |
| Proposed Drainage Ditch | — |
| Proposed Lateral/Clearing | — |
| Proposed Storm Sewer | — |
| Proposed Sanitary Sewer | — |
| Proposed Water Main | — |
| To Be Relocated | — |
| 8" SS | — |
| 8" W | — |
| T.B.R. | — |

SURVEY INFORMATION

Horizontal and vertical control shall be performed in year 2017.
BALZER AND ASSOCIATES, INC.

All vertical elevation shall be referenced to the National Geodetic Vertical Datum of 1929 or 1988. All horizontal elevation shall be referenced to the North American Datum of 1927 or 1983.

Horizontal Datum: VA STATE PLANE NAD83 Vertical Datum: NAVD88

Source of topographic mapping: dated 2017

Standard operating period: N/A dated: N/A

Enclosed marker location: EX. STORM INLET CENTER OF MANHOLE ELEV.=1023.32

The professional seal and signature certifies the contour line and topographic mapping to be accurate and correct.

BALZER
AND ASSOCIATES, INC.
CHRISTOPHER P. BURNS
Lic. No. 047338
4/25/18

REFLECTING TOMORROW
www.balzer.cc
PLANNERS • ARCHITECTS
ENGINEERS • SURVEYORS

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

15871 City View Drive
Suite 200
Midlothian, Virginia 23113
Phone: 804/794-0571
FAX: 804/794-2635

448 Peppers Ferry Road
Christiansburg, Virginia 24073
Phone: 540/381-4290
FAX: 540/381-4291

1561 Commerce Road
Suite 401
Verona, Virginia 24482
Phone: 540/248-3220
FAX: 540/248-3221

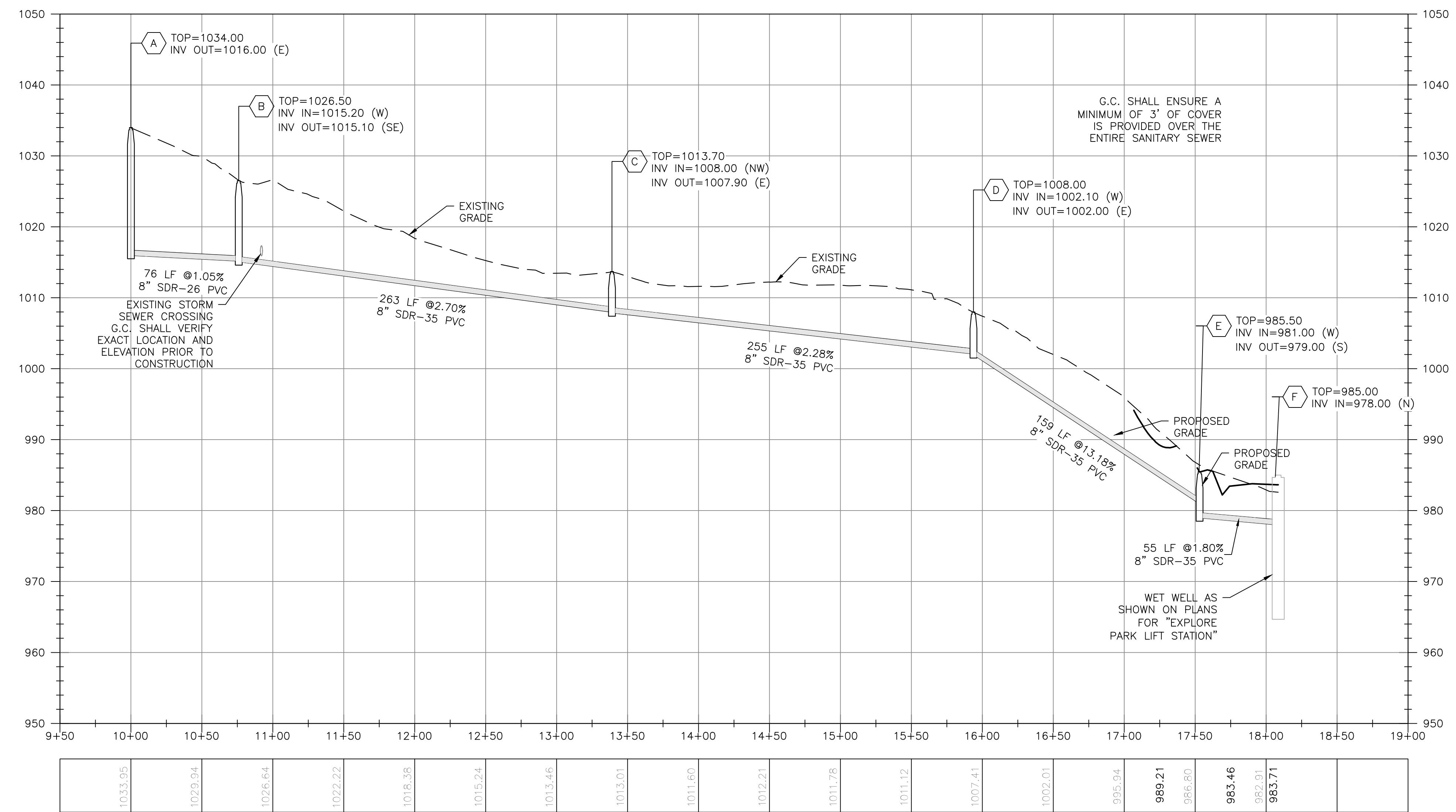
128 W. Market Street
Suite 301
Harrisonburg, Virginia 22801
Phone: 540/433-1908

