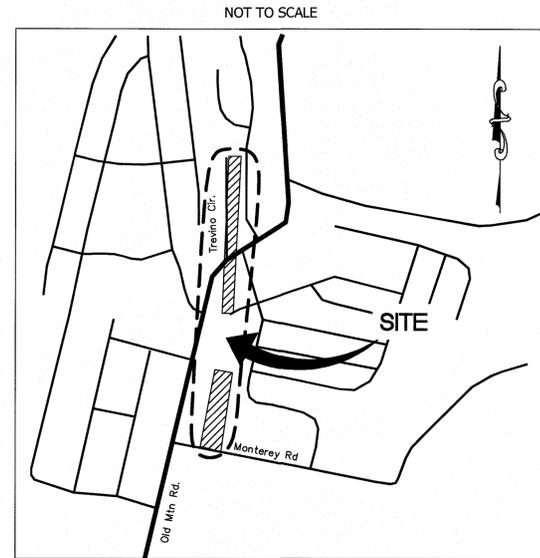


PROJECT LOCATION MAP



DEPARTMENT OF PUBLIC WORKS  
 STORMWATER DIVISION  
 1 802 COURTLAND ROAD, NE  
 ROANOKE, VIRGINIA 24012  
 PHONE: (540) 853-5900  
 FAX: (540) 853-1270

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CONSTRUCTION PROCEDURE REQUIREMENTS

- NOTICE: ALL LANDOWNERS, DEVELOPERS, AND CONTRACTORS - FAILURE TO COMPLY WITH THE CONSTRUCTION PROCEDURE REQUIREMENTS LISTED BELOW MAY RESULT IN THE COSTLY REMOVAL OF STRUCTURES, TIME DELAYS, OR THE ISSUANCE OF A STOP WORK ORDER.
- RIGHT-OF-WAY EXCAVATION PERMIT - PRIOR TO THE COMMENCEMENT OF ANY DIGGING, ALTERATION OR CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY (STREETS, ALLEYS, PUBLIC EASEMENTS), A RIGHT-OF-WAY EXCAVATION PERMIT SHALL BE APPLIED FOR AND OBTAINED BY THE CONTRACTOR FROM THE CITY OF ROANOKE.
  - LAND DISTURBANCE PERMIT - AN APPROVED EROSION AND SEDIMENT CONTROL PLAN FOR ANY BORROW/FILL SITE ASSOCIATED WITH THE PROJECT MUST BE SUBMITTED PRIOR TO THE ISSUANCE OF A LAND DISTURBANCE PERMIT.
  - PLANS AND PERMITS - A COPY OF THE PLANS AS APPROVED BY THE CITY (SIGNED BY THE PROPER CITY OFFICIALS) AND ALL PERMITS ISSUED BY THE CITY SHALL BE AVAILABLE AT THE CONSTRUCTION SITE AT ALL TIMES OF ONGOING CONSTRUCTION.
  - LOCATION OF UTILITIES - THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.
  - CONSTRUCTION ENTRANCE - THE CONTRACTOR SHALL INSTALL AN ADEQUATE CONSTRUCTION ENTRANCE FOR ALL CONSTRUCTION RELATED EGRESS FROM THE SITE. SIZE AND COMPOSITION OF CONSTRUCTION ENTRANCE SHALL BE AS SHOWN ON THE PLANS.
  - STREETS TO REMAIN CLEAN - IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE PUBLIC STREET ADJACENT TO THE CONSTRUCTION ENTRANCE REMAINS FREE OF MUD, DIRT, DUST, AND/OR ANY TYPE OF CONSTRUCTION MATERIALS OR LITTER AT ALL TIMES.
  - BARRICADES/DITCHES - THE CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF ALL EXCAVATED DITCHES AND SHALL FURNISH AND ENSURE THAT ALL BARRICADES PROPER AND NECESSARY FOR THE SAFETY OF THE PUBLIC ARE IN PLACE.
  - SEWER AND PAVEMENT REPLACEMENT - CONSTRUCTION OF STORM SEWERS AND THE REPLACEMENT OF PAVEMENT SHALL BE IN ACCORDANCE WITH APPROVED STANDARDS AND SPECIFICATIONS OF THE CITY OF ROANOKE AND THE WESTERN VIRGINIA WATER AUTHORITY.
  - APPROVED PLANS/CONSTRUCTION CHANGES - ANY CHANGE OR VARIATION FROM CONSTRUCTION DESIGN AS SHOWN ON THE OFFICIALLY APPROVED PLANS SHALL BE APPROVED BY THE EROSION AND SEDIMENT CONTROL AGENT PRIOR TO SAID CHANGES OR VARIATION IN CONSTRUCTION BEING MADE.
  - FINAL ACCEPTANCE/CITY - THE OWNER OR DEVELOPER SHALL FURNISH THE CITY OF ROANOKE'S PLANNING BUILDING AND DEVELOPMENT DEPARTMENT WITH A FIELD SURVEYED FINAL CORRECT SET OF AS-BUILT PLANS OF THE NEWLY CONSTRUCTED STORM DRAIN AND/OR STORMWATER MANAGEMENT FACILITIES PRIOR TO FINAL ACCEPTANCE AND ISSUANCE OF A CERTIFICATE OF OCCUPANCY BY THE CITY. AS-BUILT PLANS SHALL BE PROVIDED IN THE STATE PLACE VIRGINIA SOUTH COORDINATE SYSTEM, NAD 1983, FIPS 4502 FEET, US SURVEY FEET, DATUM NA 83, IN THE FORM OF 1 PAPER COPY AND 1 DIGITAL AUTOCAD FILE.

CONSULTING ENGINEERS



**Draper Aden Associates**  
 Engineering • Surveying • Environmental Services

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DAA PROJECT NO: B13179B-02  
 SUBMITTAL DATE: MARCH 27, 2015

COMMISSION NUMBER: \_\_\_\_\_



PROJECT NAME

TREVINO CIRCLE/MONTEREY ROAD  
 CHANNEL IMPROVEMENTS

CITY STORMWATER PLAN NUMBER: 5909

CITY PLANNING NUMBER: CP140054

REVISION BY	DESCRIPTION:	DATE

APPROVED FOR CONSTRUCTION

<i>Donna Stordenne</i> STORMWATER MANAGER	<u>9/7/2016</u> DATE
<i>Robert K. Bengtson</i> DIRECTOR OF PUBLIC WORKS	<u>09/07/16</u> DATE
<i>Sheena M. Knall</i> ASSISTANT CITY MANAGER - OPERATIONS	<u>9/7/16</u> DATE

ADVERTISED DATE: \_\_\_\_\_

SET NUMBER: \_\_\_\_\_

SHEET NUMBER: 1 OF 17

**STATE MINIMUM STANDARDS FOR EROSION CONTROL**

AN EROSION AND SEDIMENT CONTROL PROGRAM ADOPTED BY A DISTRICT OR LOCALITY MUST BE CONSISTENT WITH THE FOLLOWING CRITERIA, TECHNIQUES AND METHODS:

- MS-1 PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR. **STABILIZATION MEASURES ARE SHOWN ON THE PLAN & PROFILE SHEETS.**
- MS-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. **SOIL STOCKPILING IS NOT ANTICIPATED ON THIS PROJECT; HOWEVER, ANY SOIL STOCKPILES SHALL BE SURROUNDED BY SILT FENCE.**
- MS-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 DIVISION OF SOIL AND WATER CONSERVATION OF THE DEPARTMENT OF CONSERVATION AND RECREATION, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION. **THE LOCATION OF VEGETATIVE STABILIZATION IS SHOWN ON THE PLAN AND PROFILE SHEETS. DETAILS CAN BE FOUND ON SHEET C401, INCLUDING SEED MIXES. PLEASE NOTE THAT A FAVOR SEED MIX IS SPECIFIED ON THIS PROJECT, IN LIEU OF THE STANDARD SEED MIX.**
- MS-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. **NOT APPLICABLE**
- MS-5 STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION. **NOT APPLICABLE**
- MS-6 SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN. **NOT APPLICABLE**
  - A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.
  - B. THE SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A TWENTY-FIVE YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION, OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.
- MS-7 CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED. **SLOPE STABILIZATION MEASURES ARE SHOWN ON THE PLAN & PROFILE SHEETS, AS WELL AS THE DETAIL SHEETS.**
- MS-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. **CHANNEL & PIPE CONNECTIONS TO THE EXISTING STREAM ARE SHOWN ON THE PLAN & PROFILE SHEETS.**
- MS-9 WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED. **NOT ANTICIPATED. IF WATER IS OBSERVED SEEPING FROM A SLOPE FACE, THE CONTRACTOR SHOULD CONTACT THE OWNER BEFORE PROCEEDING.**
- MS-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. **NOT APPLICABLE**
- MS-11 BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL. **STONE OUTLET PROTECTION AND CHANNEL LINING INFORMATION IS SHOWN ON THE PLAN AND PROFILE SHEETS, WHERE APPLICABLE.**
- MS-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 CONCORDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS. **PLEASE REFER TO THE PLANS AND DETAILS FOR ARMORING, TURF REINFORCEMENT MATTING AND COR LOG WALLS ARE PROPOSED TO MINIMIZE CHANNEL EROSION.**
- MS-13 WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, IT IS NECESSARY TO CONSTRUCT A PERMANENTLY ARMORED CROSSING. **ALL WORK WITHIN THE STREAM WILL NEED TO COMPLY WITH THE ARMY CORPS OF ENGINEERS PERMIT.**
- MS-14 ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET. **ALL WORK WITHIN THE STREAM WILL NEED TO COMPLY WITH THE ARMY CORPS OF ENGINEERS PERMIT.**
- MS-15 THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED. **THIS APPLIES TO ALL STABILIZATION WORK ON THIS PROJECT, INCLUDING COR LOG WALLS AND TURF REINFORCEMENT MATTING.**
- MS-16 UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA: **NOT APPLICABLE**
  - A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
  - B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
  - C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
  - D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
  - E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
  - F. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.
- MS-17 WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE, WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL SUBDIVISION LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES. **PLEASE SEE PLAN AND PROFILE SHEETS FOR CONSTRUCTION ENTRANCE LOCATIONS.**
- MS-18 ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION, OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED UNLESS OTHERWISE AUTHORIZED BY THE VESCP ADMINISTRATOR. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION. **ALL TEMPORARY MEASURES TO BE REMOVED PER THIS MINIMUM STANDARD.**
- MS-19 PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA. 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. **THIS PROJECT MAKES USE OF NATURAL CHANNEL DESIGN CONCEPTS, AND IS EXEMPT AS DESCRIBED ABOVE.**
  - A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.
  - B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
    - (1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR
    - (2)(A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS.
    - (B) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND
    - (C) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.
  - C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:
    - (1) IMPROVE THE CHANNELS TO A CONDITION WHERE A TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO CHANNEL THE BED OR BANKS; OR
    - (2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES;
    - (3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR
    - (4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP AUTHORITY TO PREVENT DOWNSTREAM EROSION.
  - D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.
  - E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE

- 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. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.
- H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.
  - I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.
  - J. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. 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 NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO (I) DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; (II) DETAIN AND RELEASE A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND (III) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE OF THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A CORRECTION 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 § 101-562 OR 101-570 OF THE ACT.
  - M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 101-561 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 101-603.2 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 (VSMMP) PERMIT REGULATIONS.
  - N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 4VAC50-60-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMMP) PERMIT REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF MINIMUM STANDARD 19.

**GENERAL EROSION AND SEDIMENT CONTROL NOTES**

- ES-1 UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH) AND VIRGINIA REGULATIONS 9VAC25-840 EROSION AND SEDIMENT CONTROL REGULATIONS. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- ES-2 THE CITY OF ROANOKE MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
- ES-3 ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING, GRADING OR LAND-DISTURBING AND SEQUENCE OF CONSTRUCTION APPROVED.
- ES-4 A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- ES-5 PRIOR TO LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS OR OFF-SITE FILL ACTIVITIES, THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND FOR APPROVAL BY THE CITY OF ROANOKE.
- ES-6 THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE CITY OF ROANOKE.
- ES-7 SITE GRADING IS TO DRAIN TO THE PERIMETER CONTROLS AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING CONSTRUCTION, UNTIL FINAL STABILIZATION IS ACHIEVED.
- ES-8 DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
- ES-9 THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY (AT LEAST DAILY) AND AFTER EACH RUNOFF-PROVOKING EVENT OR CLEANUP OF NONERODIBLE MATERIAL SHALL BE PROVIDED TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

**PLANTING NOTES**

- 1A. ALL TREES SHALL BE PLANTED IN GOOD CONDITION AND MEET 'AMERICAN STANDARD FOR NURSERY STOCK' (1990), ANSI Z60.1-1990, AS MAY BE AMENDED.
- 1B. ALL TREES OF THE SAME SPECIES SHALL BE UNIFORM IN SIZE AND STRUCTURE AND SHALL COME FROM THE SAME SOURCE.
- 2. THE PLANTING OF TREES SHALL BE DONE IN ACCORDANCE WITH THE STANDARDIZED LANDSCAPE SPECIFICATION JOINTLY ADOPTED BY THE VA NURSERYMAN'S ASSOCIATION AND THE VA SOCIETY OF LANDSCAPE DESIGNERS.
- 3. REFER TO DRAWINGS FOR VARIETIES, LAYOUT, AND SPACING OF PLANT MATERIALS. HAVE TREE LOCATIONS STAKED AND GROUNDCOVER BEDS PREPARED AND SPRAY-PAINT OUTLINED ON THE GROUND FOR APPROVAL BY OWNER'S REPRESENTATIVE PRIOR TO PLANT INSTALLATION. QUANTITIES SHOWN ON DRAWINGS SHALL TAKE PRECEDENCE OVER QUANTITIES SHOWN ON THE PLANT LIST. FIELD ADJUSTMENTS NECESSARY TO WORK AROUND UNKNOWN UTILITIES MAY BE REQUIRED.
- 4. ALL PLANT MATERIALS MUST BE APPROVED AND INSPECTED BY OWNER'S REPRESENTATIVE AND ACCEPTED PRIOR TO INSTALLATION. NOTIFY OWNER'S REPRESENTATIVE 48 HOURS PRIOR TO ARRIVAL TO SITE.
- 5. PLANTING TIMING: UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE OWNER'S REPRESENTATIVE, THE PLANTING SHALL BE DONE DURING THE FOLLOWING SEASONS FOR ALL TREES, SHRUBS, AND GROUNDCOVERS:
  - 5.1 SEPTEMBER 15 TO DECEMBER 1 OR
  - 5.2 MARCH 1 TO MAY 1.
- 5.3 PLANTING AT OTHER DATES WILL BE SUBJECT TO APPROVAL BY THE OWNER'S REPRESENTATIVE AND MAY REQUIRE SPECIAL PROCEDURES.
- 6. MOVE AND LIFT TREES, SHRUBS, AND PLANTS BY THE ROOTBALL ONLY AND NEVER BY THE TRUNK OR STALK.
- 7. IF SYNTHETIC OR METAL WRAPPING IS USED ON ANY ROOTBALL, REMOVE IT ENTIRELY BEFORE PLANTING. METAL GAGES MUST ALSO BE REMOVED ENTIRELY FROM THE ROOTBALL.
- 8. CUT, TRIM AND REMOVE THE TOP 6"-9" OF NATURAL BURLAP WRAPPING FROM ROOTBALL PRIOR TO FINAL PLANTING SOIL BACKFILLING.
- 9. WATERING OF PLANTS: WATERING IS TO PROVIDE VIGOROUS PLANT GROWTH AND SHALL BE SUFFICIENT TO MAINTAIN MOISTURE IN THE ENTIRE ROOT ZONE.
  - 9.1 WATERING OF PLANT MATERIAL SHALL OCCUR IMMEDIATELY AFTER PLANTING AND WITHIN 24 HOURS OF INSTALLATION. THE FIRST WATERING SHALL FLOOD THE PLANTING HOLE TO REMOVE AIR POCKETS AND SATURATE THE SOIL.
  - 9.2 WATERING SHALL CONTINUE EACH DAY FOR ONE WEEK FROM INSTALLATION AT A RATE OF 2 GALLONS PER INCH TREE CALIPER.
  - 9.3 AFTER THE FIRST WEEK OF WATERING, WATERING SHALL CONTINUE ON A WEEKLY BASIS UNTIL PLANTS ARE FULLY ESTABLISHED. WEEKLY WATERING SHALL BE AT A RATE OF 2 GALLONS PER INCH OF TREE CALIPER.
- 10. ALL PLANTS SHALL BE GUARANTEED TO REMAIN ALIVE AND HEALTHY FOR A PERIOD OF ONE YEAR BEGINNING FROM THE DATE OF INSPECTION BY THE OWNER'S REPRESENTATIVE AND A WRITTEN FIELD REPORT STATING OWNER ACCEPTANCE FOR PLANTS THAT MEET QUALITY STANDARDS, PLANTING SPECIFICATIONS, PROPER LAYOUT PLACEMENT, AND EXHIBIT A HEALTHY VIGOROUS GROWTH.
  - 10.1 PLANTS THAT ARE EXHIBITING 25 PERCENT OR MORE DEAD GROWTH OR DO NOT MEET THE PLANT MATERIAL QUALITY SPECIFICATIONS SHALL BE REPLACED IMMEDIATELY OR UPON THE NEXT PLANTING SEASON WHICHEVER IS SOONER.
  - 10.2 NEW PLANTS, REQUIREMENTS, ETC. AND METHOD OF PLACING SHALL COMPLY WITH THESE SPECIFICATIONS AND DRAWINGS. PLANTS REPLACING DEAD PLANTS SHALL RECEIVE THE SAME CARE AND MEET SPECIFICATIONS.
  - 10.3 WARRANTY SHALL BE LIMITED TO ONE REPLACEMENT PER PLANT.
  - 10.4 CONFORMANCE OF PLANTING LAYOUT TO PLANTING PLAN MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. PLANTS NOT PROPERLY LOCATED AS SHOWN ON THE PLANTING PLAN SHALL BE REPLANTED TO THE PROPER LOCATION AT THE EXPENSE OF THE CONTRACTOR.
- 11. PLANTING HOLE SHALL BE 3 TIMES LARGER THAN THE SIZE OF THE ROOT BALL DIAMETER. SCARIFY BOTTOM AND EDGES OF PLANTING PIT SUFFICIENTLY TO ALLOW BONDING OF THE PLANTING SOIL AND EXISTING SOIL.
- 12. ALL PLANTS SHALL BE MULCHED WITH A 3" MULCH LAYER WITHIN 24 HOURS OF PLANTING. MULCH SHALL BE DOUBLE-SHREDDED HARDWOOD BARK MULCH AND SHALL COVER THE PLANTING BED ENTIRELY, EXCEPT FOR A ONE INCH CLEAR SPACE AROUND THE TRUNK SHALL REMAIN FREE FROM MULCH.
- 13. WATERING BERM: CONSTRUCT A 4" MIN. SOL BERM AROUND EVERY TREE PLANTING. SAUCERS WILL BE ESTABLISHED AT PLANTING TO HOLD WATERING. SAUCERS ARE TO BE MAINTAINED UNTIL PLANTS ARE FULLY ESTABLISHED, 2 YEARS.
- 14. TREE STAKING SHALL BE REQUIRED FOR PLANTS TALLER THAN 6 FEET AND WITH A TREE CALIPER GREATER THAN 1". USE TWO 3" DIA. OR 2"x2" WOOD STAKES, 6'-0" LENGTH. STAKES SHALL BE PLACED A MIN. OF 18" INTO ADJACENT GROUND. TREE GUYS SHALL BE "ABORTIVE", A UV DEGRADABLE NYLON WEBBING AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS.

