

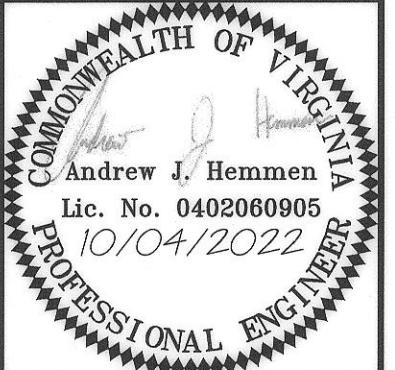
# SITE DEVELOPMENT PLAN

## PATRICK HENRY BUS STOP

1201 PATRICK HENRY DRIVE NW  
MONTGOMERY COUNTY, TOWN OF BLACKSBURG, VIRGINIA

TOWN APPROVAL STP22-0014

TOWN PLANNER *WJH* 6/21/23  
DATE  
ENGINEER *Kali Howard* 6/21/23  
DATE



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COVER SHEET  
**PATRICK HENRY DRIVE BUS STOP**  
PRICES FORK MAG. DISTRICT, BLACKSBURG, MONTGOMERY COUNTY, VIRGINIA

### CONTACT INFORMATION

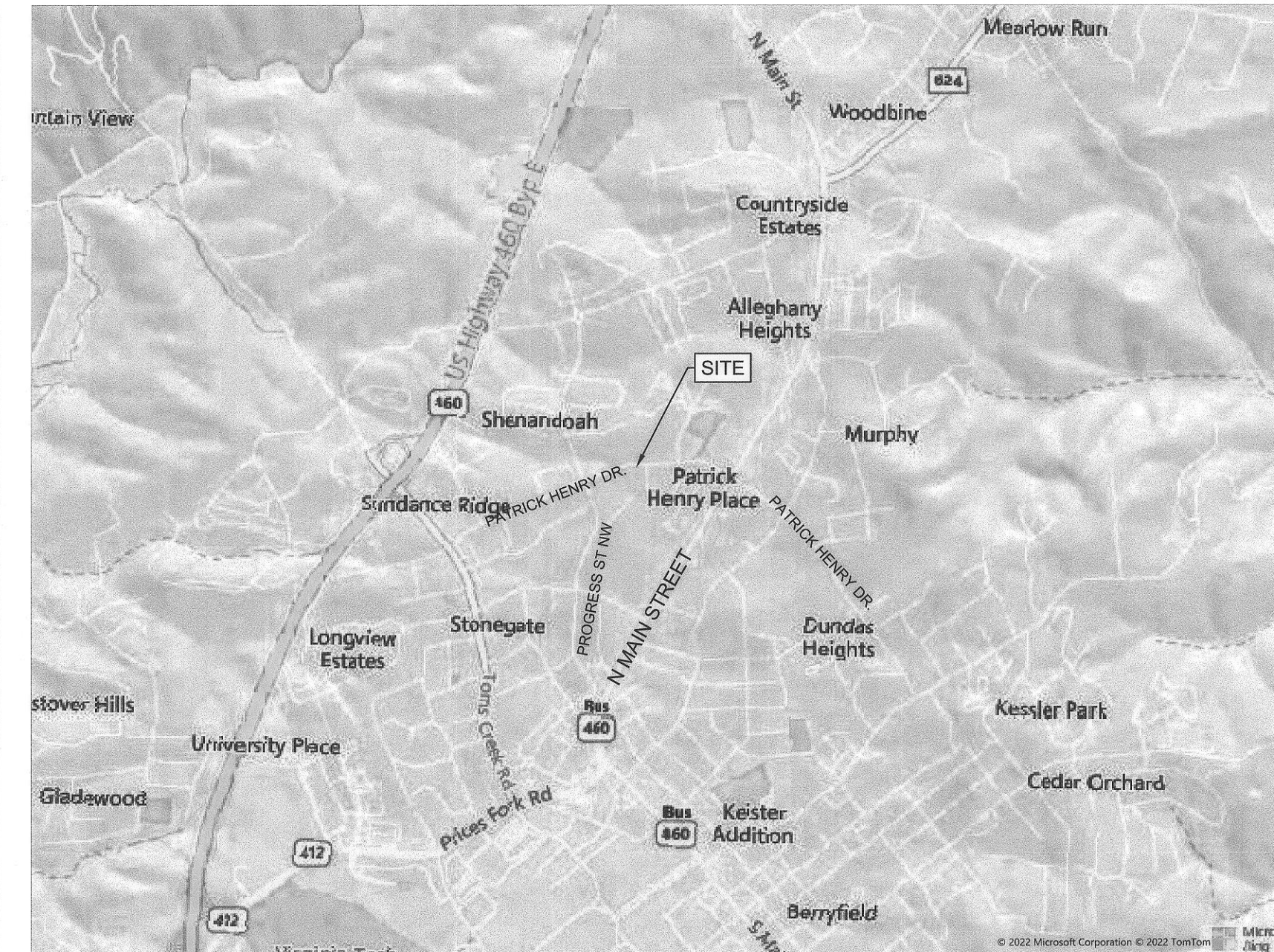
PROPERTY OWNER/DEVELOPER: BLACKSBURG TRANSIT  
CONTACT: PHIL ANDES  
SCHEDULING AND PLANNING COORDINATOR  
TELEPHONE NO: (540) 443-7100 EXT.1513  
ADDRESS: 2800 COMMERCE ST.  
BLACKSBURG, VIRGINIA 24060-6656  
ENGINEER: DRAPER ADEN ASSOCIATES  
CONTACT: ANDREW HEMMEN, PE  
TELEPHONE NO: (540) 557-1365  
EMAIL: AHEMMEN@TRCCOMPANIES.COM  
ADDRESS: 2200 SOUTH MAIN STREET  
BLACKSBURG, VA 24060