DRAWN BY: CPB
DESIGNED BY: CPB
CHECKED BY: BTC
DATE: 11/19/2017
REVISIONS:
12/18/2017
1/24/2018
4/25/2018

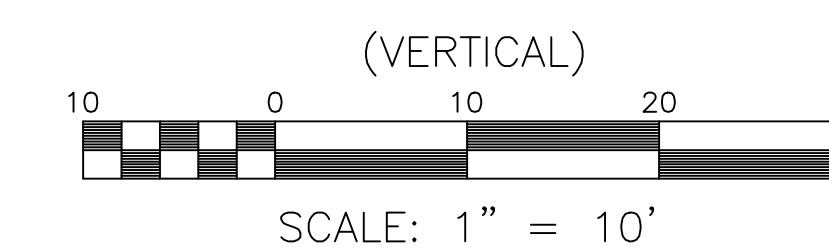
EXPLORATION PARK
GRAVITY S.S. EXTENSION
County of Roanoke, Virginia

SHEET No.: C1
JOB No.: 04170086.00

SANITARY SEWER PROFILE



PROFILE SCALES:



EXPLORE PARK GRAVITY S.S. EXTENSION PROFILE & S.S. DETAILS

VINTON DISTRICT
ROANOKE COUNTY, VIRGINIA

- TRAFFIC BEARING BOX AND LID REQUIRED IN TRAFFIC AREAS (CAPITOL FOUNDRY VB-S)
- SEWER LATERAL AND CLEAUNOUT PIPING SHALL BE ASTM D3034 SDR 26. SEWER LATERAL FITTINGS SHALL BE OF SAME SDR RATING AS THE SEWER MAIN. SCHEDULE 40 SOLVENT WELD PIPE AND FITTINGS MAY BE USED FOR THE SEWER LATERAL AND CLEAUNOUT ASSEMBLY WITH APPROVAL FROM THE PARTICIPATING UTILITY.
- ALL PIPE SHALL BE OF EQUAL SIZE.
- NO BENDS ARE ALLOWED IN THE LATERAL FROM THE MAIN TO THE CLEAUNOUT STACK WYE. (EXCEPT FOR DEEP SEWER, AS SHOWN BELOW).
- ALL MAIN LINE TAPS ON ACTIVE MAINS SHALL BE PERFORMED BY PARTICIPATING UTILITY.
- PIPING ON PRIVATE SIDE OF CLEAUNOUT TO BE INSTALLED PER GOVERNING JURISDICTION REQUIREMENTS.
- SEWER CLEAUNOUTS SHALL BE SAME SIZE AS SEWER LATERAL.
- MINIMUM COVER FOR ALL SEWER LATERALS SHALL BE THREE (3') FEET.
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- PROPERTY OWNER RESPONSIBLE FOR INSTALLING CLEAUNOUT ON PROPERTY LINE (IN ACCORDANCE WITH THIS DETAIL) WILL BE RESPONSIBLE FOR MAINTAINING CLEAUNOUT DURING CONSTRUCTION.
- LOWEST SEWER PIPING FROM GROUND ELEVATION SHALL BE A MINIMUM OF THREE FEET (3') ABOVE THE TOP OF THE MAIN AT THE POINT WHERE THE SERVICE LATERAL CONNECTS TO THE MAIN.
- WHEN CONNECTING TO EXISTING LATERAL USE FERNO FLEXIBLE COUPLING.

- SOLID GLUE CUP
PRIVATE PROPERTY
RIGHT OF WAY & LIMITS OF EASEMENT
CLEAN-OUT BOX AND LID
FINISHED GRADE
SET TO FINISHED GRADE
- PLASTIC BODY
CLEAUNOUT & CAP
CLEAUNOUT SET BACK
(SEE NOTES #2 & #3)
- 45° OR 2.5° BELL & SPIGOT BEND
(IF NEEDED)
- 45° WYE (TEE NOT ACCEPTABLE)
- HORIZONTAL SECTION SHALL EXTEND A MINIMUM OF 5' OR AS DIRECTED BY THE PARTICIPATING UTILITY
- SEE NOTE #6
- 4" MINIMUM GRAVEL BEDDING #57 OR EQUIVALENT
- 1/4" PER 1'-0" MINIMUM GRADE
- SAME AS ABOVE
- 11.25° OR 22.5° BEND
(SEE NOTE #2)
- 2'-0" MIN.
- 2'-0" MAX.
- 45° MAX.
- SEWER MAIN
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- 11.25° OR 22.5° BEND
- SEE NOTE #2
- 2'-0" MIN.
- 2'-0" MAX.
- 45° MAX.
- SEWER MAIN
- TEE, WYE, TEE-YWE OR COMBINATION OF WYE & 45° BEND FITTINGS SHALL BE SIZED AS REQUIRED
- 11.25° OR 22.5° BEND
- (SEE NOTE #2)