**GENERAL SITE & ESC NOTES:**

- 1. GENERAL SITE INFORMATION:
  - A. TOPOGRAPHIC SURVEY PERFORMED BY DRAPER ADEN ASSOCIATES DURING THE WEEK OF JANUARY 20, 2014. REFER TO SHEET C101 FOR ADDITIONAL SURVEY NOTES.
- 2. SITE CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING GENERAL REQUIREMENTS:
  - A. FIELD LAYOUT SHALL BE BASED ON THE DIMENSIONS SHOWN ON THE DRAWINGS. DIMENSIONS ARE FROM INSIDE BOTTOM FACE OF CURB, UNLESS NOTED OTHERWISE.
  - B. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL NECESSARY PERMITS PRIOR TO THE START OF CONSTRUCTION, AND TO PAY ALL NECESSARY PERMIT AND UTILITY CONNECTION FEES.
  - C. NOTHING ON THESE CONTRACT DRAWINGS SHALL BE CONSTRUED AS A GUARANTEE THAT UTILITIES INDICATED AS EXISTING ARE IN THE LOCATION INDICATED OR THAT THEY ACTUALLY EXIST, OR THAT OTHER EXISTING UTILITIES ARE NOT WITHIN THE AREA OF OPERATIONS. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL MAKE ALL NECESSARY INVESTIGATIONS TO DETERMINE THE EXISTENCE, LOCATIONS, AND ELEVATIONS OF EXISTING UTILITIES IN THE WORK AREA. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITIES AND STRUCTURES WITHIN THE CONSTRUCTION ZONE. DAMAGE TO STRUCTURES, UTILITIES, AND EQUIPMENT TO REMAIN SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE, IN ACCORDANCE WITH THE STATE AND LOCAL REQUIREMENTS, THE OWNER'S REPRESENTATIVE, AND THE AUTHORITIES HAVING JURISDICTION. CONTRACTOR SHALL CONTACT MISS UTILITY AT 811, AT LEAST THREE WORKING DAYS PRIOR TO ANY EARTH MOVING OR DIGGING ACTIVITIES.
  - D. CONTRACTOR SHALL OBTAIN ADVANCE APPROVAL FROM THE CITY OF ROANOKE FOR ANY WORK PERFORMED IN ROADWAYS OR WALKWAYS ADJACENT TO SITE AND FOR ANY DETOURING OF TRAFFIC. PROVIDE ALL SAFETY MEASURES AND DEVICES REQUIRED BY APPLICABLE REGULATORY AGENCIES. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH THE 2011 VIRGINIA WORK AREA PROTECTION MANUAL. ONE-WAY TRAFFIC WILL BE PERMITTED FOR LIMITED DISTANCES ONLY AS APPROVED BY THE CITY OF ROANOKE.
  - E. CONTRACTOR SHALL BARRICADE OPEN EXCAVATIONS OCCURRING AS PART OF THIS WORK AND POST WITH WARNING LIGHTS. OPERATE WARNING LIGHTS AS RECOMMENDED BY AUTHORITIES HAVING JURISDICTION.
  - F. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH SECTION 59.1-406, ET SEQ. OF THE CODE OF VIRGINIA (OVERHEAD HIGH VOLTAGE LINES SAFETY ACT).
  - G. ALL IMPROVEMENTS AND WORK SHALL BE SUBJECT TO INSPECTION BY THE CITY OF ROANOKE AND ITS REPRESENTATIVES.
  - H. CONTRACTOR SHALL MAINTAIN EMERGENCY, SERVICE, AND DELIVERY VEHICLE ACCESS TO THE SURROUNDING AREA; COORDINATE WITH THE CITY OF ROANOKE.
- 3. TOTAL DISTURBED AREA: 1.08 AC
- 4. MINIMUM MEASURES ARE INDICATED. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION AND MAINTENANCE OF THESE MINIMUM REQUIREMENTS AND ALL OTHER MEASURES NECESSARY TO CONTROL, FILTER, AND PREVENT POLLUTANTS FROM ENTERING THE RECEIVING WATER BODY. MEASURES SHALL BE PLACED PRIOR TO COMMENCEMENT OF UPSLOPE EARTHWORK ACTIVITIES. IN NO CASE DURING CONSTRUCTION SHALL WATER RUNOFF BE DIVERTED OR ALLOWED TO FLOW TO LOCATIONS WHERE ADEQUATE PROTECTION HAS NOT BEEN PROVIDED. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL UPSLOPE DISTURBED AREAS ARE STABILIZED.
- 5. ALL WORK SHALL BE SUBJECT TO INSPECTION BY THE CITY OF ROANOKE AND THE COMMONWEALTH OF VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY. THESE AGENCIES HAVE THE RIGHT TO ADD OR DELETE EASC CONTROLS IN THE FIELD. ANY CHANGES REQUIRED BY THE INSPECTOR OR NOTED DEFICIENCIES SHALL BE CORRECTED BY THE CONTRACTOR.
- 6. PERMANENT SEEDING SHALL BE APPLIED TO INDICATED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. PERMANENT SEEDING SHALL ALSO BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN 1 YEAR.
- 7. IF PERMANENT SEEDING IS NOT APPLIED TO DENUDED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE, THE ASSOCIATED AREA SHALL BE TEMPORARILY SEEDDED. TEMPORARY SEEDING SHALL BE APPLIED WITHIN 7 DAYS ON DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE, BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 14 DAYS.
- 8. ENTRANCE LOCATIONS THAT ARE INDICATED MAY BE SHIFTED TO FIT FIELD CONDITIONS. ANY ENTRANCE THAT BECOMES ACTIVE PRIOR TO PERMANENT SITE STABILIZATION SHALL BE CLASSIFIED AS A TEMPORARY STONE CONSTRUCTION ENTRANCE AND SHALL BE INSTALLED IN ACCORDANCE WITH VESCH STANDARD AND SPECIFICATION NO. 3.02. DURING CONSTRUCTION, THE CONTRACTOR SHALL PERIODICALLY TOP-DRESS THE CONSTRUCTION ENTRANCE WITH CLEAN STONE. VEHICLES' TIRES SHALL BE WASHED IF THE CONSTRUCTION ENTRANCE FAILS TO REMOVE SOIL FROM THE TIRES OF VEHICLES ENTERING THE PAVED STREET. WASH WATER SHALL BE CARRIED AWAY FROM THE ENTRANCE TO AN APPROVED SETTLING AREA TO REMOVE SEDIMENT. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY BY THE CONTRACTOR. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A TRAPPING DISPOSAL AREA. NO WASHING BEFORE SWEEPING AND SHOVELING. CONTRACTOR SHALL FLAG AND CONTROL TRAFFIC WHILE REMOVAL IS BEING PERFORMED.
- 9. DUST SHALL BE CONTROLLED IN ACCORDANCE WITH VESCH, STD. 3.39.
- 10. SILT FENCE AND ALL OTHER EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED BEFORE ANY UPSLOPE ACTIVITIES BEGIN.
- 11. THE METHODS AND STRATEGIES TO CONTAIN EROSION AND SEDIMENT AS LISTED IN THE DOCUMENT ENTITLED "EROSION AND SEDIMENT CONTROL NARRATIVE - TREVINO CIRCLE/MONTEREY ROAD CHANNEL IMPROVEMENTS", SHALL BE FOLLOWED DURING CONSTRUCTION.
- 12. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.
- 13. ADJUST WATER METER BOXES AS NECESSARY - CONTACT THE WESTERN VIRGINIA WATER AUTHORITY FOR CONSULTATION.
- 14. NO ACCESSORY STRUCTURES OR DRIVEWAYS ARE ANTICIPATED TO BE AFFECTED BY THIS PROJECT.

**EROSION & SEDIMENT CONTROL PHASING NOTES:**

- 1. THE CONTRACTOR WILL DESIGNATE AN EMPLOYEE CERTIFIED AS THE "RESPONSIBLE LAND DISTURBER" (RLD), BY THE COMMONWEALTH OF VIRGINIA, DEPARTMENT OF ENVIRONMENTAL QUALITY (VAEQ), WHO IS IN CHARGE OF AND IS RESPONSIBLE FOR CARRYING OUT THE LAND-DISTURBING ACTIVITIES ON THIS PROJECT. THIS EMPLOYEE SHALL ALSO INSPECT FOR DEFICIENCIES IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND AT LEAST WEEKLY WHEN NO RAINFALL OCCURS. CONTRACTORS SHALL PROVIDE WRITTEN DOCUMENTATION TO THE CITY OF ROANOKE THAT THEY MEET THIS REQUIREMENT PRIOR TO AWARDING OF THE CONSTRUCTION CONTRACT, AND THE CITY OF ROANOKE SHALL PROVIDE THE NAME OF THE RLD TO VAEOQ AND THE CITY OF ROANOKE PRIOR TO LAND DISTURBANCE. IN THE INTERIM UNTIL THE WORK STARTS, MATTHEW B. JAMES, P.E., DRAPER ADEN ASSOCIATES, IS THE RLD.
- 2. AS FIRST STEP MEASURES, SILT FENCE SHALL BE INSTALLED AS INDICATED PRIOR TO UPSLOPE LAND DISTURBANCE.
- 3. THROUGHOUT CONSTRUCTION ACTIVITIES, APPLY DUST CONTROL MEASURES ACCORDING TO VESCH STD. & SPEC. 3.39.
- 4. PERMANENT SEEDING, TOPSOILING, AND MULCH WILL BE USED ON ALL DISTURBED AREAS THAT ARE NOT SCHEDULED TO RECEIVE LANDSCAPING (HARDWOOD MULCH, ETC.) ONCE BROUGHT TO FINAL GRADE.
- 5. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

**LEGEND**

EXISTING	PROPOSED
1000	1000
1561.3	1528.3 TC 1528.3
SHRUB	N/A
TREE	N/A
TREELINE	N/A
FENCE	N/A
PROPERTY LINE/ROW	---
LIMITS OF DISTURBANCE	---
BUILDING	N/A
ASPHALT	N/A
CONCRETE	N/A
GRAVEL	N/A
SIGN	N/A
BOLLARD	N/A
STORM SEWER	---
STORM CLEANOUT	N/A
STORM MANHOLE	⊗
STORM DRAINAGE INLET	■
SANITARY MANHOLE	N/A
SANITARY SEWER	N/A
UNDERGROUND ELECTRIC	N/A
OVERHEAD POWER	N/A
GUY WIRE	N/A
LIGHT POLE	N/A
ELECTRIC POLE	●
ELECTRIC MANHOLE	N/A
WATER	N/A
WATER VALVE	N/A
FIRE HYDRANT	N/A
WATER MANHOLE	N/A
STEAM MANHOLE	N/A
CNS	N/A
TELEPHONE LINE	N/A
UNDERGROUND TELEPHONE	N/A
TELEPHONE BOX	N/A
TELEPHONE MANHOLE	N/A
TELEPHONE PEDESTAL	N/A
TELEPHONE POLE	N/A
ROD FOUND	N/A
MONUMENT FOUND	N/A
BENCHMARK	N/A
SURFACE DRAINAGE	N/A
IRON PIN FOUND	N/A
GUARDRAIL	—+—+—+—+—
TEMP. CONST. EASEMENT	---
DRAINAGE EASEMENT	---



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**GENERAL NOTES & LEGEND**  
**TREVINO CIRCLE/MONTEREY ROAD**  
**CHANNEL IMPROVEMENTS**  
 ROANOKE, VIRGINIA

**REVISIONS**

DESIGNED BY:	MBJ
DRAWN BY:	MBJ
CHECKED BY:	CAH
SCALE:	NO SCALE
DATE:	03/27/2015
PROJECT NUMBER:	B13179B-02
<b>C002</b>	

**EROSION & SEDIMENT CONTROL LEGEND**

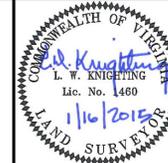
No.	TITLE	KEY	SYMBOL
3.02	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE	
3.05	SILT FENCE	SF	X X
3.30	TOPSOILING	TO	
3.32	PERMANENT SEEDING	PS	
3.36	TURF REINFORCED MATTING	B/M	
3.35	MULCHING	MU	
3.38	TREE PRESERVATION AND PROTECTION	TP	
3.39	DUST CONTROL	DC	

**NOTES:**

- 1.) Source of Meridian: Virginia State Plane, South zone, (NAD 83) based upon: static gps sessions performed by Draper Aden Associates.
- 2.) Vertical datum: (NAVD) based upon: static gps sessions performed by Draper Aden Associates.
- 3.) This survey was prepared without the benefit of a title commitment or title report and all easements and encumbrances that might be disclosed in a title search may not be shown.
- 4.) Utilities shown are based upon: Miss Utility, Ticket # A400602075, visible evidence and compiled records.
- 5.) This topographic survey, Monterey Road channel improvements was completed under the direct and responsible charge of Loren W. Knighting from an actual Ground survey made under my supervision; that the imagery and/or original data was obtained on the week of Jan. 20, 2014 ; and that this plat and/or map meets minimum accuracy standards unless otherwise noted.
- 6.) Contour interval: 1'.
- 7.) This survey was prepared for the City of Roanoke. Draper Aden Associates assumes no liability for reuse or modification of this document.
- 8.) Property lines shown hereon are compiled from record information.
- 9.) Draper Aden Associates provides benchmarks for the construction of the improvements shown on these plans. All other existing elevations are for reference to existing conditions only. Do not use spot elevations, finish floor elevations, elevations on manholes, elevations on survey nails, survey hubs, control points (horizontal points provided) or any other points for construction other than the provided benchmarks. Failure to utilize and verify the provided benchmarks could result in damages and additional cost that are the contractor's responsibility.

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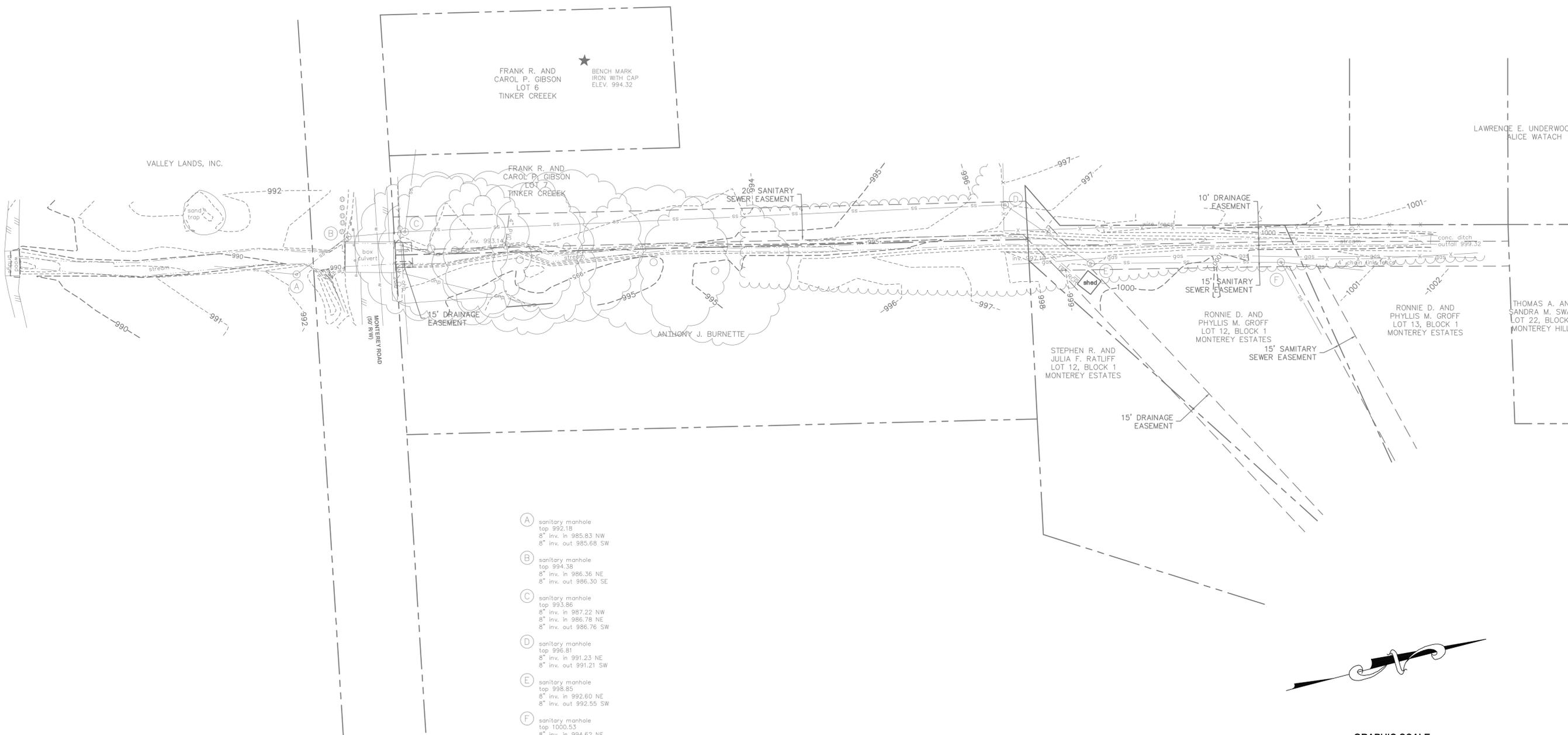
*L. W. Knighting* 1/16/2015