### SITE STATISTICAL INFORMATION

TAX MAP NUMBER (PRIMARY): RIGHT-OF-WAY  
PARCEL NUMBER (PRIMARY): RIGHT-OF-WAY  
PLAT & BOOK PAGE (PRIMARY): RIGHT-OF-WAY  
TAX MAP NUMBER (SECONDARY): 196-10 2  
PARCEL NUMBER (SECONDARY): 033563  
PLAT & BOOK PAGE (SECONDARY): 0016-0712  
CURRENT PARCEL ADDRESS: RIGHT-OF-WAY  
1201 PATRICK HENRY DR NW  
TOTAL PARCEL AREA: N/A (RIGHT-OF-WAY)  
AREA OF DISTURBANCE: 0.1 AC (4,360 SF)  
EXISTING IMPERVIOUS COVER: 0.04  
PROPOSED IMPERVIOUS COVER: 0.07  
FLOODPLAIN INFORMATION: FIRM PANEL 51121C0131C  
EFFECTIVE DATE: SEPTEMBER 25, 2009  
APPLICABLE ZONE: ZONE "X" OUTSIDE REGULATORY FLOODPLAIN  
ZONING DISTRICT: PR PLANNED RESIDENTIAL  
ADJACENT ZONING DISTRICT: RM-48 MEDIUM DENSITY MULTIUNIT RESIDENTIAL  
PRESENT USE: BUS-STOP  
PROPOSED USE: BUS-STOP



LOCATION MAP  
SCALE: 1" = 500'



VICINITY MAP  
SCALE: 1" = 2000'

### PROJECT DESCRIPTION

THIS PROJECT WILL CONSIST OF THE CONSTRUCTION OF A NEW BUS STOP ON PATRICK HENRY DRIVE, INCLUDING PAVEMENT WIDENING, NEW SIDEWALK, AND STORM SEWER RELOCATION

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C001	COVER SHEET
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C301	SITE DIMENSIONAL PLAN
C401	GRADING, DRAINAGE AND PHASE 2 ESC PLAN
C501	EROSION & SEDIMENT CONTROL DETAILS
C502	SITE AND UTILITY DETAILS

### OWNER/DEVELOPER CERTIFICATION

THE UNDERSIGNED IS AWARE OF THE DESIGN REQUIREMENTS IMPOSED BY THE PLAN AND OTHER APPLICABLE TOWN CODES, AND AGREES TO COMPLY WITH THESE REQUIREMENTS, UNLESS MODIFIED IN ACCORDANCE WITH THE CODE OF THE TOWN OF BLACKSBURG, VIRGINIA.

By: *M Verniel* 6/20/2023  
LEGAL ENTITY: Town of Blacksburg DATE  
ITS: Town Manager

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The Contractor will designate an employee certified as the "Responsible Land Disturber" (RLD), by the Commonwealth of Virginia, Department of Environmental Quality (VADEQ), 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 within 4-5 days when no rainfall occurs. Contractor shall provide written documentation to the Town of Blacksburg identifying the RLD prior to land disturbance.

NOTE: CONTRACTOR TO CONTACT MISS UTILITY (811) IN ADVANCE OF PLANNED WORK. ADVANCE TIME PERIOD SHALL BE IN ACCORDANCE WITH CURRENT MISS UTILITY GUIDELINES (www.missutilityofvirginia.com).

### DRAPER ADEN ASSOCIATES REVIEW

THESE PLANS HAVE BEEN SUBMITTED TO TECHNICAL AND QUALITY REVIEWS BY:

MARCUS J. RICHARDSON  
NAME: PRINTED SIGNATURE *Marcus Richardson* DATE: 10/04/2022  
PROJECT DESIGNER  
ANDREW J. HEMMEN, P.E.  
NAME: PRINTED SIGNATURE *Andrew J. Hemmen* DATE: 10/04/2022  
PROJECT MANAGER  
JAMES E. HENEGAR, JR., P.E.  
NAME: PRINTED SIGNATURE *James E. Henegar, Jr.* DATE: 10/04/2022  
QUALITY REVIEWER

### REVISIONS

DESIGNED BY: AJH  
DRAWN BY: MJR  
CHECKED BY: JEH  
SCALE: NO SCALE  
DATE: 10/04/2022  
PROJECT NUMBER: 2102060

C001



GENERAL CONSTRUCTION NOTES:

- 1. THE DESIGN OF THE DEVELOPMENT IS BASED ON EXISTING TOPOGRAPHIC FEATURES AND UTILITIES SHOWN ON A TOPOGRAPHIC SURVEY BY DRAPER ADEN ASSOCIATES DATED FEBRUARY 8, 2022. HORIZONTAL DATUM (NAD 83) AND VERTICAL DATUM (NAVD 88).
- 2. THE CONTRACTOR SHALL HAVE AN APPROVED SET OF PLANS AND PERMITS ON SITE AT ALL TIMES DURING CONSTRUCTION. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY TOWN INSPECTORS.
- 3. AS-BUILT DRAWINGS WILL BE PROVIDED TO THE TOWN BEFORE THE SITE IMPROVEMENT SECURITY IS RETURNED.
- 4. ROADWAY WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE VDOT ROAD AND BRIDGE SPECIFICATIONS.
- 5. AN EROSION AND SEDIMENT CONTROL PERMIT IS NOT REQUIRED SINCE THE LIMITS OF DISTURBANCE IS LESS THAN 5,000 SQUARE FEET. IF THE LIMITS OF DISTURBANCE EXPANDS BEYOND 5,000 SQUARE FEET AN EROSION & SEDIMENT CONTROL PERMIT AND A STORMWATER MANAGEMENT PERMIT WILL BE REQUIRED.
- 6. THE TOWN SHALL MAINTAIN RESPONSIBILITY FOR OBTAINING ANY ADDITIONAL PERMITS REQUIRED BY ANY OTHER FEDERAL OR STATE AGENCY.
- 7. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS (TOWN OF BLACKSBURG STANDARDS, SPECIFICATIONS, AND REGULATORY/ZONING REQUIREMENTS AND VDOT STANDARDS AND SPECIFICATIONS). PRIOR TO COMMENCEMENT OF WORK, NOTIFICATION TO THE TOWN OF BLACKSBURG IS REQUIRED AND THE CONTRACTOR SHALL OBTAIN ALL NECESSARY LICENSES AND PERMITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS. SIGNAGE CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REGULATIONS OF THE TOWN.
- 8. 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 TO PRECONSTRUCTION CONDITIONS BY THE CONTRACTOR AT HIS EXPENSE, IN ACCORDANCE WITH THE STATE AND LOCAL REQUIREMENTS. CONTRACTOR SHALL CONTACT MISS UTILITY AT 811, MINIMUM 3 WORKING DAYS PRIOR TO ANY EARTH MOVING ACTIVITIES.
- 9. A PRE-CONSTRUCTION MEETING WITH THE TOWN SHALL BE HELD PRIOR TO BEGINNING ANY CONSTRUCTION OR DEMOLITION.
- 10. OBTAIN ADVANCE APPROVAL FROM LOCAL AND STATE AUTHORITIES 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.
- 11. CONTACT ENGINEER IMMEDIATELY IF AN EXISTING UTILITY LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE DRAWINGS, IF THERE APPEARS TO BE A CONFLICT, AND/OR IF A UTILITY IS DISCOVERED THAT IS NOT SHOWN ON DRAWINGS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES THAT HAVE AFFECTED UNDERGROUND UTILITIES.
- 12. CONTRACTOR SHALL PROTECT EXISTING PROPERTY CORNERS. IF ANY PROPERTY CORNER IS DISTURBED BY CONSTRUCTION ACTIVITIES, CONTRACTOR SHALL RE-ESTABLISH THE PROPERTY CORNER BY A LAND SURVEYOR LICENSED IN THE COMMONWEALTH OF VIRGINIA AND ACCEPTABLE TO THE ENGINEER.
- 13. PROTECT EXISTING STRUCTURES, UTILITIES, AND EQUIPMENT FROM DAMAGE. DAMAGE OR DISTURBANCE TO STRUCTURES, UTILITIES, AND EQUIPMENT TO REMAIN SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR TO PRECONSTRUCTION CONDITIONS AT NO COST TO THE OWNER, IN ACCORDANCE WITH THE OWNER'S REPRESENTATIVE AND THE AUTHORITIES HAVING JURISDICTION.
- 14. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL ONSITE EXISTING OR NEW DITCHES, PIPES AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL OWNER ACCEPTS WORK. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURES IN OPERABLE CONDITIONS.
- 15. BARRICADE OPEN EXCAVATIONS OCCURRING AS PART OF THIS WORK AND POST WITH WARNING LIGHTS. OPERATE WARNING LIGHTS AS RECOMMENDED BY AUTHORITIES HAVING JURISDICTION.
- 16. PAVEMENT WORK WITHIN THE RIGHT-OF-WAY REQUIRES INSPECTION OF SUBGRADE PRIOR TO PLACEMENT OF BASE STONE AND BASE STONE PRIOR TO PLACEMENT OF PAVEMENT. PRIOR TO SUBGRADE APPROVAL BY THE TOWN, CBR RESULTS MUST BE PROVIDED WITH THE APPROPRIATE PAVEMENT DESIGN TO THE TOWN ENGINEER PER VDOT PAVEMENT DESIGN GUIDELINES.
- 17. ANY NEW UTILITIES TO BE MAINTAINED BY THE TOWN SHALL BE WITHIN DEDICATED RIGHTS-OF-WAY OR EASEMENTS.
- 18. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MEET COMPLIANCE REQUIREMENTS WITH SECTION 59.1-406 ET SEQ. OF THE CODE OF VIRGINIA (OVERHEAD HIGH VOLTAGE LINES SAFETY ACT).
- 19. ALL DIMENSIONS AND COORDINATES THAT ARE REQUIRED FOR CONSTRUCTION STAKEOUT MAY NOT BE SHOWN. ELECTRONIC CIVIL 3D DRAWING FILE MAY BE MADE AVAILABLE FOR CONSTRUCTION STAKEOUT.
- 20. CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF BLACKSBURG STANDARDS AND SPECIFICATIONS AND VDOT ROAD AND BRIDGE STANDARDS, LATEST EDITION UNLESS SHOWN AND SPECIFIED OTHERWISE.
- 21. UTILITIES MUST BE VISUALLY INSPECTED BY THE TOWN INSPECTOR PRIOR TO BACKFILLING TRENCHES.
- 22. IT IS THE OWNER/DEVELOPER/DESIGN ENGINEER'S RESPONSIBILITY TO COORDINATE ANY RETAINING WALL DESIGN AND CONSTRUCTION WITH THE TOWN'S BUILDING DEPARTMENT FOR ENGINEERING SEALING AND BUILDING PERMIT REQUIREMENTS. BACKFILL OF PUBLIC WATER, SEWER AND OTHER PUBLIC UTILITY TRENCHES SHALL BE IN ACCORDANCE WITH THE TOWN OF BLACKSBURG UTILITY TRENCH REPAIR STANDARD.