- 1/4" PER 1'-0"

**EXPLORE PARK
GRAVITY S.S. EXTENSION**

VINTON DISTRICT
ROANOKE COUNTY, VIRGINIA

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION: THE PURPOSE OF THIS PROJECT IS FOR THE CONSTRUCTION OF A GRAVITY SANITARY SEWER MAIN EXTENSION AT EXPLORE PARK IN ROANOKE COUNTY, VIRGINIA. THE LIMITS OF DISTURBANCE FOR THE PROJECT IS APPROXIMATELY 0.7 AC.

EXISTING SITE CONDITIONS: THE PROJECT AREA INCLUDES THE PARKING AREAS AND GRASSED AREAS SURROUNDING SEVERAL EXISTING STRUCTURES AT THE EXPLORE PARK IN ROANOKE COUNTY. DRAINAGE FLOWS ARE COLLECTED IN EXISTING STORM INLETS AND ARE CONVEYED TO THE WEST ALONG OLD SALEM TURNPIKE ROAD. THERE IS ALSO AN EXISTING ROADSIDE DITCH ADJACENT TO THE ROADWAY.

ADJACENT PROPERTY: THE PROJECT AREA IS BOUNDED BY EXPLORE PARK PROPERTY ON ALL SIDES.

OFF-SITE AREAS: THE PROPOSED DEVELOPMENT IS ANTICIPATED TO BE BALANCED AND NO MATERIAL WILL BE TRANSPORTED TO OR FROM THE SITE.

SOILS: THE "WEB SOIL SURVEY" AS PREPARED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE IDENTIFIES THE SOILS ON-SITE AS HAYESVILLE FINE SANDY LOAM AND HAYESVILLE FINE SANDY LOAM, WHICH ARE BOTH HYDROLOGIC SOIL GROUP B.

Critical Erosion Areas: Critical areas for this project include the steep slopes on the property. The slopes shall receive

BLANKET MATTING AND SHALL BE SEEDED AND STABILIZED AS SOON AS POSSIBLE AFTER REACHING FINAL GRADE.

EROSION AND SEDIMENT CONTROL MEASURES: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION" (VESCH). THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE DIRECTED BY THE LOCAL PROGRAM ADMINISTRATOR.

STRUCTURAL -

SILT FENCE-STD. 3.05...A TEMPORARY SEDIMENT BARRIER CONSISTING OF A SYNTHETIC FILTER FABRIC STRETCHED ACROSS AND ATTACHED TO SUPPORTING POSTS AND ENTRENCHED TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT FROM DISTURBED AREAS.

INLET PROTECTION-STD. 3.07...A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN DROP INLET OR CURB INLET USED TO PREVENT SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA.

ROCK CHECK DAMS-STD. 3.20...SMALL TEMPORARY STONE DAMS CONSTRUCTED ACROSS A SWALE OR DRAINAGE DITCH TO REDUCE THE VELOCITY OF CONCENTRATED STORMWATER FLOWS, THEREBY REDUCING EROSION OF THE SWALE OR DITCH.

VEGETATIVE -

TEMPORARY SEEDING-STD. 3.31...ESTABLISHMENT OF A TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS BY SEEDING WITH APPROPRIATE RAPIDLY GROWING ANNUAL PLANTS TO REDUCE EROSION BY STABILIZING DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 14 DAYS.

PERMANENT SEEDING-STD. 3.32...ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER ON DISTURBED AREAS BY PLANTING SEED TO REDUCE EROSION AND DECREASE SEDIMENT YIELD FROM DISTURBED AREAS.

MULCHING-STD. 3.35...APPLICATION OF PLANT RESIDUES OR OTHER SUITABLE MATERIALS TO THE SOIL SURFACE TO PREVENT EROSION BY PROTECTING THE SOIL SURFACE FROM RAINDROP IMPACT AND REDUCING THE VELOCITY OF OVERLAND FLOW.

MANAGEMENT STRATEGIES:

A) CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
B) SEDIMENT TRAPPING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING.
C) THE LOCAL PROGRAM ADMINISTRATOR RESERVES THE RIGHT TO ADD TO, DELETE, OR OTHERWISE CHANGE THE EROSION CONTROL MEASURES AS DEEMED NECESSARY DUE TO ACTUAL FIELD CONDITIONS BY WRITTEN NOTIFICATION TO THE CONTRACTOR.

D) ALL FILL AND CUT SLOPES SHALL BE SEEDED WITHIN SEVEN (7) DAYS OF ACHIEVING FINAL GRADE.

E) ONLY AFTER INSPECTION AND APPROVAL FROM THE LOCAL PROGRAM ADMINISTRATOR MAY ITEMS BE REMOVED FOLLOWING THE STABILIZATION OF THE CONTRIBUTING AREAS.