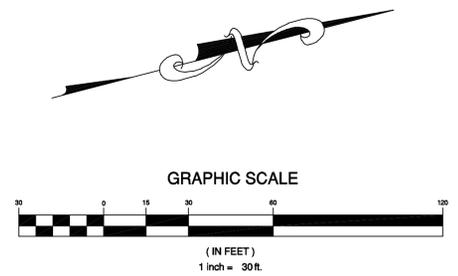
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- (A) sanitary manhole  
 top 992.18  
 8" inv. in 985.83 NW  
 8" inv. out 985.68 SW
- (B) sanitary manhole  
 top 994.38  
 8" inv. in 986.36 NE  
 8" inv. out 986.30 SE
- (C) sanitary manhole  
 top 993.86  
 8" inv. in 987.22 NW  
 8" inv. in 986.78 NE  
 8" inv. out 986.76 SW
- (D) sanitary manhole  
 top 996.81  
 8" inv. in 991.23 NE  
 8" inv. out 991.21 SW
- (E) sanitary manhole  
 top 998.85  
 8" inv. in 992.60 NE  
 8" inv. out 992.55 SW
- (F) sanitary manhole  
 top 1000.53  
 8" inv. in 994.62 NE  
 8" inv. in 995.93 NE  
 8" inv. out 994.50 SW



**EXISTING CONDITIONS**  
**TREVINO CIRCLE/MONTEREY ROAD**  
**CHANNEL IMPROVEMENTS**  
 ROANOKE, VIRGINIA

REVISIONS	
DESIGNED BY:	MBJ
DRAWN BY:	MBJ
CHECKED BY:	CAH
SCALE:	1" = 30'
DATE:	01/16/2015
PROJECT NUMBER:	B13179B-02
<b>C101</b>	

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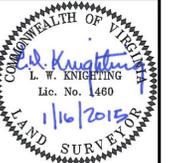
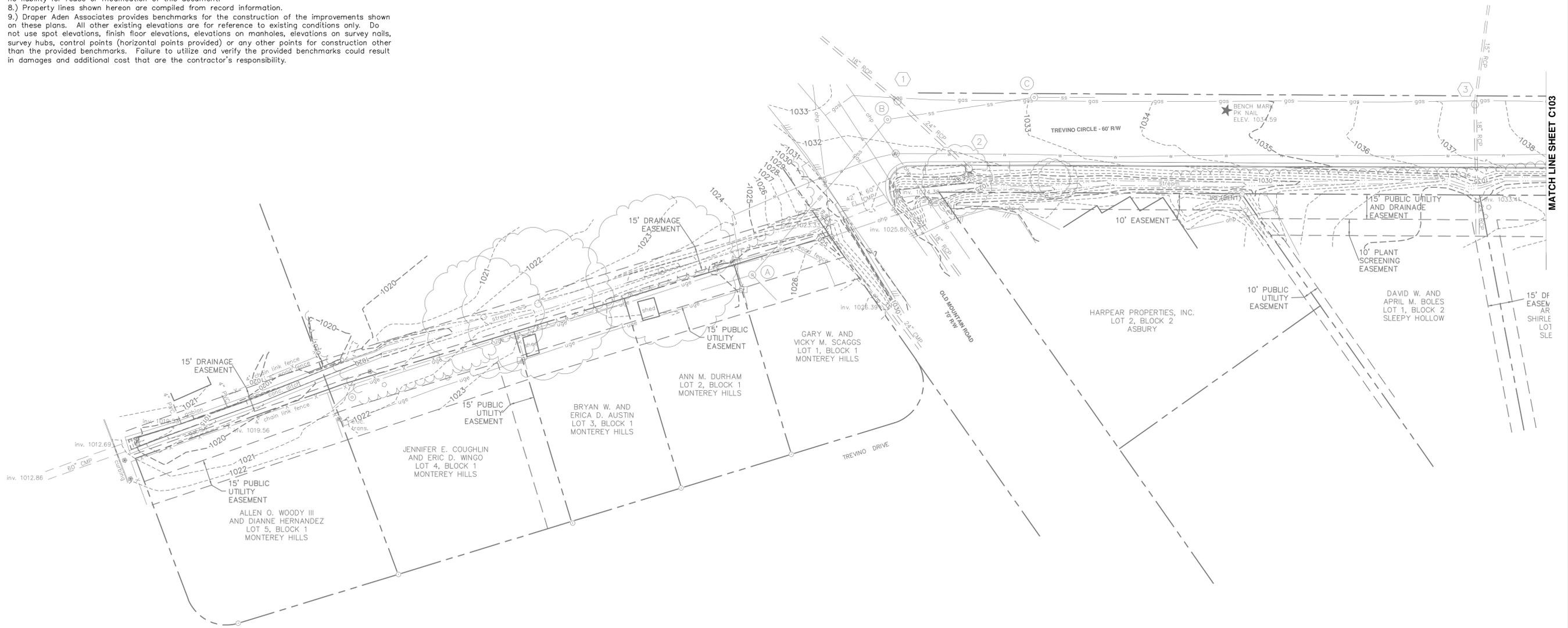
**NOTES:**

- 1.) Source of Meridian: Virginia State Plane, South Zone (NAD 83) based upon: static gps sessions performed by Draper Aden Associates personnel on Jan. 14, 2014.
- 2.) Vertical datum: (NAVD 88) based upon: static gps sessions performed by Draper Aden Associates personnel on Jan. 14, 2014.
- 3.) This survey was prepared without the benefit of a title commitment or title report and all easements and encumbrances that might be disclosed in a title search may not be shown.
- 4.) Utilities shown are based upon: SUE Quality Level B, ASCE 38-02 - field designation of underground utilities performed by Miss Utility, Ticket #A400602049; and visible evidence in conjunction with compiled records.
- 5.) This topographic survey for Trevino Circle channel improvements was completed under the direct and responsible charge of Loren W. Knighting from an actual Ground survey made under my supervision; that the imagery and/or original data was completed on Jan. 21, 2014; and that this plot and/or map meets minimum accuracy standards unless otherwise noted.
- 6.) Contour interval: 1'.
- 7.) This survey was prepared for the City of Roanoke, Virginia. Draper Aden Associates assumes no liability for reuse or modification of this document.
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- |   |  |
|---|--|
| <p>(A) sanitary manhole<br/>top 1025.10<br/>12" inv. in 1016.70 NW<br/>4" inv. in 1018.10 NE<br/>12" inv. out 1016.60 SE</p> <p>(B) sanitary manhole<br/>top 1032.03<br/>inv. in 1024.18 NW<br/>inv. out 1024.08 SE</p> <p>(C) sanitary manhole<br/>TOP 1033.07</p> | <p>1 storm manhole<br/>top 1032.50<br/>18" inv. in 1028.02 SW<br/>24" inv. out 1027.94 NE</p> <p>2 curb inlet<br/>top 1032.37<br/>24" inv. in 1027.92 SW<br/>24" inv. out 1026.84 NE</p> <p>3 storm manhole<br/>top 1037.39<br/>15" inv. in 1034.37 NW<br/>18" inv. out 1033.99 SE</p> |
|---|--|

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*Loren W. Knighting* 1/16/2015



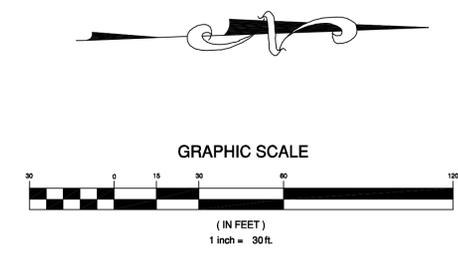
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**EXISTING CONDITIONS**  
**TREVINO CIRCLE/MONTEREY ROAD**  
**CHANNEL IMPROVEMENTS**  
 ROANOKE, VIRGINIA

<b>REVISIONS</b>	
DESIGNED BY:	MBJ
DRAWN BY:	MBJ
CHECKED BY:	CAH
SCALE:	1" = 30'
DATE:	01/16/2015
PROJECT NUMBER:	B13179B-02
<b>C102</b>	



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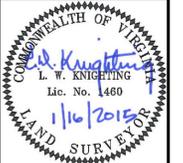
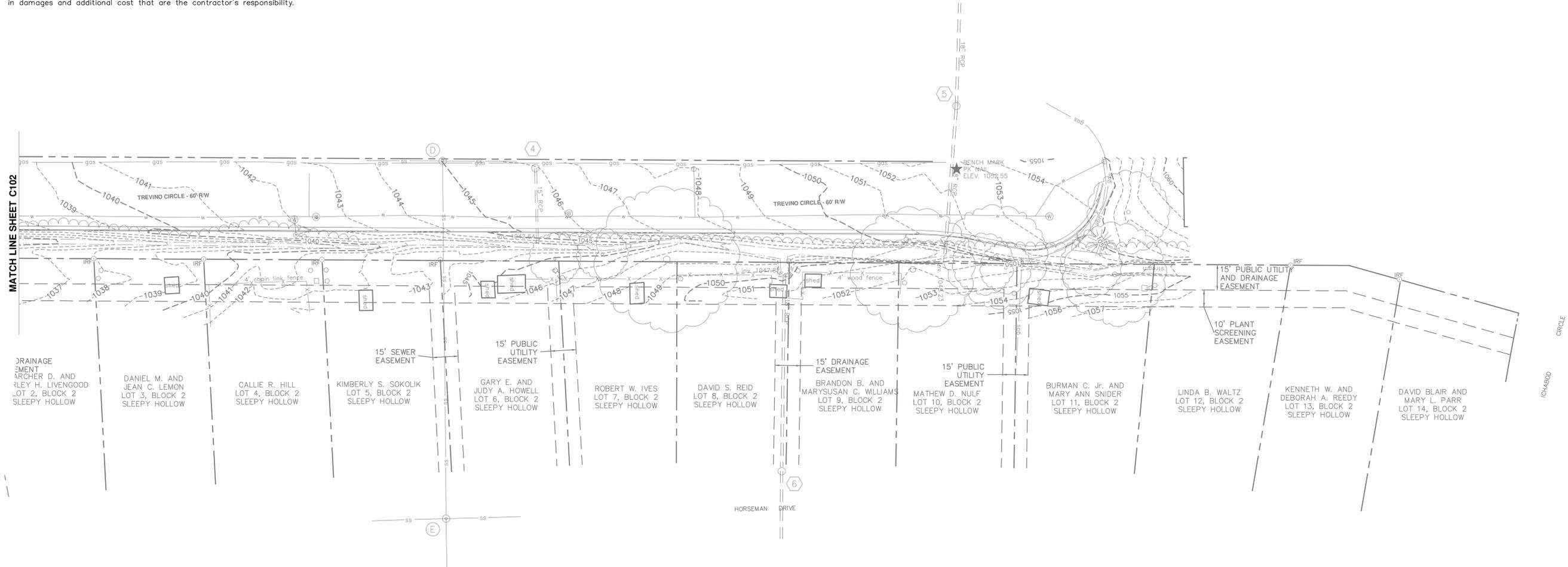
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- |  |  |
|--|--|
| <p>(D) sanitary manhole<br/>top 1044.97<br/>inv. in 1035.22 NE<br/>inv. in 1035.27 SE<br/>inv. out 1035.14 SW</p> <p>(E) sanitary manhole<br/>top 1048.00<br/>inv. in 1036.35 NE<br/>inv. in 1036.34 SE<br/>inv. in 1036.35 SW<br/>inv. out 1036.25 NW</p> | <p>(4) storm manhole<br/>top 1045.92<br/>15" inv. out 1043.32 E</p> <p>(5) storm manhole<br/>top 1057.38<br/>18" inv. in 1048.55 NW<br/>18" inv. out 1048.46 SE</p> <p>(6) storm manhole<br/>top 1054.40</p> |
|--|--|

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*Loren W. Knighting* 1/16/2015

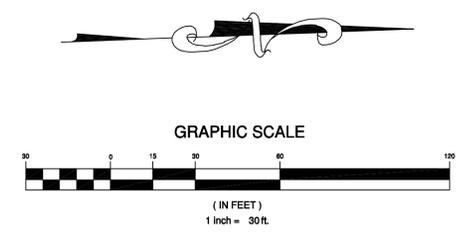


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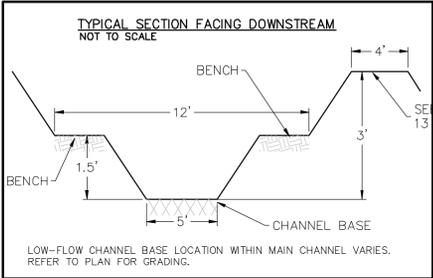
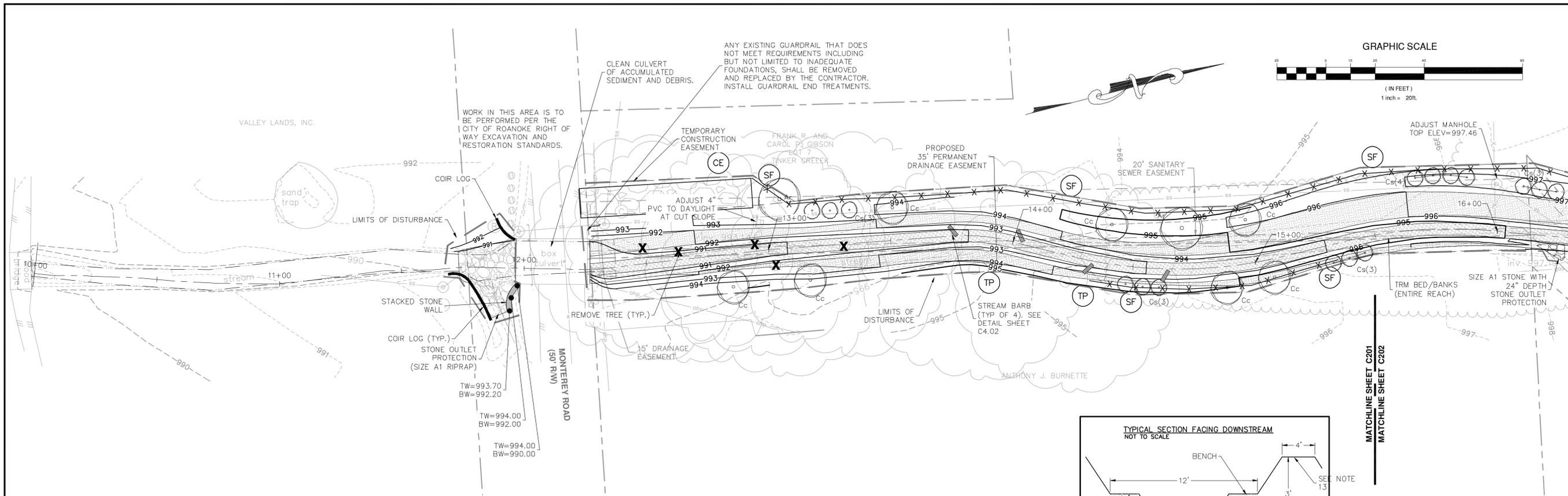
Richmond, VA  
 Charlottesville, VA  
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EXISTING CONDITIONS  
**TREVINO CIRCLE/MONTEREY ROAD  
 CHANNEL IMPROVEMENTS**  
 ROANOKE, VIRGINIA

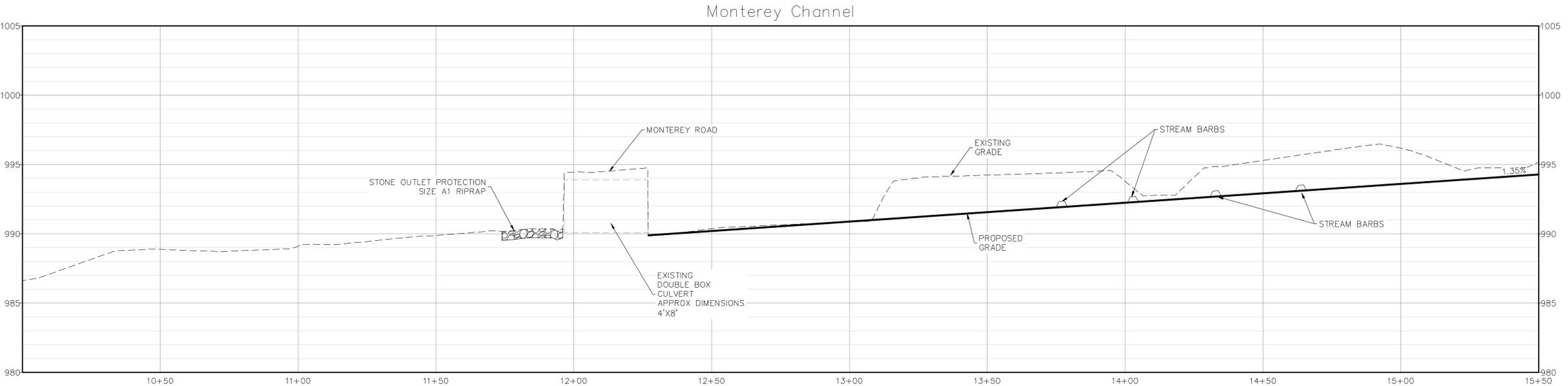
<b>REVISIONS</b>
DESIGNED BY: MBJ
DRAWN BY: MBJ
CHECKED BY: CAH
SCALE: 1" = 30'
DATE: 01/16/2015
PROJECT NUMBER: B13179B-02
<b>C103</b>



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**LEGEND**  
 CHANNEL BASE  
 BENCH  
 REFER TO C401 & C402 FOR CHANNEL & BENCH TREATMENTS.