TRAFFIC CONTROL NOTES

THE CONTRACTOR MUST OBTAIN A TEMPORARY ROAD CLOSURE PERMIT FROM THE TOWN OF BLACKSBURG FOR ALL WORK WITHIN OR IMPACTING THE RIGHT-OF-WAY. THE PERMIT REQUEST MUST BE SUBMITTED TO THE ENGINEERING DEPARTMENT AND APPROVED PRIOR TO THE START OF SAID WORK

STATE MINIMUM STANDARDS FOR EROSION CONTROL

A VESCP 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 FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
- MS-2 DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS 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.
- 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 IS UNIFORM, MATURE ENOUGH TO SURVIVE, AND WILL INHIBIT EROSION.
- 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.
- MS-5 STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
- 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.
  - 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. 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.
- 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.
- MS-9 WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
- 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.
- 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.
- 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 COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.
- MS-13 WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.
- MS-14 ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.
- MS-15 THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
- MS-16 UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
  - A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
  - B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
  - C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
  - D. 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 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. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
- 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. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
- 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:
  - 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.
    - (2)(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
    - (2)(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 CHANNEL TO A CONDITION WHERE A TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO THE 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; OR
  - (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 DEVELOPMENT 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. 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 OUTFALL, 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. 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.

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 (VADEQ), WHO IS IN CHARGE OF AND IS RESPONSIBLE FOR CARRYING OUT THE LAND-DISTURBING ACTIVITIES ON THIS PROJECT.
- 2. INSPECTIONS SHALL BE CONDUCTED BY THE RLD AT A FREQUENCY OF AT LEAST ONCE EVERY FOUR BUSINESS DAYS OR AT LEAST ONCE EVERY FIVE BUSINESS DAYS AND NO LATER THAN 24 HOURS FOLLOWING A MEASURABLE STORM EVENT (0.25 INCHES). IN THE EVENT THAT A MEASURABLE STORM EVENT OCCURS WHEN THERE ARE MORE THAN 48 HOURS BETWEEN BUSINESS DAYS, THE INSPECTION SHALL BE CONDUCTED ON THE NEXT BUSINESS DAY.
- 3. AS FIRST STEP MEASURES, SILT FENCE, AND INLET PROTECTION SHALL BE INSTALLED AS INDICATED PRIOR TO UPSLOPE LAND DISTURBANCE. THE SITE SHALL BE INSPECTED BY TOWN OF BLACKSBURG PERSONNEL PRIOR TO LAND DISTURBANCE.
- 4. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DIVERSIONS IMMEDIATELY AFTER INSTALLATION, AS NEEDED.
- 5. THROUGHOUT CONSTRUCTION ACTIVITIES, APPLY DUST CONTROL MEASURES ACCORDING TO VESCH STD. & SPEC. 3.39.
- 6. NO AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE SHALL BE DISTURBED.
- 7. PERMANENT SEEDING AND MULCH WILL BE USED ON ALL DISTURBED AREAS THAT ARE NOT SCHEDULED TO RECEIVE CONCRETE SURFACING OR LANDSCAPING (HARDWOOD MULCH, ETC.) WITHIN SEVEN DAYS ONCE BROUGHT TO FINAL GRADE.
- 8. 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 TOWN. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