INSPECTIONS:

THE GENERAL CONTRACTOR SHALL INSPECT DISTURBED AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED, AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION, STRUCTURAL CONTROL MEASURES, AND THE AREA OF CONSTRUCTION VEHICLE ACCESS AT LEAST EVERY FOURTEEN (14) CALENDAR DAYS, AND WITHIN 48 HOURS OF THE END OF A STORM EVENT PRODUCING 1/2" OR GREATER OF PRECIPITATION, WHERE AREAS HAVE BEEN FINALLY OR TEMPORARILY STABILIZED OR RUNOFF IS UNLIKELY DUE TO WINTER CONDITIONS (SITE IS COVERED WITH SNOW, ICE, OR FROZEN GROUND EXISTS) SUCH INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH.

A) INSPECT DISTURBED AREAS AND AREAS OF MATERIALS STORAGE THAT ARE EXPOSED TO PRECIPITATION FOR EVIDENCE OF, OR THE POTENTIAL FOR SEDIMENT ENTERING THE STORM DRAIN SYSTEM. INSPECT E&S CONTROLS IN ACCORDANCE WITH REQUIREMENTS STATED HEREIN, AND INSPECT POINTS OF STORM DRAIN DISCHARGE FOR EXCESSIVE SEDIMENTATION. CORRECT SITE CONTROLS AS REQUIRED TO REDUCE SEDIMENTATION OF STORM DRAINS, CULVERTS, AND RECEIVING CHANNELS.

B) IF CONTROLS OR SEDIMENT PREVENTION AREAS ARE FOUND TO BE IN NEED OF REPAIR OR MODIFICATION, THE GENERAL CONTRACTOR SHALL PROVIDE ADDITIONAL MEASURES OR MODIFICATIONS TO EXISTING MEASURES AS REQUIRED. ANY ADDITIONAL MEASURES OR MODIFICATIONS TO EXISTING MEASURES SHALL BE RECORDED AS FIELD REVISIONS TO THESE PLANS. IN THE EVENT THAT ADDITIONAL CONTROLS ARE FOUND TO BE REQUIRED, THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING THESE CONTROLS BEFORE THE NEXT ANTICIPATED STORM EVENT. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICAL, THEY SHALL BE IMPLEMENTED AS SOON AS PRACTICAL.

C) A REPORT SUMMARIZING THE SCOPE OF INSPECTIONS, NAME OF INSPECTOR, INSPECTOR'S QUALIFICATIONS, DATES OF INSPECTIONS, MAJOR OBSERVATIONS PERTAINING TO THE IMPLEMENTATION OF THESE EROSION CONTROL PLANS, AND ACTIONS TAKEN SHALL BE MADE AND RETAINED AS A PART OF THESE PLANS. MAJOR OBSERVATIONS OF THESE REPORTS SHALL INCLUDE: THE LOCATIONS OF EXCESSIVE SEDIMENTATION FROM THE SITE; LOCATIONS OF CONTROLS IN NEED OF REPAIR; LOCATIONS OF FAILED OR INADEQUATE CONTROLS; AND LOCATIONS WHERE ADDITIONAL CONTROLS ARE NEEDED.

STORMWATER MANAGEMENT:

STORMWATER MANAGEMENT REQUIREMENTS DO NOT APPLY TO THIS LINEAR DEVELOPMENT PROJECT DUE TO THE DISTURBED AREA BEING LESS THAN 1 ACRE.

MINIMUM STANDARDS

THE FOLLOWING STANDARDS ARE TO BE PROVIDED OR ADDRESSED ON EVERY DEVELOPMENT PROJECT EXCEEDING

10,000 S.F. IN AREA OF DISTURBANCE. THESE STANDARDS ARE CONSIDERED A MINIMUM AND MAY REQUIRE

ADDITIONAL MEASURES AS DEEMED NECESSARY BY THE LOCAL APPROVING AUTHORITY OR THE CONSULTING ENGINEER.