**Planting List**

Sym.	Key	Qty.	Botanical Name	Common Name	Size/Condition	Seasonal Color/Flowering Color/Notes
	Ar	4	<i>Acer rubra</i> 'Autumn Glory'	Red Maple	2.5" Cal. B&B	Red fall color
	Cc	9	<i>Carpinus caroliniana</i> 'Named Cultivar'	Musclewood	5-6 ft B&B	
	Cs	22	<i>Cornus sericea</i> 'Cardinal'	Redosier Dogwood	3 ft B&B	

- NOTES:**
- SEE SHEET C002 FOR GENERAL NOTES AND LEGEND.
  - SEE SHEETS C301 THROUGH C305 FOR STREAM CROSS SECTIONS.
  - ALL DISTURBED AREAS AT A MINIMUM SHALL RECEIVE TOPSOILING, MULCHING, AND PERMANENT SEEDING.
  - STONE FOR STACKED STONE WALLS, CROSS VANES, OUTLET PROTECTION, AND STREAM BARB FOOTERS SHALL BE OF NATURAL CLEFT WITH A WIDTH/HEIGHT BETWEEN 8-INCHES AND 14-INCHES AND A LENGTH BETWEEN 8-INCHES AND 40-INCHES.
  - WHERE BANK GRADING, TRM, & TOE PROTECTION, SEEDING SHALL BE INSTALLED PER DETAILS AND NOTE 1 ON SHEET C401.
  - IN GENERAL, THE STREAM SHALL BE RE-GRADED WHERE SHOWN TO PROVIDE A STREAM WIDTH BETWEEN 4-10 FEET, SIDE SLOPES 2:1 OR FLATTER, AND SMOOTH TRANSITIONS TO MATCH EXISTING SURFACE. COIR LOG WALLS SHOULD BE INSTALLED AT 0.5:1 SIDE SLOPES.
  - ROCK AND GRAVEL FILL FOR CROSS VANES SHALL BE CLASS A1, COBBLED RIVER ROCK.
  - TOE PROTECTION AND STACKED COIR LOG WALLS SHALL BE A PRE-SEEDED COIR LOG; FILTREXX OR APPROVED EQUAL.
  - TRM = TURF REINFORCEMENT MATTING SHALL BE NORTH AMERICAN GREEN C350 OR APPROVED EQUAL, WITH SEEDING AS PER DETAIL ON C401.
  - UNLESS OTHERWISE SPECIFIED, COIR LOG WALLS SHALL EXTEND TO THE TOP OF SLOPE.
  - DUST CONTROL SHALL BE PROVIDED DURING LAND DISTURBANCE THROUGHOUT THE PROJECT SITE.
  - SILT FENCE SHALL BE APPLIED TO AREAS DOWNSTREAM OF UPSLOPE LAND DISTURBANCE AS INDICATED ON THE PLAN.
  - CONTRACTOR SHALL NOTIFY THE ENGINEER IF FIELD CONDITIONS INDICATE THAT THE TOP OF THE BERM IS HIGHER THAN THE OPPOSITE BANK, TO ENSURE POSITIVE DRAINAGE AWAY FROM EXISTING STRUCTURES.

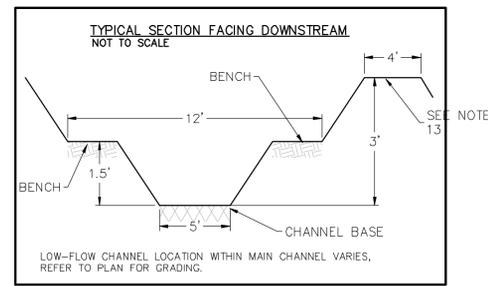
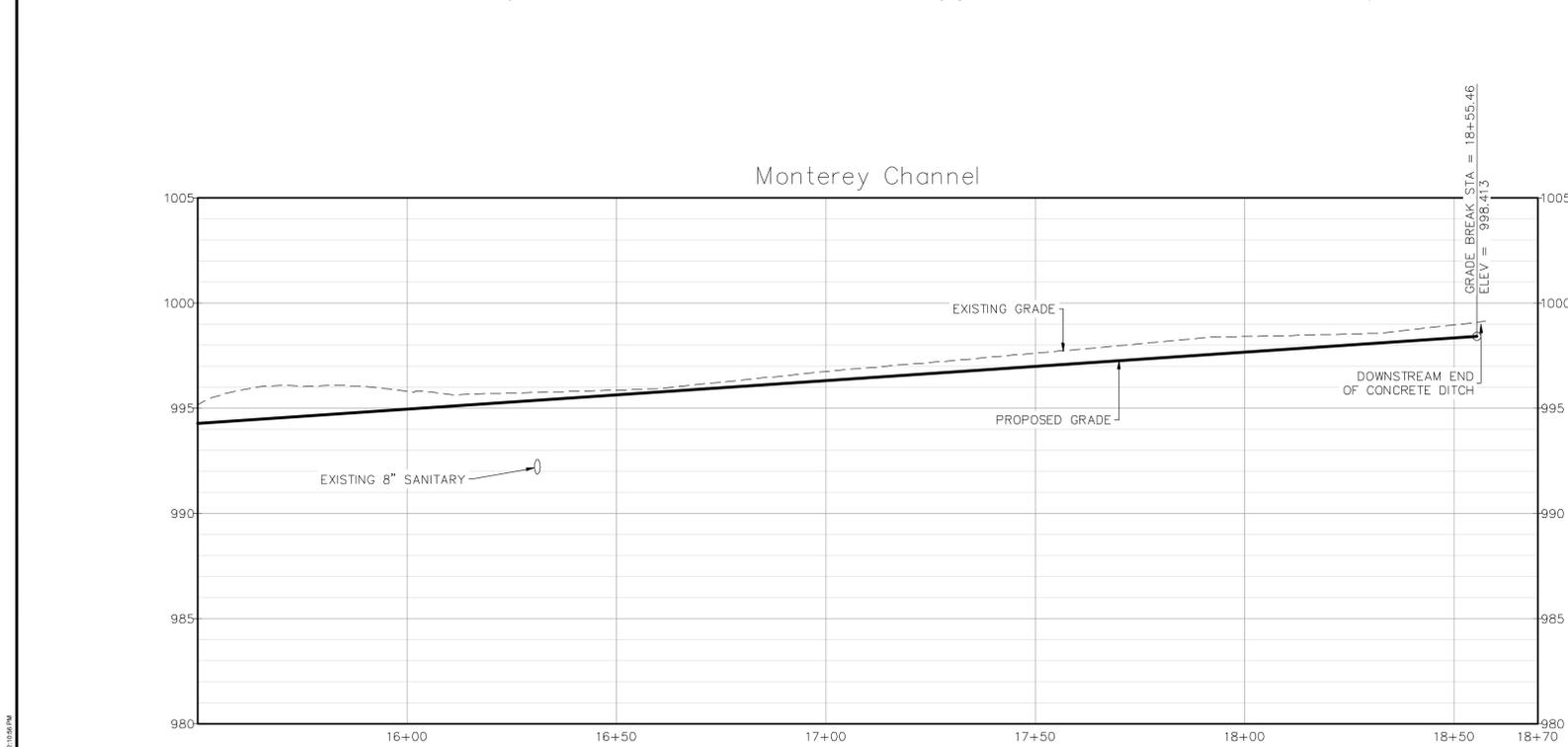
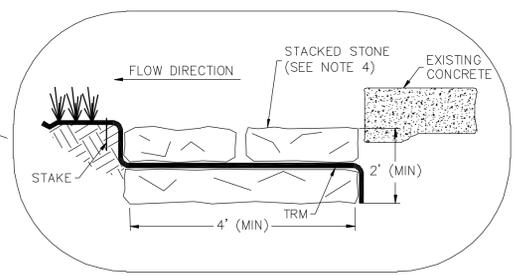
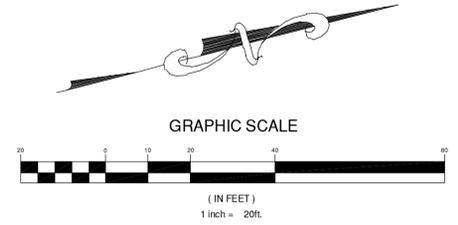
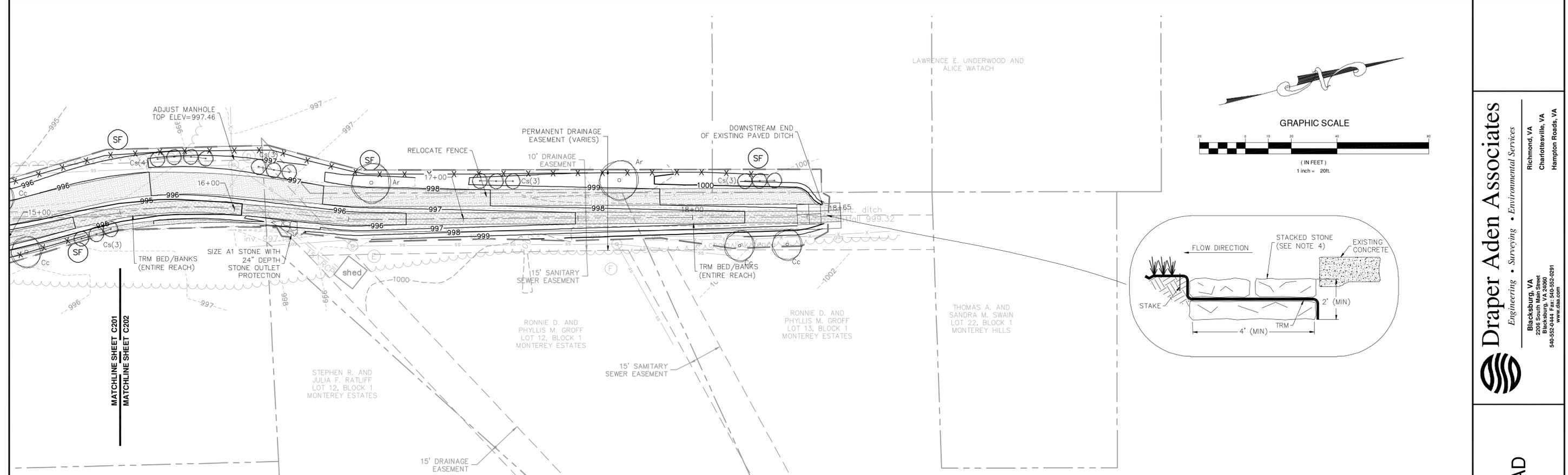
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**SITE & GRADING PLAN**  
**TREVINO CIRCLE/MONTEREY ROAD**  
**CHANNEL IMPROVEMENTS**  
 ROANOKE, VIRGINIA

**REVISIONS**

DESIGNED BY:	MBJ
DRAWN BY:	MBJ
CHECKED BY:	CAH
SCALE:	1"=20'
DATE:	03/27/2015
PROJECT NUMBER:	B13179B-02
<b>C201</b>	

03/27/2015 11:01:11 AM C:\PROJECTS\B13179B-02\DWG\150321.DWG  
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**LEGEND**

CHANNEL BASE

BENCH

REFER TO C401 & C402 FOR CHANNEL & BENCH TREATMENTS.

- NOTES:**
- SEE SHEET C002 FOR GENERAL NOTES AND LEGEND.
  - SEE SHEETS C301 THROUGH C305 FOR STREAM CROSS SECTIONS.
  - ALL DISTURBED AREAS AT A MINIMUM SHALL RECEIVE TOPSOILING, MULCHING, AND PERMANENT SEEDING.
  - STONE FOR STACKED STONE WALLS, CROSS VANES, OUTLET PROTECTION, AND STREAM BARB FOOTERS SHALL BE OF NATURAL CLEFT WITH A WIDTH/HEIGHT BETWEEN 8-INCHES AND 14-INCHES AND A LENGTH BETWEEN 8-INCHES AND 40-INCHES.
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  - TRM = TURF REINFORCEMENT MATTING SHALL BE NORTH AMERICAN GREEN C350 OR APPROVED EQUAL, WITH SEEDING AS PER DETAIL ON C401.
  - UNLESS OTHERWISE SPECIFIED, COIR LOG WALLS SHALL EXTEND TO THE TOP OF SLOPE.
  - DUST CONTROL SHALL BE PROVIDED DURING LAND DISTURBANCE THROUGHOUT THE PROJECT SITE.
  - SILT FENCE SHALL BE APPLIED TO AREAS DOWNSTREAM OF UPSLOPE LAND DISTURBANCE AS INDICATED ON THE PLAN.
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**SITE & GRADING PLAN**  
**TREVINO CIRCLE/MONTEREY ROAD**  
**CHANNEL IMPROVEMENTS**  
 ROANOKE, VIRGINIA

REVISIONS	
DESIGNED BY:	MBJ
DRAWN BY:	MBJ
CHECKED BY:	CAH
SCALE:	1"=20'
DATE:	03/27/2015
PROJECT NUMBER:	B13179B-02
<b>C202</b>	

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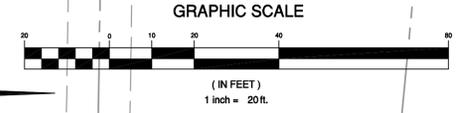
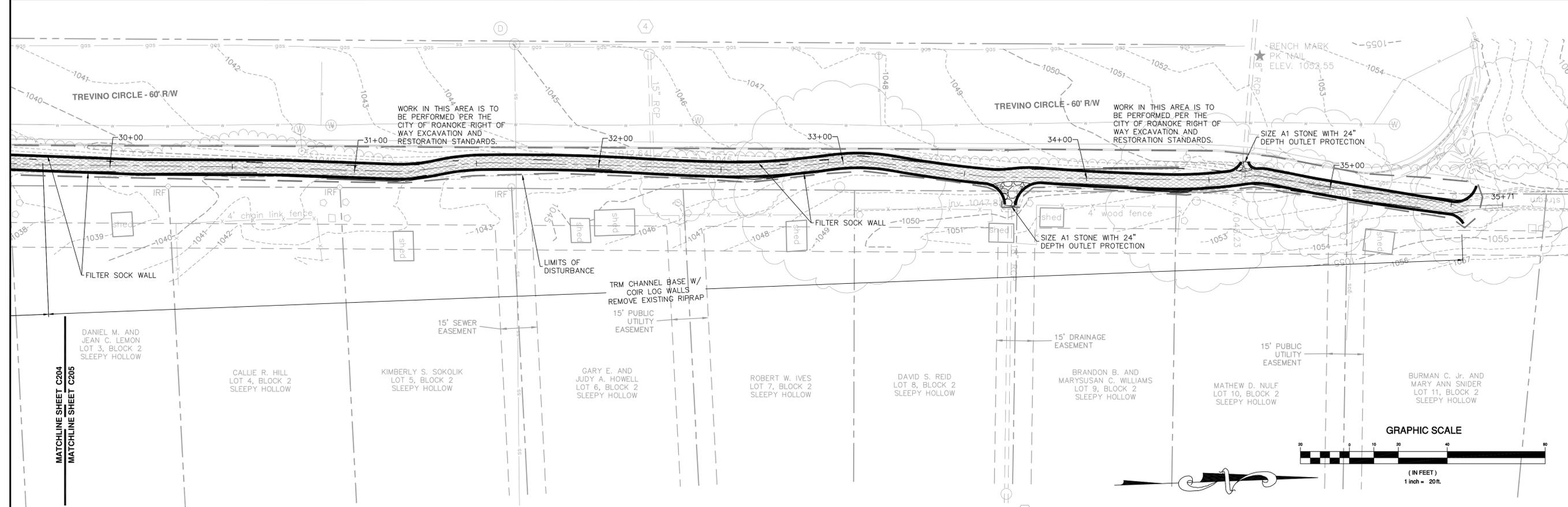




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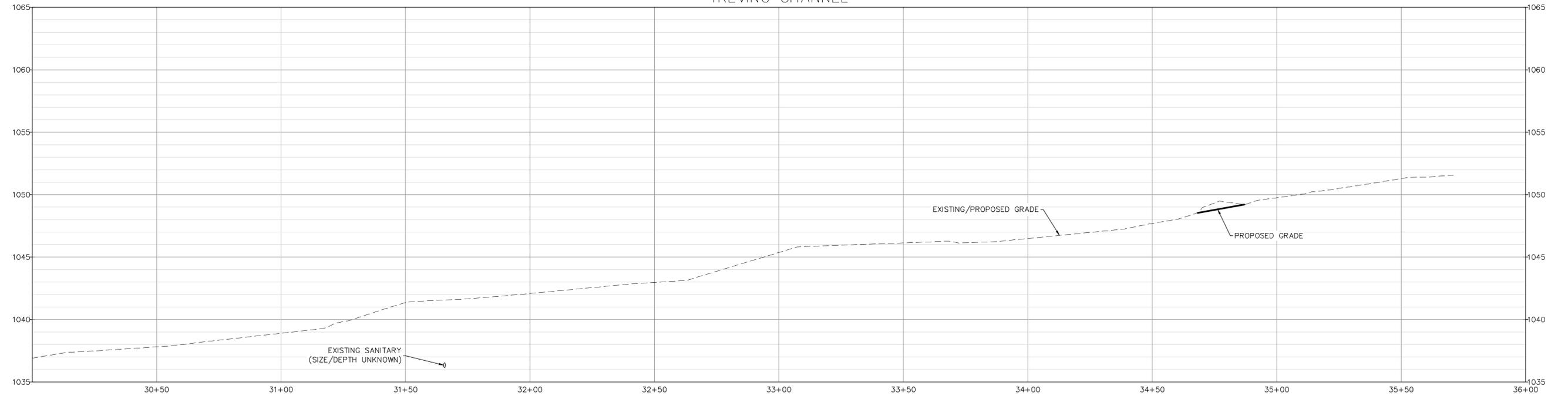
**SITE & GRADING PLAN**  
**TREVINO CIRCLE/MONTEREY ROAD**  
**CHANNEL IMPROVEMENTS**  
 ROANOKE, VIRGINIA