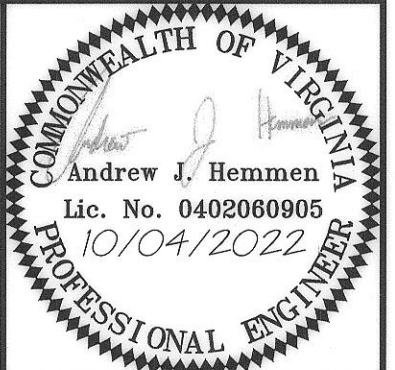
- ES-1 UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH), LATEST EDITION.
- ES-2 TOWN OF BLACKSBURG SHALL BE NOTIFIED ONE WEEK PRIOR TO THE 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.
- ES-4 THE NARRATIVE PREPARED FOR THE PLAN IS PART OF THE PLANS AND SHALL BE USED IN CONJUNCTION WITH THE PLANS. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND NARRATIVE AND THE RELEVANT VESCH SECTIONS, SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- ES-5 PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN THE 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 AND SEDIMENT CONTROL PLAN TO TOWN OF BLACKSBURG FOR REVIEW AND APPROVAL.
- ES-6 INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES AS REQUIRED TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE SITE, AND AS DETERMINED BY TOWN OF BLACKSBURG INSPECTOR.
- ES-7 ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
- ES-8 DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
- ES-9 THE CONTRACTOR IS RESPONSIBLE FOR APPOINTING DESIGNATED "RESPONSIBLE LAND DISTURBER" (RLD). THE RESPONSIBLE LAND DISTURBER SHALL BE ADDED TO THE PLAN AT THE PRE-CONSTRUCTION CONFERENCE. THE RLD SHALL BE CERTIFIED IN VIRGINIA.
- ES-10 THE RESPONSIBLE LAND DISTURBER SHALL INSPECT EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES FOR PROPER INSTALLATION AND DEFICIENCIES IMMEDIATELY AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT, AT LEAST DAILY DURING PROLONGED RAINFALL, AND BI-WEEKLY WHEN NO RAINFALL EVENTS OCCUR. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MADE IMMEDIATELY.
- ES-11 STORE EXCAVATED TOPSOIL IN TOPSOIL STOCKPILES WITHIN THE LIMITS OF CONSTRUCTION WITH SILT FENCE ON THE DOWNSLOPE SIDE IN ACCORDANCE WITH THE VESCH, LATEST EDITION.
- ES-12 ALL DISTURBED AREAS NOT OTHERWISE HARDCAPED AND STABILIZED ARE TO BE SEEDED IN ACCORDANCE WITH THE SEEDING SPECIFICATIONS IN THE VESCH, LATEST EDITION AND DEQ ESC TECHNICAL BULLETIN #4.
- ES-13 SEED AND MULCH ALL SOIL STOCKPILES AND MATERIALS LEFT UNDISTURBED IN ACCORDANCE WITH THE VESCH, LATEST EDITION AND DEQ ESC TECHNICAL BULLETIN #4.
- ES-14 ALL CULVERT INLET PROTECTION AND STORM DRAIN INLET PROTECTION MUST REMAIN IN PLACE UNTIL FINAL UPSLOPE STABILIZATION IS ACHIEVED.

EROSION & SEDIMENT CONTROL NOTES:

- 1. 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 SEDIMENT FROM LEAVING THE SITE. EROSION AND SEDIMENT CONTROL 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.
- 2. ALL WORK SHALL BE SUBJECT TO INSPECTION BY THE TOWN OF BLACKSBURG. THESE AGENCIES HAVE THE RIGHT TO ADD OR DELETE E&S CONTROLS IN THE FIELD. ANY CHANGES REQUIRED BY THE INSPECTOR OR NOTED DEFICIENCIES SHALL BE CORRECTED BY THE CONTRACTOR.
- 3. 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.
- 4. DUST CONTROL SHALL BE EMPLOYED TO REDUCE SURFACE AND AIR MOVEMENT OF DUST DURING LAND DISTURBING ACTIVITIES. THE FOLLOWING METHODS ARE RECOMMENDED, AND ADDITIONAL MEASURES MAY BE USED IN ACCORDANCE WITH VESCH STANDARDS AND SPEC 3.39, OR AS DIRECTED BY THE VESCH AUTHORITY.
  - i. VEGETATIVE COVER - PHASE CLEARING AND GRUBBING ACTIVITIES AND UTILIZE TEMPORARY SEEDING IN ACCORDANCE WITH MINIMUM STANDARD 1.
  - ii. IRRIGATION - SPRAY DISTURBED AREA UNTIL SURFACE IS WET.
  - iii. STONE - STABILIZED DISTURBED AREA WITH CRUSHED STONE OR COARSE GRAVEL.
  - iv. MULCH - COVER DISTURBED AREAS AND APPLY WITH TACKIFIERS WHEN USING LIGHTWEIGHT ORGANIC MULCHES.
- 6. ANY OFF-SITE LOCATION THAT IS USED AS A SOURCE OF BORROW SOIL, MATERIALS OR RECEIVES WASTE SOIL MATERIALS FROM THE SITE MUST BE APPROVED BY THE EROSION & SEDIMENT CONTROL ADMINISTRATOR OF THE JURISDICTION IN WHICH THAT OFF-SITE AREA IS LOCATED.