PRactices PROVIDED

| No. | Criteria, Technique or Method | Practices Provided |
|-----|---|--|
| 1 | PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE HAS BEEN REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN FOURTEEN (14) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR. | (TS) (PS) (MU) |
| 2 | DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE. | (TS) (PS) (MU) |
| 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, IN THE OPINION OF THE LOCAL PROGRAM ADMINISTRATOR OR DESIGNATED AGENT, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION. | (TS) (PS) (MU) |
| 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. | (SF) (CD) |
| 5 | STABILIZATION METHODS SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION. | (TS) (PS) (MU) |
| 6 | SEDIMENT TRAPS AND BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN. | NOT APPLICABLE |
| 7 | CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZATION MEASURES UNTIL THE PROBLEM IS CORRECTED. | (TS) (PS) (MU) (B/M) |
| 8 | CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE. | NOT APPLICABLE |
| 9 | WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED. | SHOULD SEEP OCCUR IN ANY EXISTING OR NEW CUT OR FILL SLOPE, THE CONTRACTOR SHALL FIRST ENSURE THAT THERE ARE NOT AREAS OF POSSIBLY HAZARDOUS SOILS OR CONDITIONS PRESENT IN THE SLOPE. IF SO, THE CONTRACTOR SHALL THEN CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT GEOTECHNICAL ENGINEER FOR ON-SITE EVALUATION OF THE AREAS OF SEEPAGE. |
| 10 | 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. | (IP) |
| 11 | BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS 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. | NOT APPLICABLE |
| 12 | WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVERS MATERIALS. | |
| 13 | WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX (6) MONTH PERIOD, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL. | NO DISTURBANCE OF SURFACE WATERS IS PROPOSED WITH THIS PROJECT. |
| 14 | ALL APPLICABLE FEDERAL, STATE AND LOCAL CHAPTERS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET. THE BEDS AND BANKS OF ANY WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED. | |
| 15 | THE BEDS AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED. | |
| 16 | UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA: 1) NO MORE THAN 500 LINEAR FEET OF ANY TRENCH MAY BE OPENED AT ONE TIME. 2) EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. 3) 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. 4) MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPAKED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION. 5) RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE CHAPTERS. 6) APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH. | (SF) |
| 17 | WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACTING 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. | NOT APPLICABLE |
| 18 | ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL STABILIZATION OF THE SITE. TEMPORARY MEASURES ARE NOT NECESSARY, UNLESS OTHERWISE AUTHORIZED BY THE VESCP 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. | (TS) (PS) (MU) |
| 19 | PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASED 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. STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN CONCEPTS ARE NOT MAN-MADE CHANNELS AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS. | NO DOWNSTREAM EROSION IS ANTICIPATED AS A RESULT OF THIS DEVELOPMENT |
| a. | CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE 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. | ADEQUATE 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 THE TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BEDS OR BANKS; AND (b) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF THE 10-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A 2-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 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 10-YEAR STORM WILL NOT OVERTOP THE BANKS AND A 2-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL BED OR BANKS; OR | |
| (2) | IMPROVE THE CHANNEL TO A CONDITION WHERE THE 10-YEAR STORM IS CONTAINED WITHIN THE APPURTAINMENTS; OR | |
| (3) | DESIGN 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 PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A 10-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR | |
| (4) | PROVIDE A COMBINATION OF CHANNEL IMPROVEMENTS, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP AUTHORITY TO PREVENT DOWNSTREAM EROSION. | |
| d. | THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS. | |
| e. | ALL HYDROLOGIC ANALYSIS SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PROJECT. | |
| f. | IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP 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. | OUTFALLS 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 A DETENTION FACILITY. | |
| j. | IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT UNITS; 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. | |
| l. | ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR THE 10-YEAR STORM, WHICH IS THE MAXIMUM FLOW RATE FOR THE 10-YEAR STORM, AND THE DURATION REQUIRED FOR NATURAL OR MAN-MADE CHANNELS IS IF THE PRACTICES ARE DESIGNED TO DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS. (D) DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND (ii) REDUCE THE ALLOWABLE PEAK FLOW RATE FROM SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO 10.1-562 OR 10.1-570 OF THE ACT. | |
| m. | FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (10.1-603.2 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 4VAC50-60-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (V | |

Erosion & Sediment Control Technical Bulletin No. 4
Nutrient Management for Development Sites

C. When applying maintenance fertilizer on established sod.

| Pounds of nitrogen per 1,000 sq. ft. if the fertilizer is less than 50 percent WIN | | | | |
|--|---------------|--------------------|--------------|-------------|
| Month | Type of Grass | | | |
| | Tall Fescue | Kentucky Bluegrass | Bermudagrass | Zoysiagrass |
| September | 1 | 1 | 0 | 0 |
| October | 1 | 1 | 0 | 0 |
| Early November | 0 | 0 | 0 | 0 |
| April | 0 | 0 | 0 | 0 |
| May | 0.05 | 0.05 | 1 | 1 |
| June | 0 | 0 | 1 | 0 |
| July/August | 0 | 0 | 0 | 1 |
| Yearly Lbs. N/1000 sf | 2.5 | 2.5 | 2 | 2 |

| Pounds of nitrogen per 1,000 sq. ft. if the fertilizer is more than 50 percent WIN | | | | |
|--|---------------|--------------------|--------------|-------------|
| Month | Type of Grass | | | |
| | Tall Fescue | Kentucky Bluegrass | Bermudagrass | Zoysiagrass |
| August 15 | 1.5 | 1.5 | 0 | 0 |
| October 1 | 1.5 | 1.5 | 0 | 0 |
| April | 0 | 0 | 1.5 | 1.5 |
| May 15 | 0 | 0 | 0 | 0 |
| June | 0 | 0 | 1.5 | 1.5 |
| Yearly Lbs. N/1000 sf | 3 | 3 | 3 | 3 |