REVISIONS	
DESIGNED BY:	MBJ
DRAWN BY:	MBJ
CHECKED BY:	CAH
SCALE:	1"=20'
DATE:	03/27/2015
PROJECT NUMBER:	B13179B-02
<b>C205</b>	



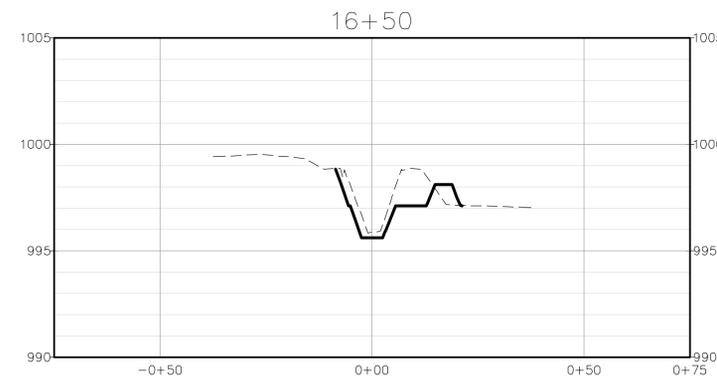
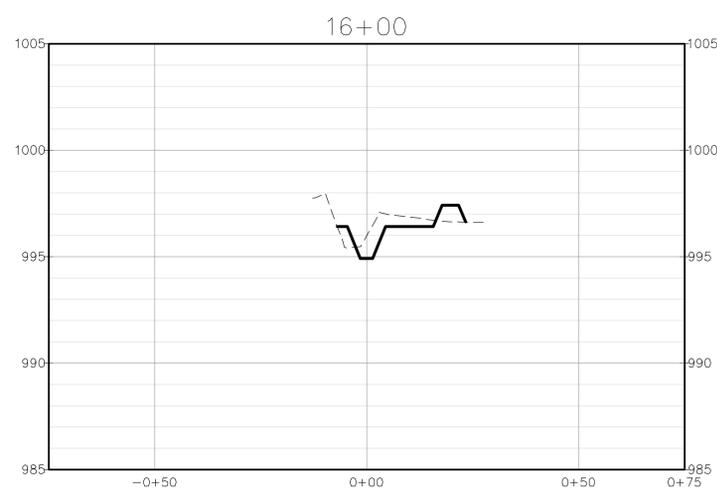
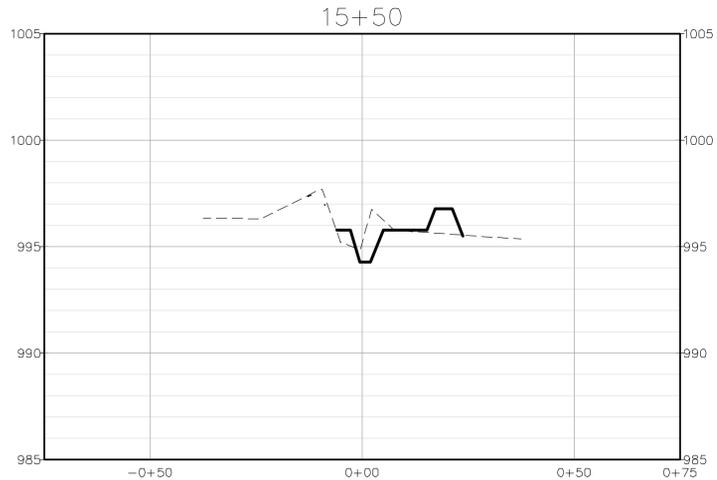
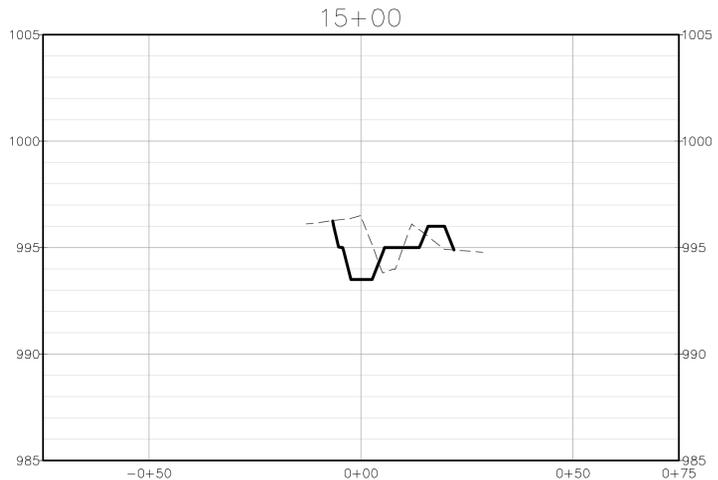
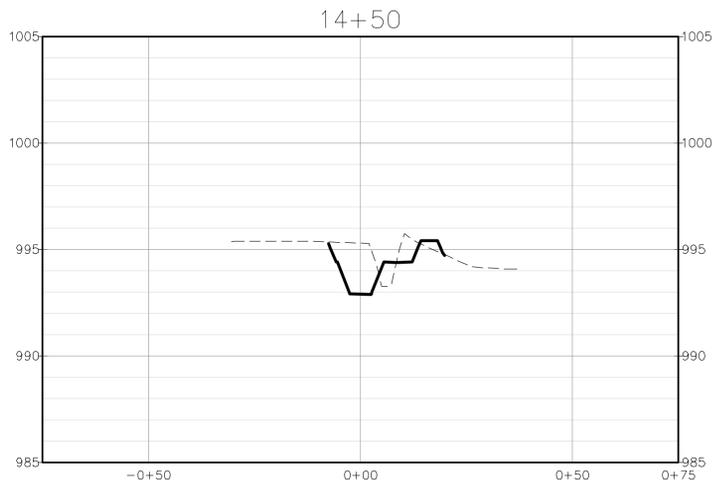
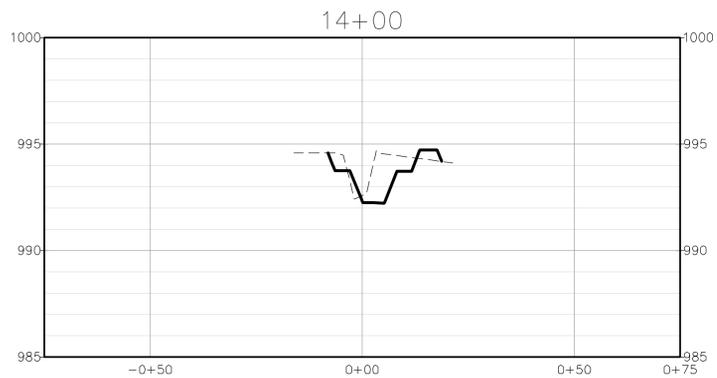
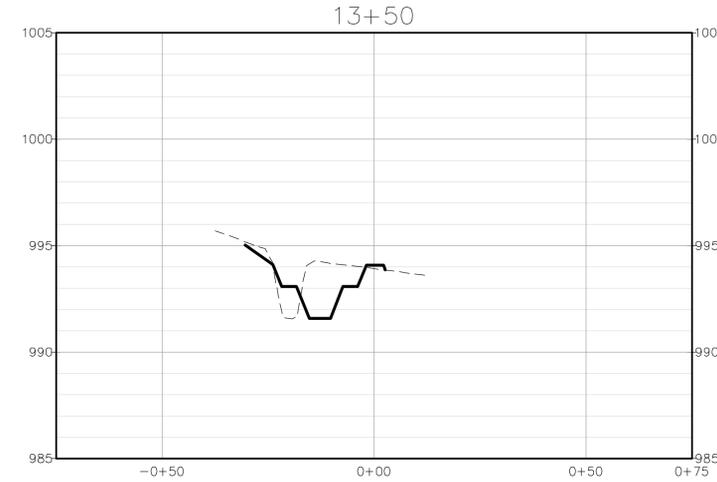
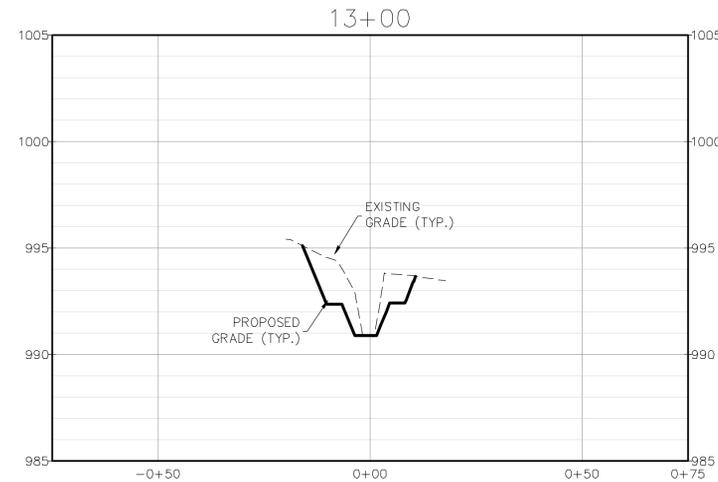
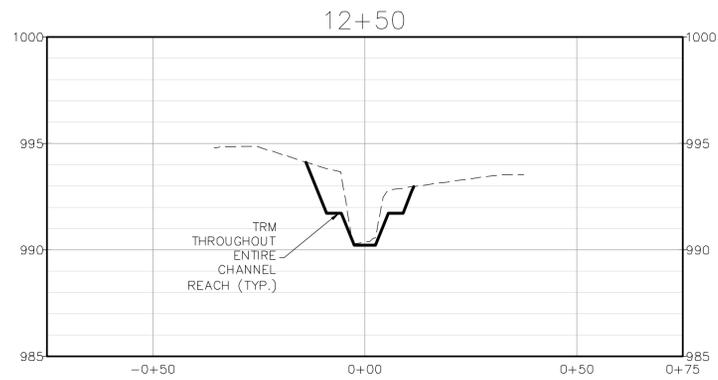
**LEGEND**  
 CHANNEL BASE  
 REFER TO C401 & C402 FOR CHANNEL & BENCH TREATMENTS.

**TREVINO CHANNEL**



- NOTES:**
- SEE SHEET C002 FOR GENERAL NOTES AND LEGEND.
  - SEE SHEETS C301 THROUGH C305 FOR STREAM CROSS SECTIONS.
  - ALL DISTURBED AREAS AT A MINIMUM SHALL RECEIVE TOPSOILING, MULCHING, AND PERMANENT SEEDING.
  - STONE FOR STACKED STONE WALLS, CROSS VANES, OUTLET PROTECTION, AND STREAM BARB FOOTERS SHALL BE OF NATURAL CLEFT WITH A WIDTH/HEIGHT BETWEEN 8-INCHES AND 14-INCHES AND A LENGTH BETWEEN 8-INCHES AND 40-INCHES.
  - WHERE BANK GRADING, TRM, & TOE PROTECTION, SEEDING SHALL BE INSTALLED PER DETAILS AND NOTE 1 ON SHEET C401.
  - IN GENERAL, THE STREAM SHALL BE RE-GRADED WHERE SHOWN TO PROVIDE A STREAM WIDTH BETWEEN 4-10 FEET, SIDE SLOPES 2:1 OR FLATTER, AND SMOOTH TRANSITIONS TO MATCH EXISTING SURFACE. COIR LOG WALLS SHOULD BE INSTALLED AT 0.5:1 SIDE SLOPES.
  - ROCK AND GRAVEL FILL FOR CROSS VANES SHALL BE CLASS A1, COBBLED RIVER ROCK.
  - TOE PROTECTION AND STACKED COIR LOG WALLS SHALL BE A PRE-SEEDED COIR LOG; FILTREXX OR APPROVED EQUAL.
  - TRM = TURF REINFORCEMENT MATTING SHALL BE NORTH AMERICAN GREEN C350 OR APPROVED EQUAL, WITH SEEDING AS PER DETAIL ON C401.
  - UNLESS OTHERWISE SPECIFIED, COIR LOG WALLS SHALL EXTEND TO THE TOP OF SLOPE.
  - DUST CONTROL SHALL BE PROVIDED DURING LAND DISTURBANCE THROUGHOUT THE PROJECT SITE.
  - SILT FENCE SHALL BE APPLIED TO AREAS DOWNSTREAM OF UPSLOPE LAND DISTURBANCE AS INDICATED ON THE PLAN.

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 PLOT: 130201.dwg



- NOTES:
- REFER TO SHEET C002 FOR GENERAL NOTES AND LEGEND.
  - ALL CROSS SECTION SCALES 1"=20' H, 1"=4' V.
  - ALL CROSS SECTIONS FACE DOWNSTREAM.
  - COIR LOGS SHOWN SCHEMATICALLY. CONSTRUCT PER MANUFACTURER'S RECOMMENDATIONS.

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 Hampton Roads, VA

MONTEREY RD. CROSS SECTIONS  
 TREVINO CIRCLE/MONTEREY ROAD  
 CHANNEL IMPROVEMENTS  
 ROANOKE, VIRGINIA

**REVISIONS**

NO.	DESCRIPTION

DESIGNED BY:	MBJ
DRAWN BY:	MBJ
CHECKED BY:	CAH
SCALE:	1" = 20'
DATE:	03/27/2015
PROJECT NUMBER:	B13179B-02

**C301**

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 Charlottesville, VA  
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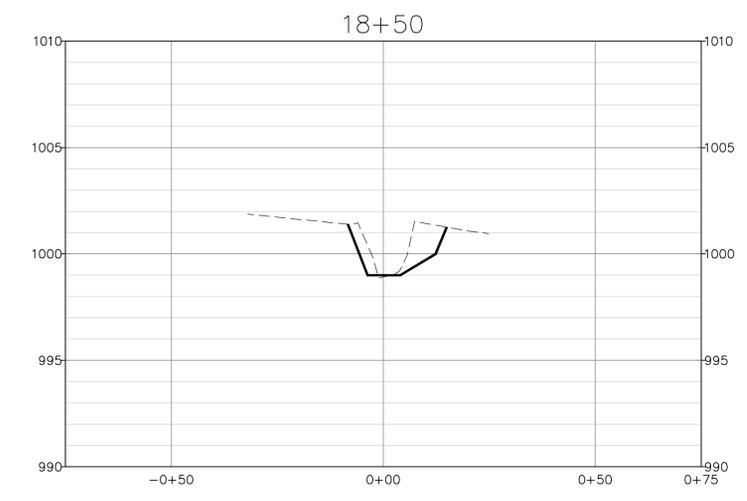
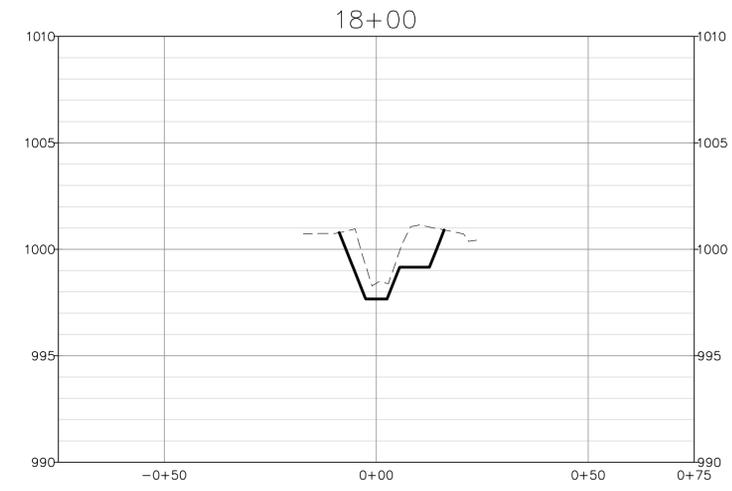
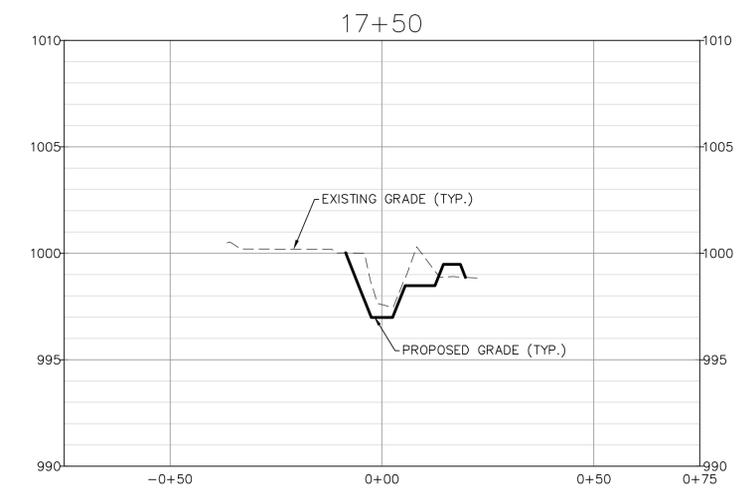
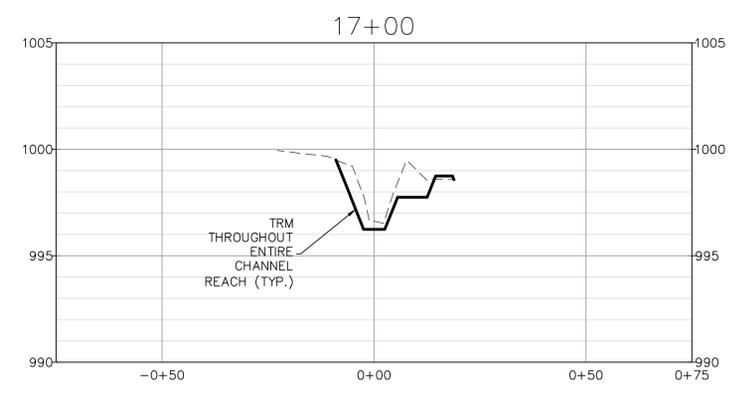
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MONTEREY RD. CROSS-SECTIONS  
 TREVINO CIRCLE/MONTEREY ROAD  
 CHANNEL IMPROVEMENTS  
 ROANOKE, VIRGINIA

REVISIONS

DESIGNED BY:	MBJ
DRAWN BY:	MBJ
CHECKED BY:	CAH
SCALE:	1" = 20'
DATE:	03/27/2015
PROJECT NUMBER:	B13179B-02

**C302**



- NOTES:**
- REFER TO SHEET C002 FOR GENERAL NOTES AND LEGEND.
  - ALL CROSS SECTION SCALES 1"=20' H, 1"=4' V.
  - ALL CROSS SECTIONS FACE DOWNSTREAM.