LEGEND

- CONTOURS: 1000
- GROUND ELEVATION: TC 89.5, BC 89.0
- FENCE: X-X
- PROPERTY LINE/ROW: ---
- EASEMENT: - - -
- ASPHALT PAVEMENT: [Hatched Box]
- CONCRETE: [Dotted Box]
- GRASS: [Horizontal Lines Box]
- CG-2 (6" CURB): [Double Line Box]
- CG-6 (6" CURB AND GUTTER): [Triple Line Box]
- DETECTABLE WARNING SURFACE: [Circle with X Box]
- SIGN: [Square with X Box]
- BOLLARD: [Circle with Dot Box]
- STORM SEWER: [Circle with S Box]
- STORM CLEANOUT: [Circle with C Box]
- STORM MANHOLE: [Circle with M Box]
- STORM DRAINAGE INLET: [Circle with I Box]
- STORM STRUCTURE KEY: [Circle with Number Box]



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Hampton Roads, VA



GENERAL & EROSION & SEDIMENT CONTROL NOTES  
PATRICK HENRY DRIVE BUS STOP  
PRICES FORK MAG. DISTRICT, BLACKSBURG, MONTGOMERY COUNTY, VIRGINIA

REVISIONS

DESIGNED BY:	AJH
DRAWN BY:	MJR
CHECKED BY:	JEH
SCALE:	NO SCALE
DATE:	10/04/2022
PROJECT NUMBER:	2102060

TOWN APPROVAL

TOWN PLANNER: [Signature] DATE: 6/21/23

TOWN PLANNER ENGINEER: [Signature] DATE: 6/21/23

C002

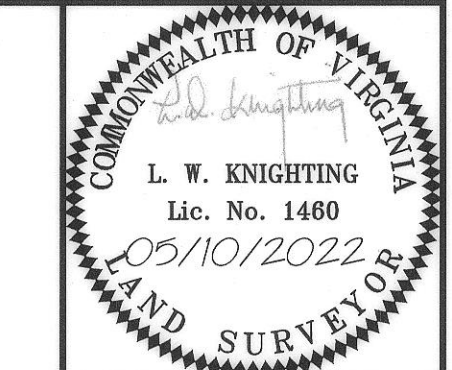


**NOTES:**

- 1.) SOURCE OF MERIDIAN: VIRGINIA STATE PLANE, SOUTH ZONE, (NAD 83) BASED UPON: VIRTUAL REFERENCE STATIONS SYSTEM (VRS).
- 2.) VERTICAL DATUM: NAVD 88 BASED UPON: VIRTUAL REFERENCE STATIONS SYSTEM (VRS).
- 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 D, ASCE 38-02 - COMPILED RECORDS ONLY
  - \_\_\_ SUE QUALITY LEVEL C, ASCE 38-02 - VISIBLE EVIDENCE IN CONJUNCTION WITH COMPILED RECORDS.
  - \_\_\_ X SUE QUALITY LEVEL B, ASCE 38-02 - FIELD DESIGNATION OF UNDERGROUND UTILITIES PERFORMED BY DAA; AND VISIBLE EVIDENCE IN CONJUNCTION WITH COMPILED RECORDS.
  - \_\_\_ SUE QUALITY LEVEL A, ASCE 38-02 - TEST PITS AT LOCATIONS SHOWN HEREON PERFORMED BY (DAA; OTHER) IN CONJUNCTION WITH FIELD DESIGNATION OF UNDERGROUND UTILITIES PERFORMED BY (DAA; MISS UTILITY, TICKET # \_\_\_\_\_ OTHER), VISIBLE EVIDENCE AND COMPILED RECORDS.
  - NO SUE WAS PERFORMED OR REQUESTED FOR THIS SURVEY. UTILITIES SHOWN HEREON ARE BASED ON FIELD OBSERVATION ONLY.
- 5.) THIS TOPOGRAPHIC SURVEY 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 FEB. 08, 2022; 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 TOWN OF BLACKSBURG, DRAPER ADEN ASSOCIATES ASSUMES NO LIABILITY FOR REUSE OR MODIFICATION OF THIS DOCUMENT.
- 8.) PROPERTY LINES SHOWN HEREON ARE BASED ON CURRENT COMPILED 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.
- 10.) THE PROPERTY SHOWN HEREON IS LOCATED IN FLOOD ZONE(S) X BASED ON A SCALED LOCATION ON FIRM PANEL #51121C0131C EFFECTIVE DATE SEPT. 25, 2009. THIS FLOOD DETERMINATION IS NOT A RECOMMENDATION BY DRAPER ADEN ASSOCIATES TO NOT PURCHASE OR PURCHASE FLOOD INSURANCE COVERAGE AND DOES NOT IMPLY THAT THE REFERENCED PROPERTY WILL OR WILL NOT BE FREE FROM FLOOD DAMAGE.
- 11.) MATTERS PERTAINING TO ARCHEOLOGICAL OR HISTORIC FEATURES, WETLANDS OR FLOOD CONDITIONS, IF ANY, HAVE NOT BEEN ADDRESSED AS PART OF THIS SURVEY.