FERTILIZER SPECIFICATIONS AND RATES FOR MANAGEMENT

| TABLE 3.32-C | | |
|---|---|--|
| Revised June 2003 | | |
| PERMANENT SEEDING SPECIFICATIONS FOR APPALACHIAN/MOUNTAIN AREA | | |
| SEED¹ | SPECIES | APPLICATION RATES |
| LAND USE | | |
| Minimum Care Lawn (Commercial or Residential) | Tall Fescue ² Perennial Ryegrass ² Kentucky Bluegrass ¹ | 90-100% 0-10% 0-10% |
| | | TOTAL: 200-250 lbs. |
| High-Maintenance Lawn | of three (3) up to five (5) varieties of Kentucky Bluegrass from approved list for use in Virginia ³ | TOTAL: 125 lbs. |
| General Slope (3:1 or less) | Tall Fescue ² Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop ³ | 128 lbs. 2 lbs. 20 lbs. |
| | | TOTAL: 150 lbs. |
| Low-Maintenance Slope (Slope greater than 3:1) | Tall Fescue ² Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop ³ Crownvetch ⁴ | 1 lbs. 2 lbs. 20 lbs. 20 lbs. |
| | | TOTAL: 150 lbs. |

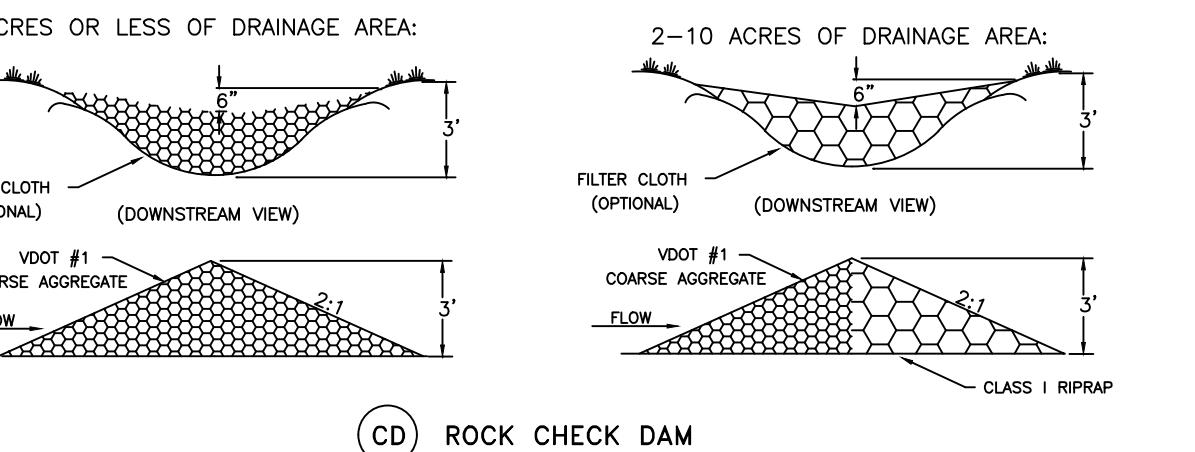
NOTE:
1 - When selecting varieties of turfgrass, use the Virginia Crop Improvement Association (VICA) recommended turfgrass variety list. Quality seed will bear a label indicating that they are approved by VICA. A current turfgrass variety list is available at the local County Extension office or through VICA at 804-746-4884 or at <http://usdan.cses.vt.edu/umr/Turf/turf/publications/publications.htm>
2 - Perennial Ryegrass will germinate faster and at lower soil temperatures than Tall Fescues, thereby providing cover and erosion resistance for seedbeds.
3 - Use seasonal nurse crop in accordance with seedings dates as stated below:
March, April, May 15th ... Annual Rye
May 16th, August 15th ... Foothill Millet
August 16th, September, October ... Annual Rye
November - February ... Winter Rye
4 - All legume seed must be properly inoculated. If Alfalfa is used, increase to 30 lbs/acre. If Weeping Lovegrass is used, include in any slope or low maintenance mixture during warmer seeding periods, increase to 30-40 lbs/acre

FERTILIZER & LIME

• Apply 10-20-10 fertilizer at a rate of 500 lbs. / acre (or 12 lbs. / 1,000 sq. ft.)
• Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)

NOTE:
- A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.
- Incorporate the lime and fertilizer into the top 4 - 6 inches of the soil by disk or by other means.
- When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin #4. 2003 Nutrient Management for Development Sites at <http://www.dcr.state.va.us/sw/e&s/htm#pubs>