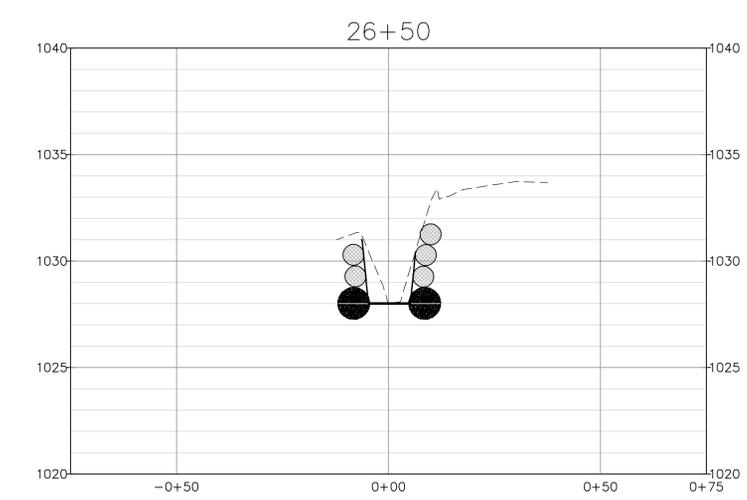
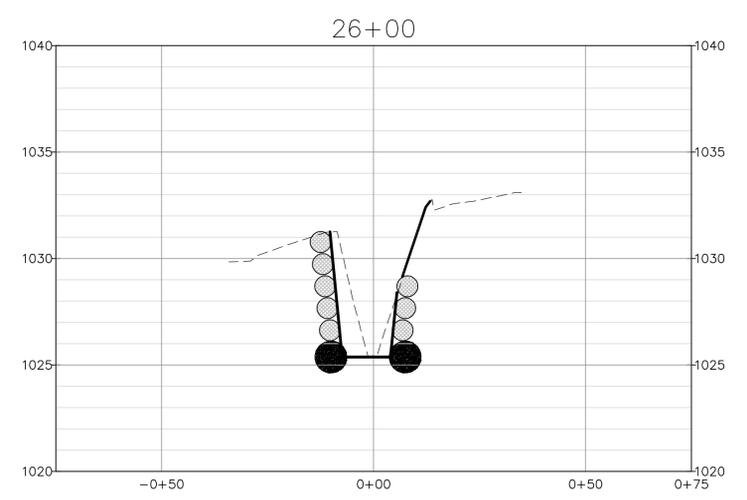
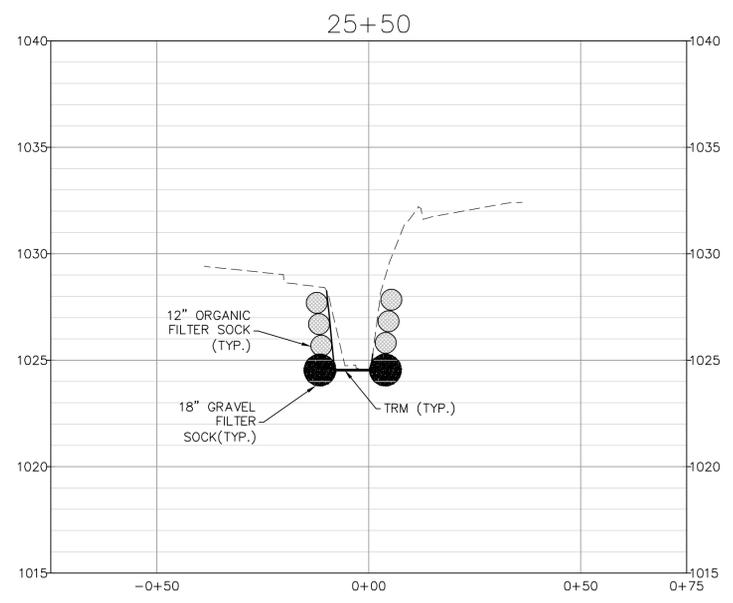
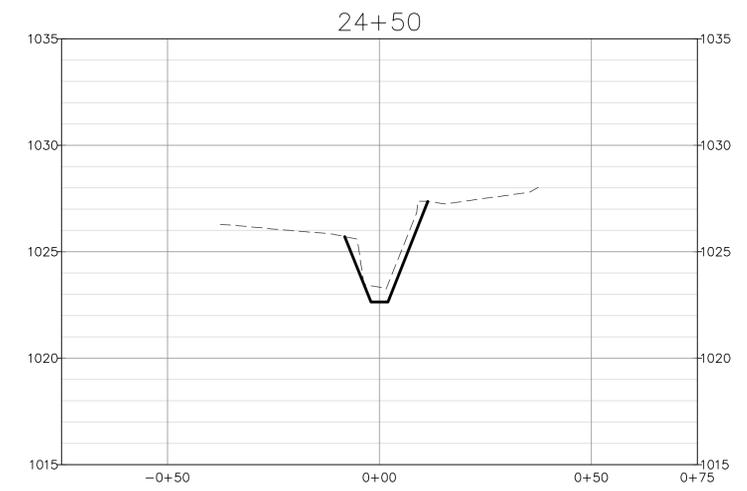
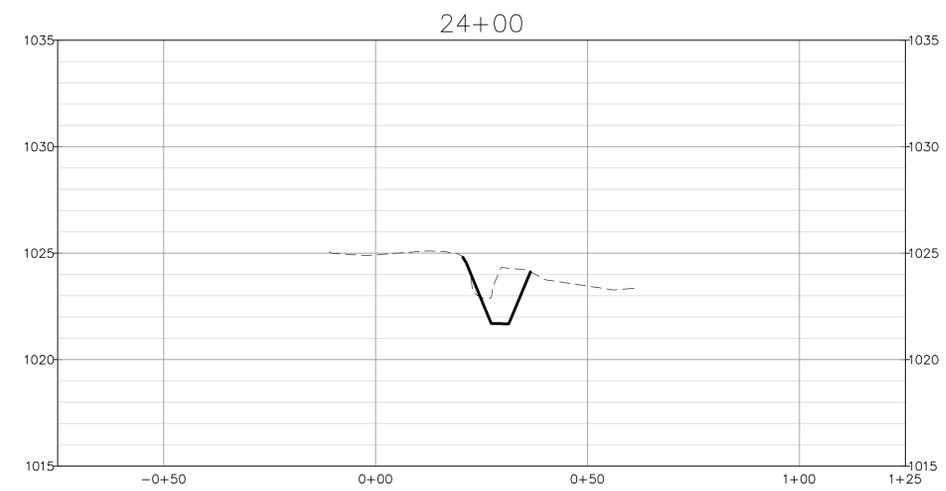
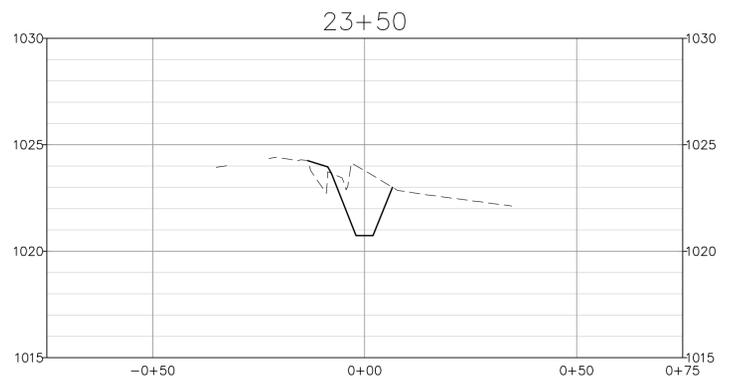
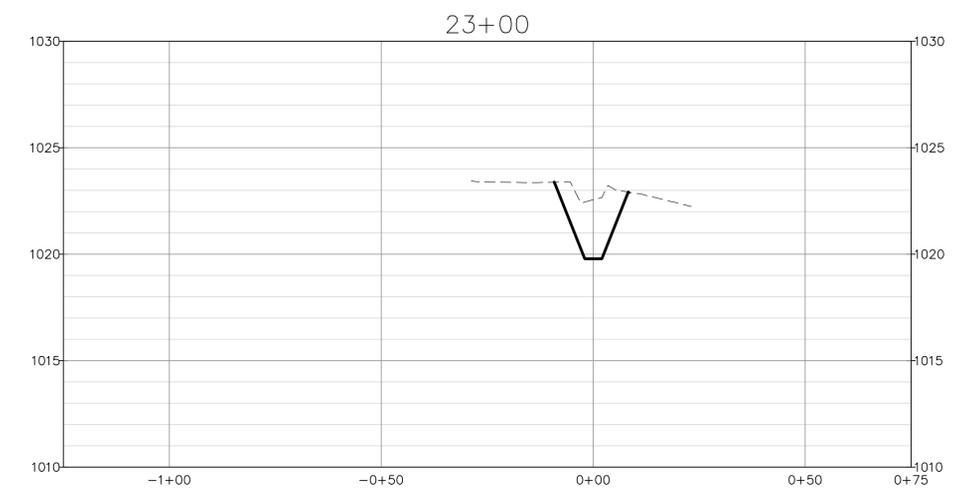
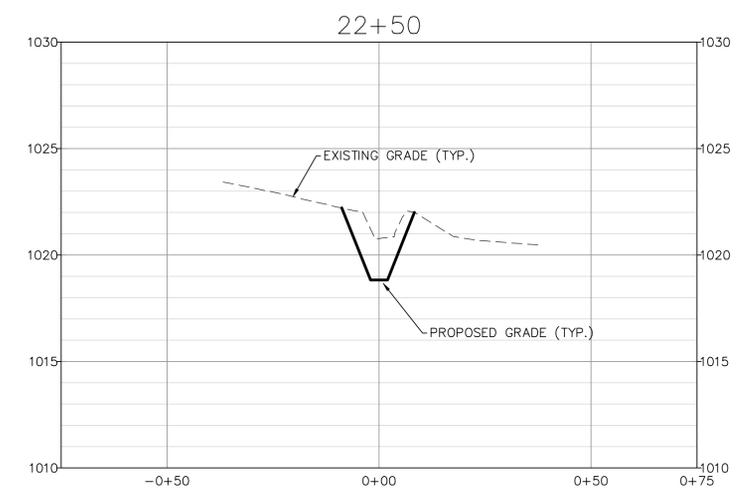
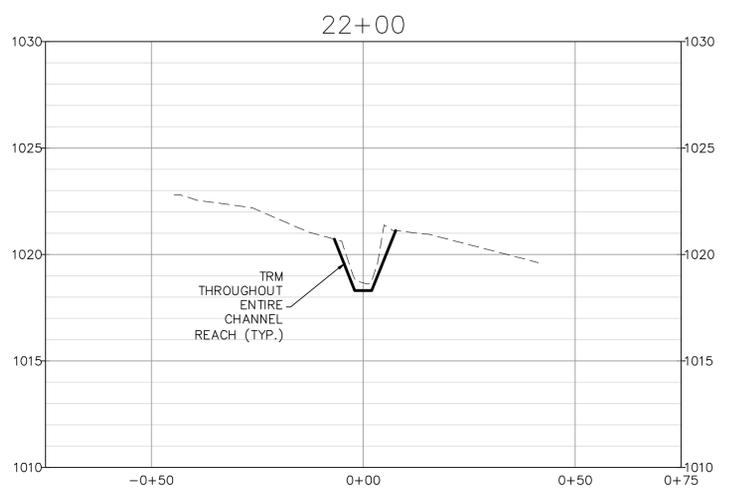
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**TREVINO CR. CROSS SECTIONS  
 TREVINO CIRCLE/MONTEREY ROAD  
 CHANNEL IMPROVEMENTS**  
 ROANOKE, VIRGINIA

REVISIONS

DESIGNED BY: MBJ  
 DRAWN BY: MBJ  
 CHECKED BY: CAH  
 SCALE: 1" = 20'  
 DATE: 03/27/2015  
 PROJECT NUMBER: B13179B-02

**C303**



- NOTES:**
- REFER TO SHEET C002 FOR GENERAL NOTES AND LEGEND.
  - ALL CROSS SECTION SCALES 1"=20' H, 1"=4' V.
  - ALL CROSS SECTIONS FACE DOWNSTREAM.
  - FILTER SOCK WALLS SHOWN SCHEMATICALLY. CONSTRUCT PER MANUFACTURER'S RECOMMENDATIONS.