**TOWN APPROVAL**

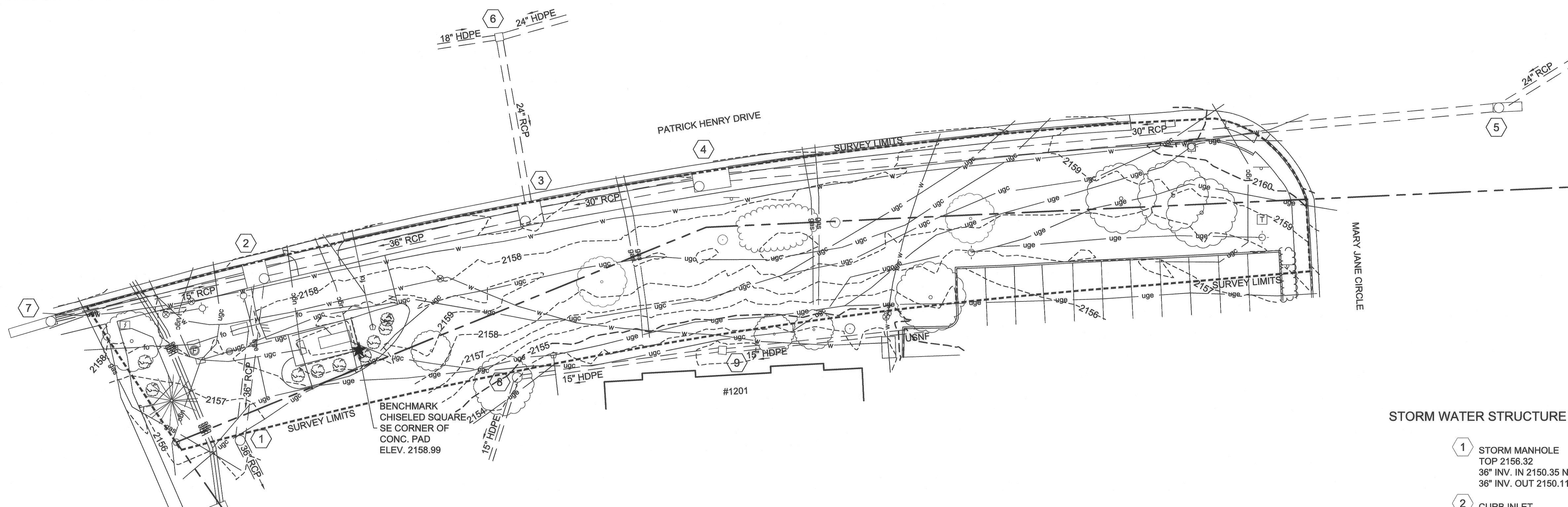
	6/21/23
TOWN PLANNER	DATE
	6/24/23
TOWN PLANNER	DATE



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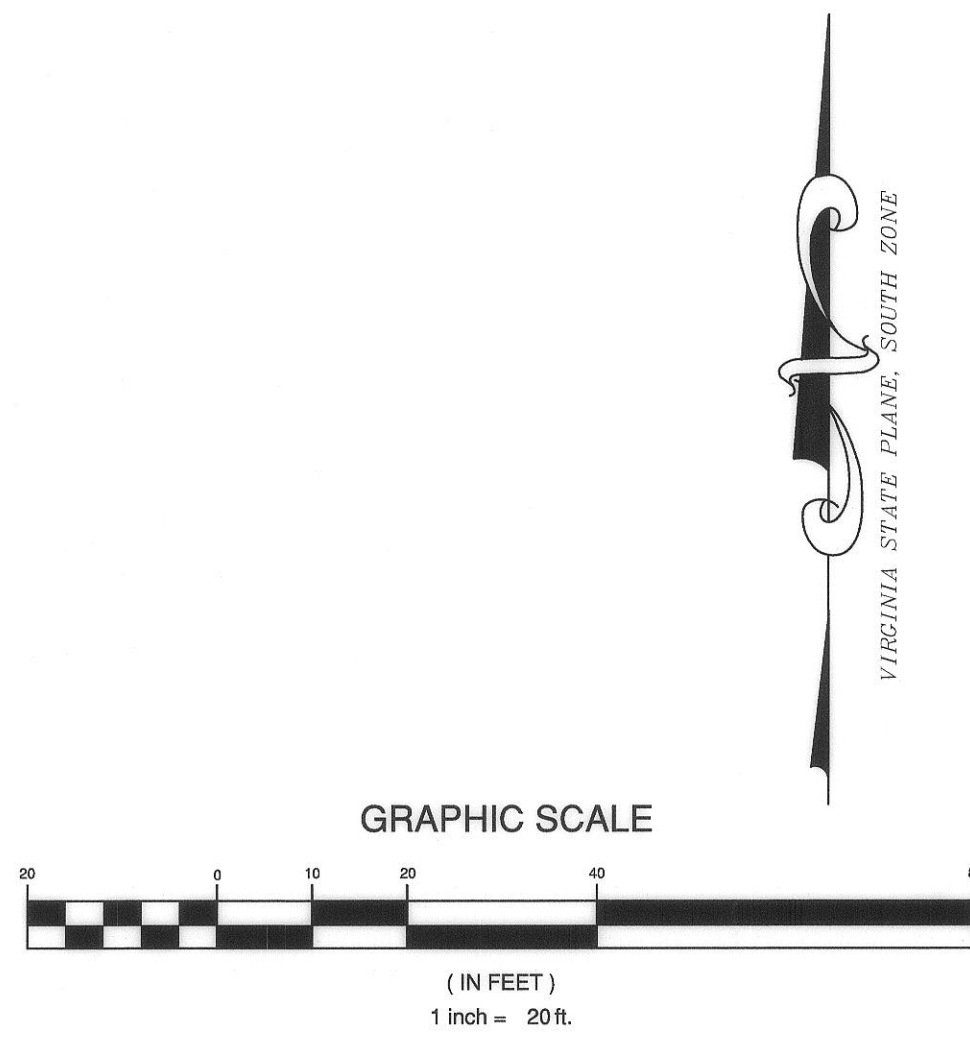