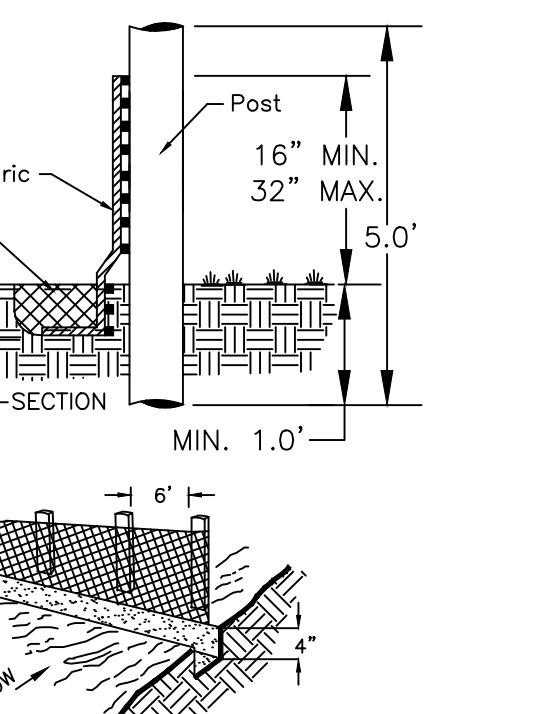
PS PERMANENT SEEDING SPECIFICATIONS



CD ROCK CHECK DAM

| TABLE 3.31-B | | |
|--|---|--------------------------|
| (Revised June 2003) | | |
| TEMPORARY SEEDING SPECIFICATIONS | | |
| QUICK REFERENCE FOR ALL REGIONS | | |
| SEED | | |
| APPLICATION DATES | SPECIES | APPLICATION RATES |
| Sept. 1 - Feb. 15 | 50/50 Mix of Annual Ryegrass (Iolium multi-florum) & Cereal (Winter) Rye (Secale cereale) | 50 - 100 (lbs/acre) |
| Feb. 16 - Apr. 30 | Annual Ryegrass (Iolium multi-florum) | 60 - 100 (lbs/acre) |
| May 1 - Aug. 31 | German Millet | 50 (lbs/acre) |
| FERTILIZER & LIME | | |
| • Apply 10-10-10 fertilizer at a rate of 450 lbs. / acre (or 10 lbs. / 1,000 sq. ft.) • Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.) | | |
| NOTE: 1 - A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site. 2 - Incorporate the lime and fertilizer into the top 4 - 6 inches of the soil by disk or by other means. 3 - When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin #4. 2003 Nutrient Management for Development Sites at http://www.dcr.state.va.us/sw/e&s/htm#pubs | | |

TS TEMPORARY SEEDING SPECIFICATIONS



SF CONSTRUCTION OF A SILT FENCE

EROSION AND SEDIMENT CONTROL STANDARD - 3.05

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 WWA 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 WWA CONCERNING PERMITS AND CONNECTIONS TO EXISTING LINES.

3. ALL WORK SHALL BE SUBJECT TO INSPECTION BY ROANOKE COUNTY. NOTIFY APPROPRIATE OFFICIALS PRIOR TO COMMENCEMENT OF WORK.

4. SITE SHALL BE TO SUB GRADE PRIOR TO INSTALLATION OF UTILITIES. ALL UTILITIES SHALL BE IN PLACE PRIOR TO PLACEMENT OF PAVEMENT BASE MATERIAL.

5. USE SELECT MATERIAL FREE FROM FROST, LARGE CLOUDS, STONES, AND DEBRIS FOR BACK FILL FROM THE BOTTOM OF THE TRENCH TO TWELVE (12) INCHES ABOVE THE PIPE.

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

7. MAKE ALL PIPE JOINTS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE COUNTY'S SPECIFICATIONS. MAKE JOINTS BETWEEN DIFFERENT PIPE MATERIALS WITH STANDARD FITTINGS MANUFACTURED FOR THE PURPOSE.

8. MAINTAIN ALL WATER LINES AT TEN (10) FEET HORIZONTAL SEPARATION FROM SEWER LINES AND MANHOLES; MEASURE THE DISTANCE EDGE-TO-EDGE. WHEN LOCAL CONDITIONS PREVENT THE DESIRED HORIZONTAL SEPARATION, THE WATERLINE MAY BE LAID CLOSER TO THE SEWER OR MANHOLE PROVIDED THAT THE BOTTOM OF THE WATERLINE SHALL BE AT LEAST EIGHTEEN (18) INCHES ABOVE THE TOP OF THE SEWER, WHERE THIS VERTICAL SEPARATION CANNOT BE OBTAINED, CONSTRUCT THE SEWER OF AWWA APPROVED WATER PIPE AND PRESSURE TREAT IN PLACE PRIOR TO BACKFILLING. THE SEWER MANHOLE SHALL BE OF WATERTIGHT CONSTRUCTION TESTED IN PLACE.

9. SEWER AND WATER TAPS SHALL BE LOCATED BY THE CONTRACTOR AND MADE BY THE WESTERN VIRGINIA WATER AUTHORITY.

10. LOCATE AND UNCOVER VALVE VIALS AND MANHOLES AFTER PAVING AND ADJUST TO FINAL GRADE, IF NECESSARY.

11. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS WHERE UTILITIES ENTER THE BUILDING.

12. 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 SHOWN ON THE PLANS.

-- IF THERE APPEARS TO BE ANY CONFLICT.

-- UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THE PLANS.