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 2206 South Main Street  
 Blacksburg, VA 24060  
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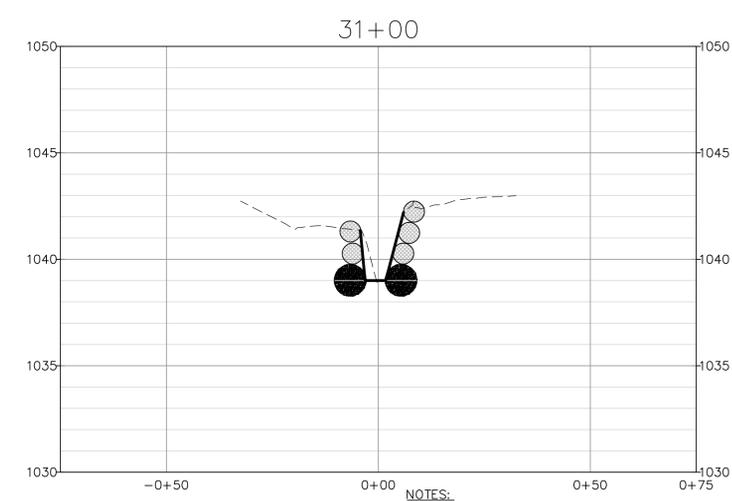
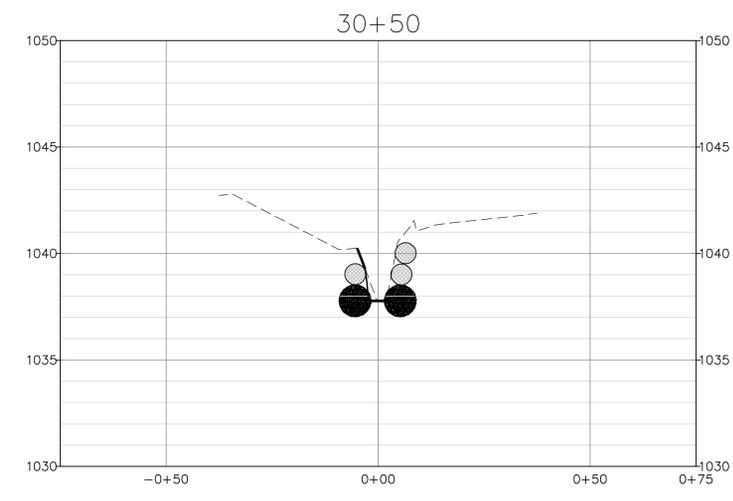
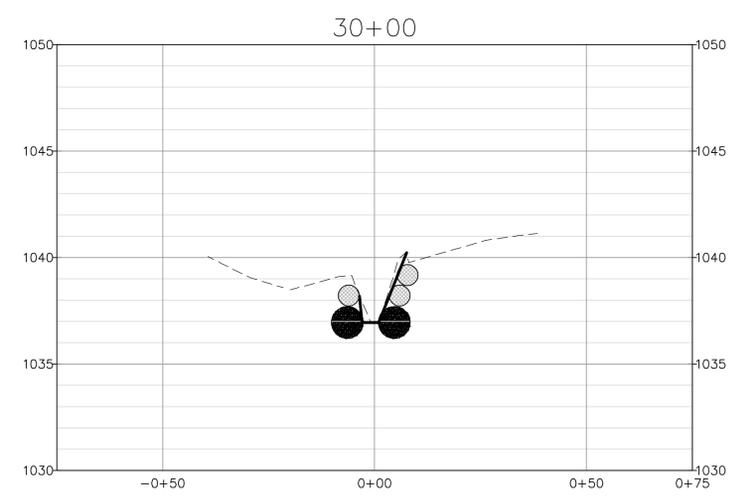
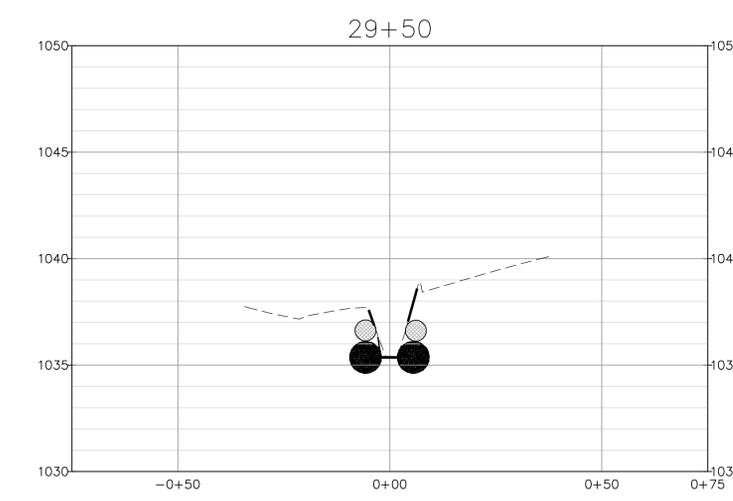
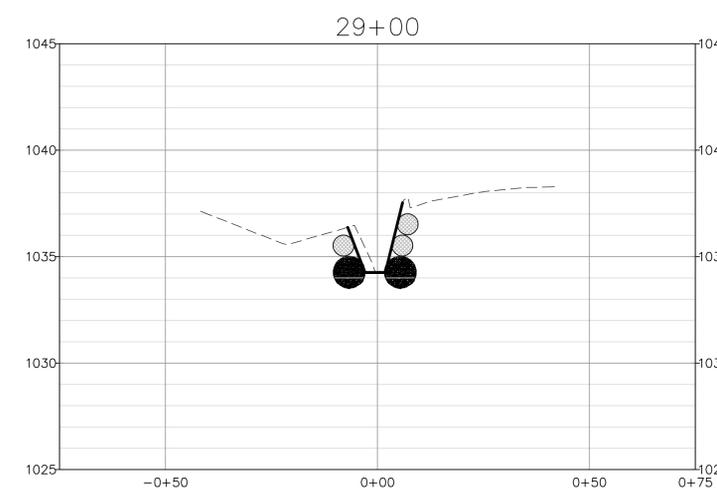
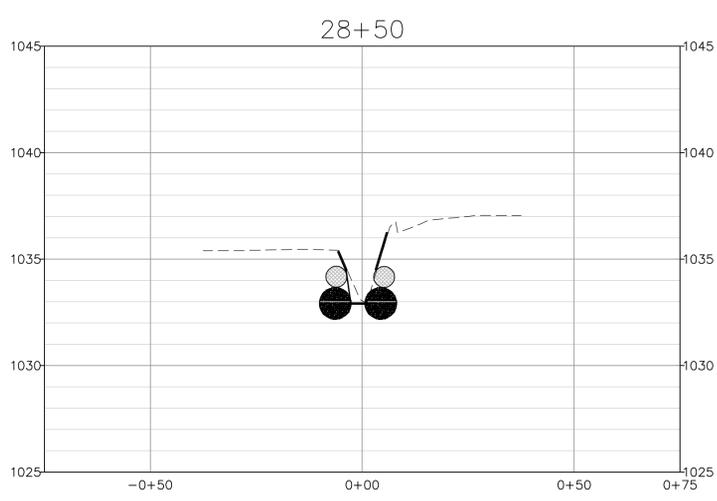
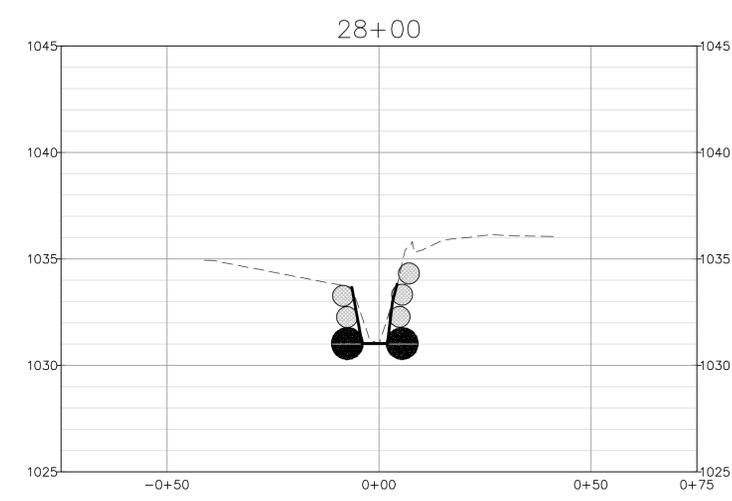
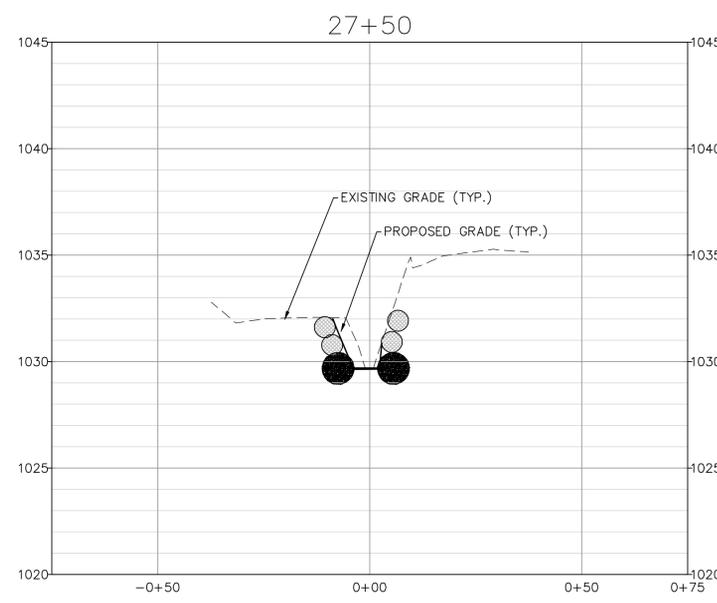
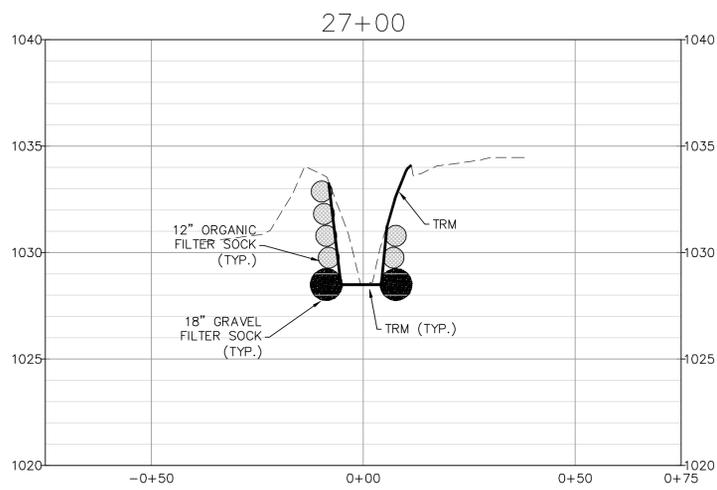
Richmond, VA  
 Charlottesville, VA  
 Hampton Roads, VA

TREVINO CR. CROSS SECTIONS  
 TREVINO CIRCLE/MONTEREY ROAD  
 CHANNEL IMPROVEMENTS  
 ROANOKE, VIRGINIA

REVISIONS

DESIGNED BY: MBJ  
 DRAWN BY: MBJ  
 CHECKED BY: CAH  
 SCALE: 1" = 20'  
 DATE: 03/27/2015  
 PROJECT NUMBER: B13179B-02

**C304**



- NOTES:
- REFER TO SHEET C002 FOR GENERAL NOTES AND LEGEND.
  - ALL CROSS SECTION SCALES 1"=20' H, 1"=4' V.
  - ALL CROSS SECTIONS FACE DOWNSTREAM.
  - FILTER SOCK WALLS SHOWN SCHEMATICALLY. CONSTRUCT PER MANUFACTURER'S RECOMMENDATIONS.

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 Blacksburg, VA 24060  
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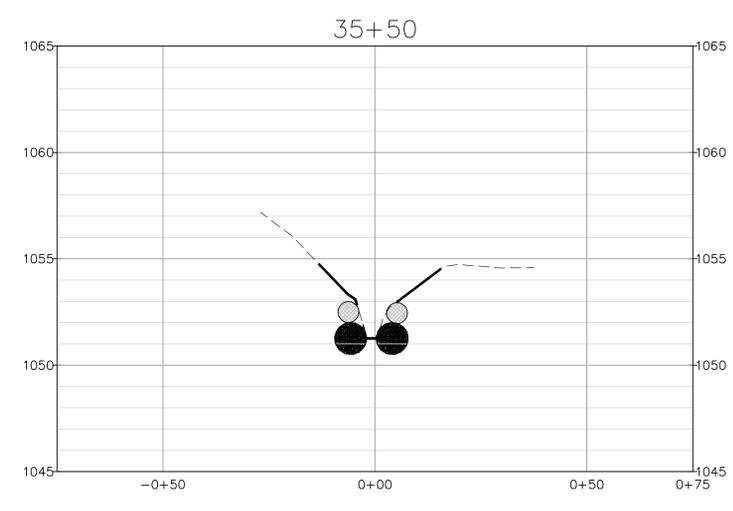
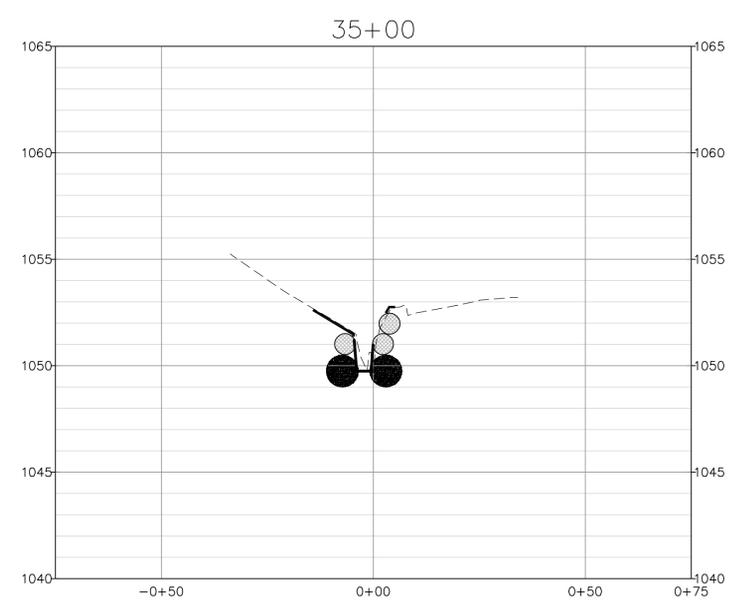
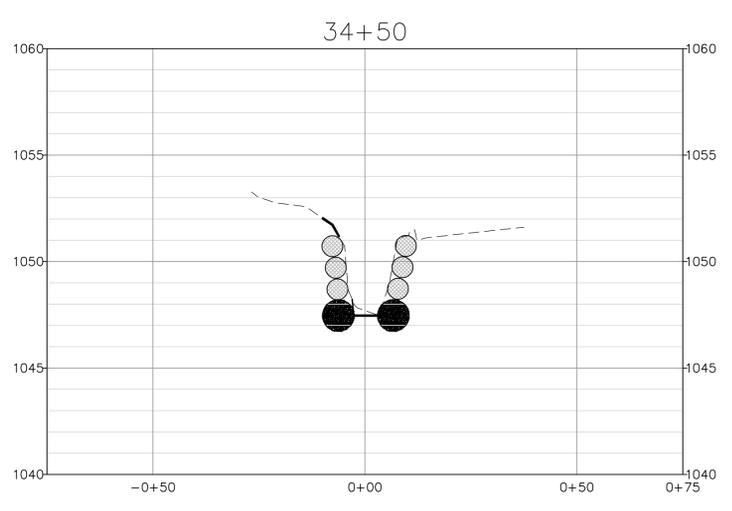
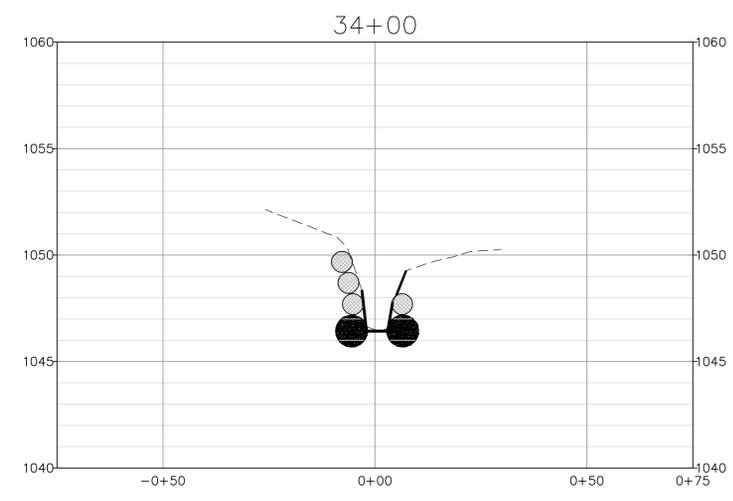
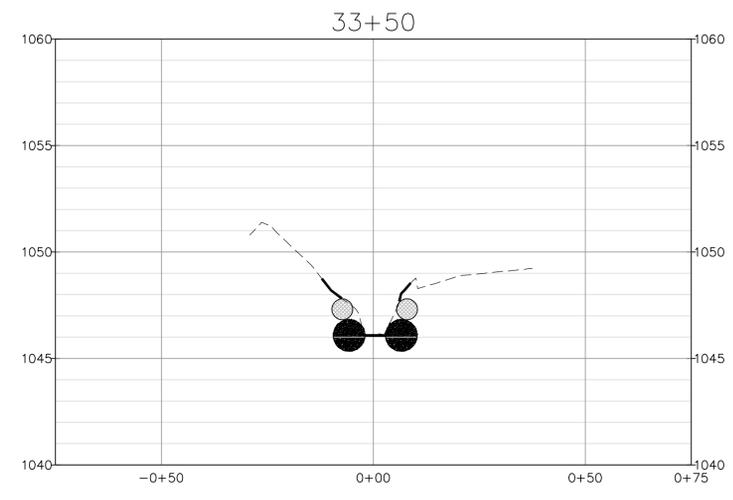
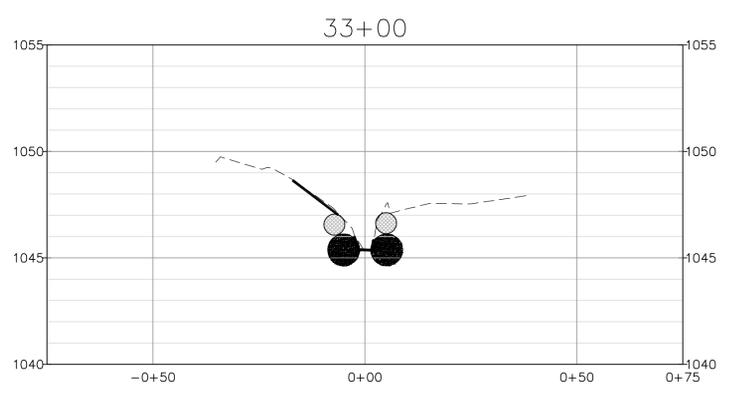
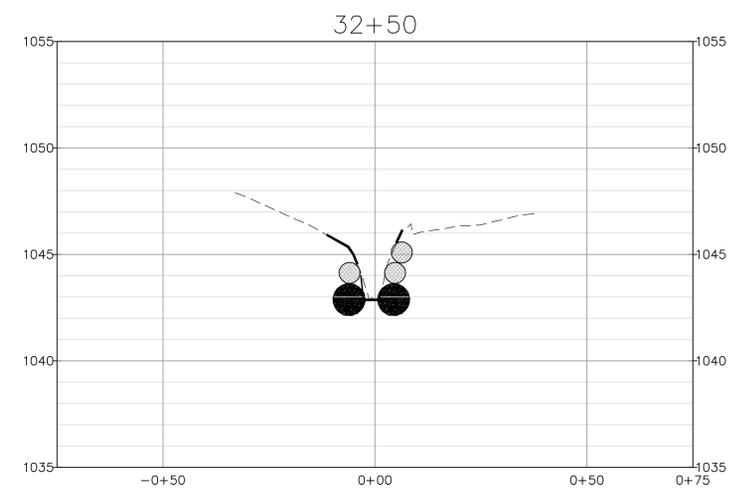
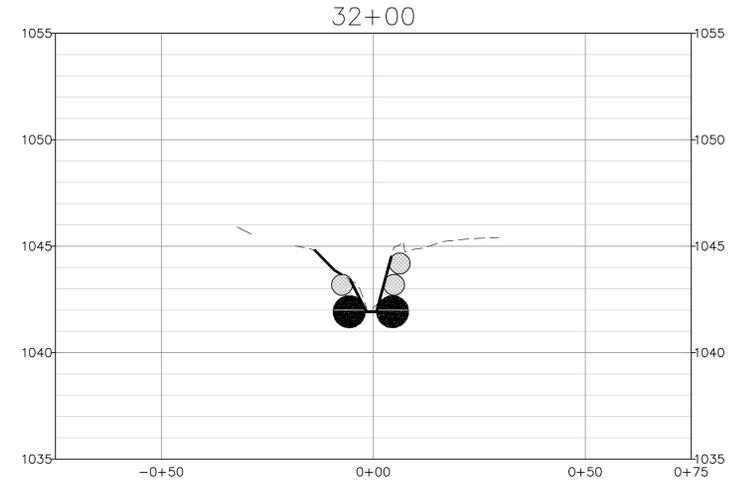
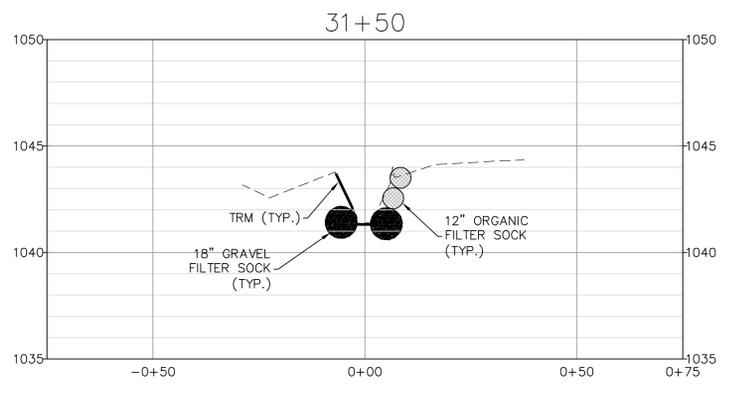


TREVINO CR. CROSS SECTIONS  
 TREVINO CIRCLE/MONTEREY ROAD  
 CHANNEL IMPROVEMENTS  
 ROANOKE, VIRGINIA

REVISIONS

DESIGNED BY:	MBJ
DRAWN BY:	MBJ
CHECKED BY:	CAH
SCALE:	1" = 20'
DATE:	03/27/2015
PROJECT NUMBER:	B13179B-02

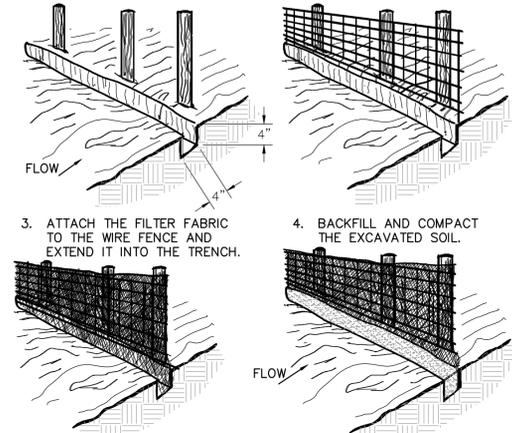
**C305**



- NOTES:**
- REFER TO SHEET C002 FOR GENERAL NOTES AND LEGEND.
  - ALL CROSS SECTION SCALES 1"=20' H, 1"=4' V.
  - ALL CROSS SECTIONS FACE DOWNSTREAM.
  - FILTER SOCK WALLS SHOWN SCHEMATICALLY. CONSTRUCT PER MANUFACTURER'S SPECIFICATIONS.

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1. SET POSTS AND EXCAVATE A 4" X 4" TRENCH UPSLOPE ALONG THE LINE OF POSTS.
2. STAPLE WIRE FENCING TO THE POSTS.



CONSTRUCTION OF A SILT FENCE (WITH WIRE SUPPORT)

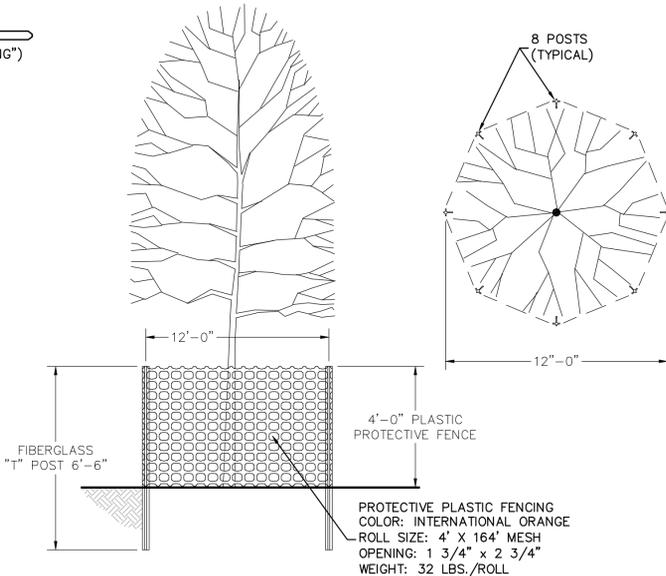
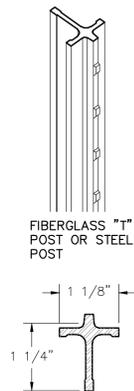


EXTENSION OF FABRIC AND WIRE INTO TRENCH

SILT FENCE INSTALLATION DETAIL

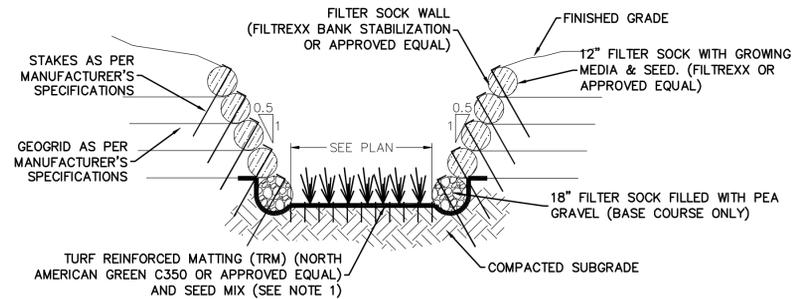
NO SCALE

PLASTIC TIES (BLACK, 6" LONG")



TREE PROTECTION DETAIL - PLASTIC FENCING

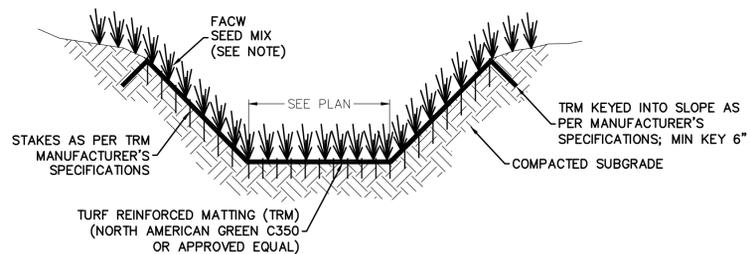
NOT TO SCALE



NOTE: CONTRACTOR TO PROVIDE SUBMITTAL OF PRODUCT/SYSTEM FOR APPROVAL.

TYPICAL CROSS SECTION - FILTER SOCK WALLS

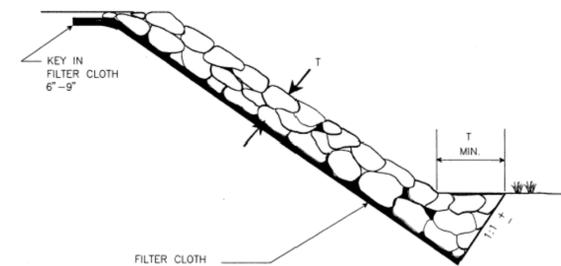
NO SCALE



- NOTES:
1. USE VA SOUTHERN BLUE RIDGE RIPARIAN SEED MIX (# ERNMX-842) AT A RATE OF 20 LB/AC OR APPROVED EQUAL.
  2. CONTRACTOR RESPONSIBLE FOR ESTABLISHING A GOOD STAND OF GRASS, AS PER EROSION AND SEDIMENT CONTROL REQUIREMENTS

TYPICAL CROSS SECTION - TURF REINFORCED MATTING (TRM)

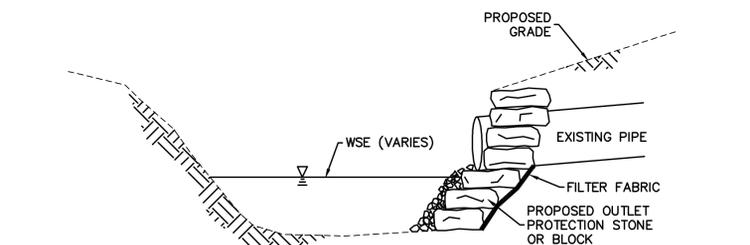
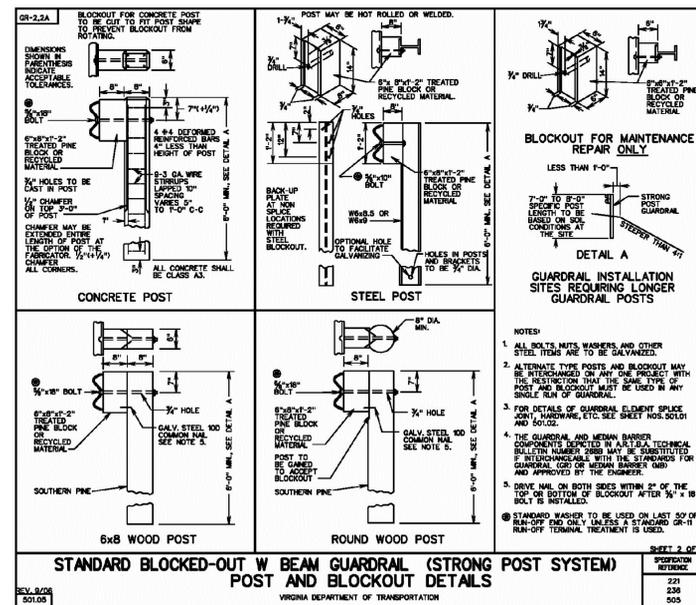
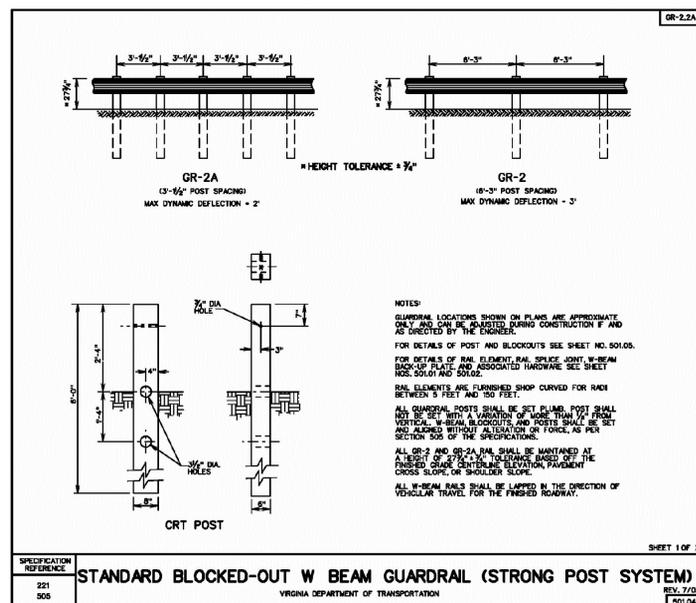
NO SCALE



NOTE: USE CLASS A1 RIPRAP; MINIMUM 'T' = 24"

RIPRAP DETAIL

NO SCALE



- NOTES:
1. STONE FOR STACKED STONE WALLS, CROSS VANES, AND OUTLET PROTECTION SHALL BE OF NATURAL CLEFT WITH A WIDTH/HEIGHT BETWEEN 8-INCHES AND 14-INCHES AND A LENGTH BETWEEN 8-INCHES AND 40-INCHES.
  2. OUTLET PROTECTION STONE SHALL HAVE A DIAMETER = 0.5 FEET (MIN.) WITH TYPE AND COLOR TO MATCH STACKED STONE WALL AS APPROVED BY THE OWNER.

STONE OUTLET PROTECTION

NO SCALE



**Draper Aden Associates**  
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 Blacksburg, VA  
 2206 South Main Street  
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 www.daa.com



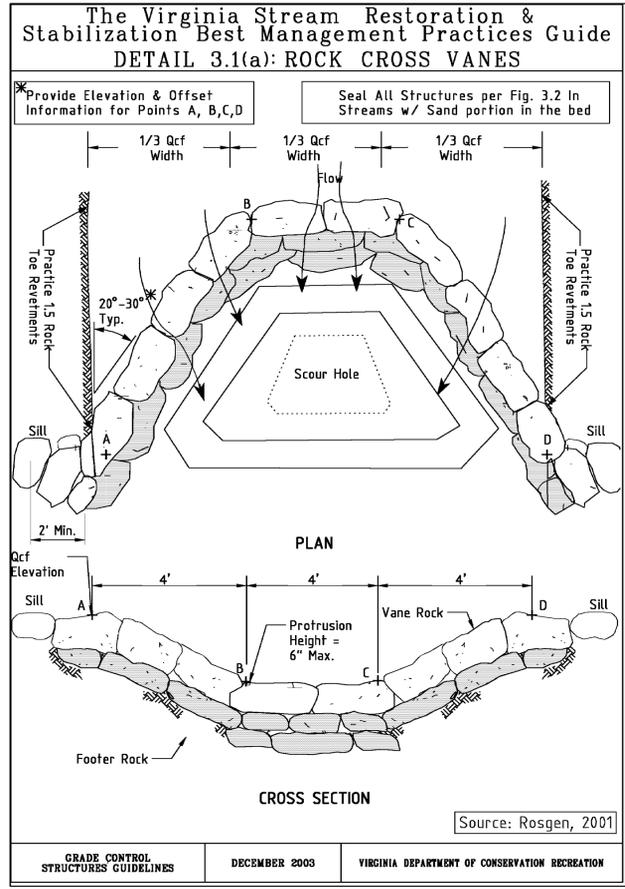
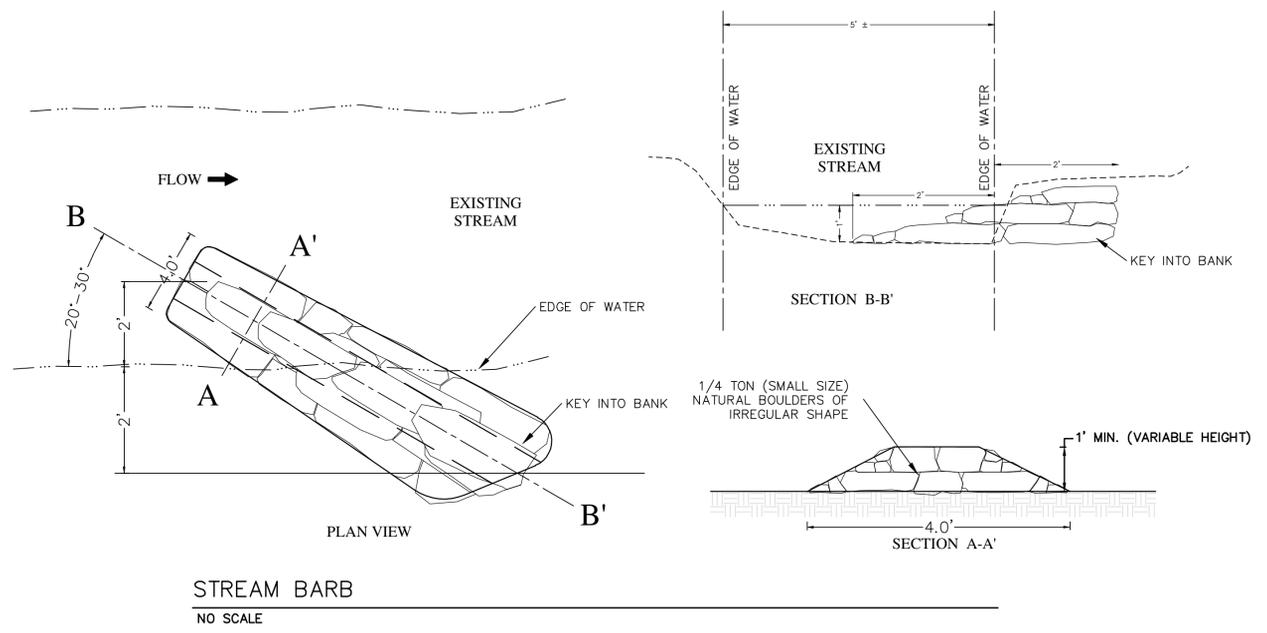
DETAILS  
**TREVINO CIRCLE/MONTEREY ROAD**  
**CHANNEL IMPROVEMENTS**  
 ROANOKE, VIRGINIA

REVISIONS	
DESIGNED BY:	MBJ
DRAWN BY:	MBJ
CHECKED BY:	CAH
SCALE:	NTS
DATE:	03/27/2015
PROJECT NUMBER:	B13179B-02
<b>C401</b>	



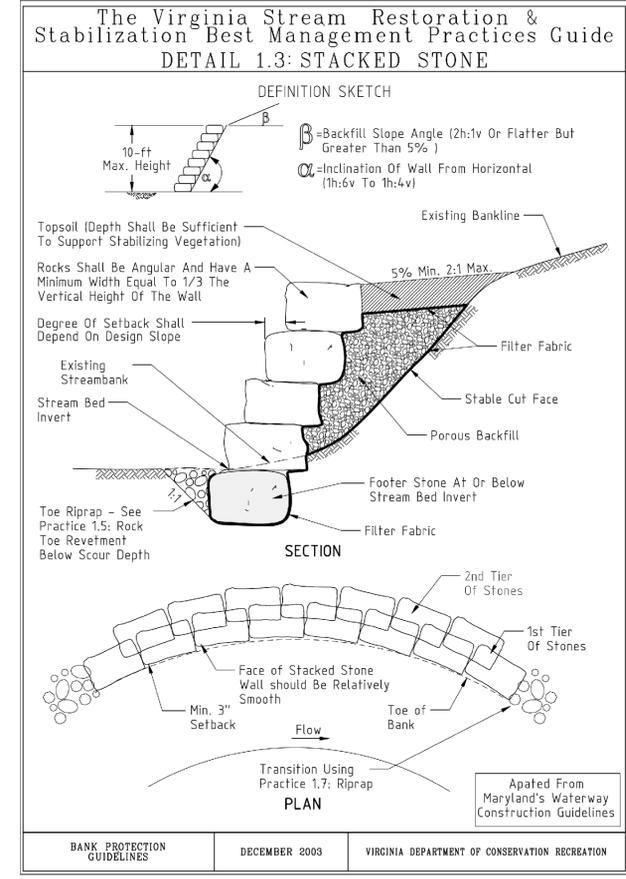
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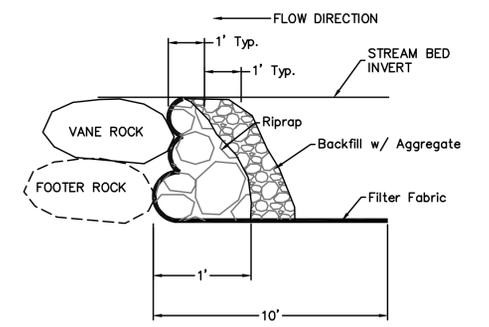
LOCATION	ELEVATION	ELEVATIONS RELATIVE TO UPSTREAM STREAM INVERT
A	+2	
B	0	
C	0	
D	+2	

**ROCK CROSS VANE DETAIL**  
NO SCALE



**NOTES:**  
 1. MANUFACTURED BLOCK MAY BE ACCEPTABLE IF APPROVED BY THE ENGINEER. MANUFACTURED STONE WALLS SHALL BE DESIGNED BY OTHERS. ALL WALLS WITH A VERTICAL HEIGHT BEYOND 4 FEET SHALL BE DESIGNED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF VIRGINIA.

**STACKED STONE WALL DETAILS**  
NO SCALE



ADAPTED FROM FIGURE 3.2 IN THE VIRGINIA STREAM RESTORATION & STABILIZATION BEST MANAGEMENT PRACTICES GUIDE.

**UPSTREAM CROSS VANE SEAL**  
NO SCALE

**DETAILS**  
**TREVINO CIRCLE/MONTEREY ROAD**  
**CHANNEL IMPROVEMENTS**  
 ROANOKE, VIRGINIA

REVISIONS

DESIGNED BY: MBJ  
 DRAWN BY: MBJ  
 CHECKED BY: CAH  
 SCALE: NTS  
 DATE: 03/27/2015  
 PROJECT NUMBER: B13179B-02

**C402**

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