13. REPAIR ALL DAMAGE CAUSED TO ANY UTILITY, PUBLIC OR PRIVATE, AS A RESULT OF THIS WORK AT NO ADDITIONAL COST TO OWNER.

14. PROVIDE A CONTINUOUS AND UNIFORM BEDDING IN THE TRENCH FOR ALL PIPE. REMOVE STONES AND ROCKS FOUND IN THE TRENCH FOR A DEPTH OF AT LEAST SIX (6) INCHES BELOW THE BOTTOM OF THE PIPE AND TAMP SELECT FILL BEDDING PROVIDED. AFTER THE PIPE HAS BEEN PLACED IN THE TRENCH, BACK FILL THE TRENCH WITH SELECT MATERIAL, THOROUGHLY COMPACT TO 90% (95% UNDER PAVEMENT OR CONCRETE SLAB) OF THE STANDARD PROCTOR (ASTM D-698) USING CARE NOT TO DAMAGE THE PIPE. USE VDOT STANDARD PB-1 TRENCH FOR STORM SEWER AND UB-1 FOR SANITARY SEWER AND WATER.

15. PLACE BACK FILL FOR ALL UTILITIES IN ACCORDANCE WITH THE COUNTY'S SPECIFICATIONS, AND THE FOLLOWING CRITERIA:

(1) BACK FILL NO TRENCH UNTIL AUTHORIZED BY THE COUNTY/WWA. MATERIALS USED FOR BACK FILL FROM THE BOTTOM OF THE TRENCH TO TOP OF THE PIPE SHALL BE CRUSHER RUN, OR APPROVED EQUAL MATERIAL, THOROUGHLY AND CAREFULLY COMPACT THE BACK FILL MATERIAL.

(2) COMPACT BACK FILL BY MECHANICAL TAMING THROUGHOUT THE DEPTH OF THE TRENCH TO INSURE A SUITABLE SUBBASE ACCEPTABLE TO THE ROAD ENGINEER. IF THE MATERIAL TAKEN FROM THE DITCH IS NOT SUITABLE FOR BACK FILLING, REMOVE IT AND USE AN ACCEPTABLE MATERIAL FOR BACK FILLING THE TRENCH.

16. IN AREAS OF WATER LINE CONSTRUCTION, GRADES SHALL BE WITHIN SIX (6) INCHES OF FINISHED SUB GRADE PRIOR TO THE COMMENCEMENT OF THIS WORK.

17. MINIMUM COVER OVER WATER AND SANITARY SEWER LINES SHALL BE THREE (3) FEET.

18. THE WESTERN VIRGINIA WATER AUTHORITY COUNTY SHALL MAKE ALL CONNECTIONS TO EXISTING WATER MAINS.

19. THE CONTRACTOR SHALL INSTALL ALL WATER SERVICE CONNECTIONS AND METER BOXES.

20. PIPES AND FITTINGS SHALL BE POLYVINYL.

21. CONNECT PIPE TO MANHOLES THROUGH PRE CAST OPENINGS AND JOIN WITH EITHER A FLEXIBLE BOOT ADAPTER OR A PIPE SEAL GASKET.

CONSTRUCTION SITE PLAN GENERAL NOTES

CONSTRUCTION METHODS

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS, VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS, WHERE APPLICABLE.

2. THE LOCATION OF EXISTING UTILITIES AS SHOWN IS APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION WORK AND NOTIFY ENGINEER IMMEDIATELY IF LOCATIONS DIFFER FROM PLANS.

3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-552-7001 OR 811 PRIOR TO ANY CONSTRUCTION WORK IN THIS AREA.

UNDERGROUND UTILITIES

1. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING LINE AND GRADE FOR ALL DRY UTILITIES PRIOR TO THE START OF CONSTRUCTION.

2. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING DRY UTILITY LINES AND GRADES AGAINST ALL PROPOSED UTILITIES SHOWN ON THE PLANS. POTENTIAL CONFLICTS SHALL BE REPORTED TO THE ENGINEER AS SOON AS POSSIBLE.

3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING TELEPHONE, CABLE, FIBER OPTIC, AND ELECTRICAL SERVICES TO THE PROJECT. CONTACT UTILITY PROVIDERS AS SOON AS POSSIBLE TO BEGIN COORDINATION.

4. THE CONTRACTOR SHALL REVIEW SITE AND BUILDING DRAWINGS TO VERIFY COORDINATION OF UTILITY INVERTS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.

GRADING NOTES

G.C. SHALL REVIEW THE "REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION CAVERN MARKET," F&R PROJECT NO. 6200342, DATED NOVEMBER 2016. IF ANY DISCREPANCIES ARE FOUND BETWEEN THE REPORT AND THE NOTES ON THESE PLANS, THE REPORT SHALL GOVERN.

REFER TO BUILDING PLANS FOR SUBGRADE AND UTILITY TRENCHES WITHIN 5' OF THE BUILDING ENVELOPE.

REMOVE TREES, SHRUBS, GRASS, AND OTHER VEGETATION, IMPROVEMENTS OR OBSTRUCTIONS AS REQUIRED TO PERMIT INSTALLATION OF NEW CONSTRUCTION. REMOVE TREES AND OTHER VEGETATION, INCLUDING STUMPS AND ROOTS, COMPLETELY IN AREAS REQUIRED FOR SUBSEQUENT SEEDING. CUT OFF TREES AND STUMPS IN AREAS TO RECEIVE FILL MORE THAN THREE FEET IN DEPTH TO WITHIN EIGHT INCHES OF THE ORIGINAL GROUND