**STORM WATER STRUCTURE TABLE**

1	STORM MANHOLE TOP 2156.32 36" INV. IN 2150.35 NE 36" INV. OUT 2150.11 SE
2	CURB INLET TOP 2157.50 15" INV. IN 2152.80 SW 36" INV. IN 2151.55 NE 36" INV. OUT 2151.25 SW
3	CURB INLET TOP 2156.98 24" INV. IN 2152.27 NW 30" INV. IN 2052.16 NE 36" INV. OUT 2151.94 SW
4	CURB INLET TOP 2157.14 30" INV. IN 2152.56 NE 30" INV. OUT 2152.35 SW
5	CURB INLET TOP 2163.36 24" INV. IN 2153.84 NE 30" INV. OUT 2153.70 SW
6	GRATE INLET TOP 2157.55 18" INV. IN 2153.35 SW 24" INV. IN 2153.33 NE 24" INV. OUT 2153.24 SE
7	CURB INLET TOP 2158.58 15" INV. OUT 2154.38 NE
8	STORM MANHOLE TOP 2154.48 15" INV. IN 2147.46 NE 15" INV. OUT 2147.30 SW
9	GRATE INLET TOP 2152.62 15" INV. IN 2148.03 NE 15" INV. OUT 2147.81 SW

**LEGEND**

---	PROPERTY LINE	○	TELEPHONE PEDESTAL	□	ELECTRIC BOX
- - - - 1000 - - - -	CONTOUR	⊕	TELEPHONE MANHOLE	⊙	GUY POLE
g	GAS LINE	⊠	TELEPHONE BOX	⊕	ELECTRIC MARKER
chp	OVERHEAD POWER	⊙	FIRE HYDRANT	⊕	ELECTRICAL MANHOLE
ss	SANITARY SEWER AND MANHOLE	⊕	WATER VALVE	⊙	UTILITY POLE
---	STORM LINE AND MANHOLE	⊕	WATER METER	⊕	ELECTRIC HANDHOLE
---	STORM LINE AND INLET	⊕	WELL	⊙	GROUND LIGHT
catv	UNDERGROUND CABLE TV	★	BENCHMARK	⊙	LIGHT POLE
uge	UNDERGROUND ELECTRIC	●	BOLLARD	⊕	FIBER OPTIC PEDESTAL
ugt	UNDERGROUND TELEPHONE	○	ROD FOUND	⊕	FIBER OPTIC HANDHOLE
fo	UNDERGROUND FIBER OPTIC	□	MONUMENT FOUND	⊕	GAS VENT
unk	UNKNOWN UTILITY	⊕	SIGN (1-POST)	○	GAS VALVE
w	WATERLINE	⊕	SIGN (2-POST)	⊠	GAS METER
///	ASPHALT	⊕	1561.3 SPOT ELEVATION	⊕	SEWER CLEAN OUT
---	BUILDING	○	DECIDUOUS TREE	⊕	WOOD POST
-x-	FENCE (AS NOTED)	⊕	EVERGREEN TREE	⊕	METAL POST
---	STREAM	⊕	SHRUB	⊕	GRAVEL
---	TREELINE	⊕	CONCRETE		
---	GUY WIRE				



EXISTING CONDITIONS  
**PATRICK HENRY DRIVE BUS STOP**  
 PRICES FORK MAG. DISTRICT, BLACKSBURG, MONTGOMERY COUNTY, VIRGINIA

REVISIONS

DESIGNED BY:	N/A
DRAWN BY:	JFF
CHECKED BY:	LWK
SCALE:	1" = 20'
DATE:	10/04/2022
PROJECT NUMBER:	2102060

**C101**

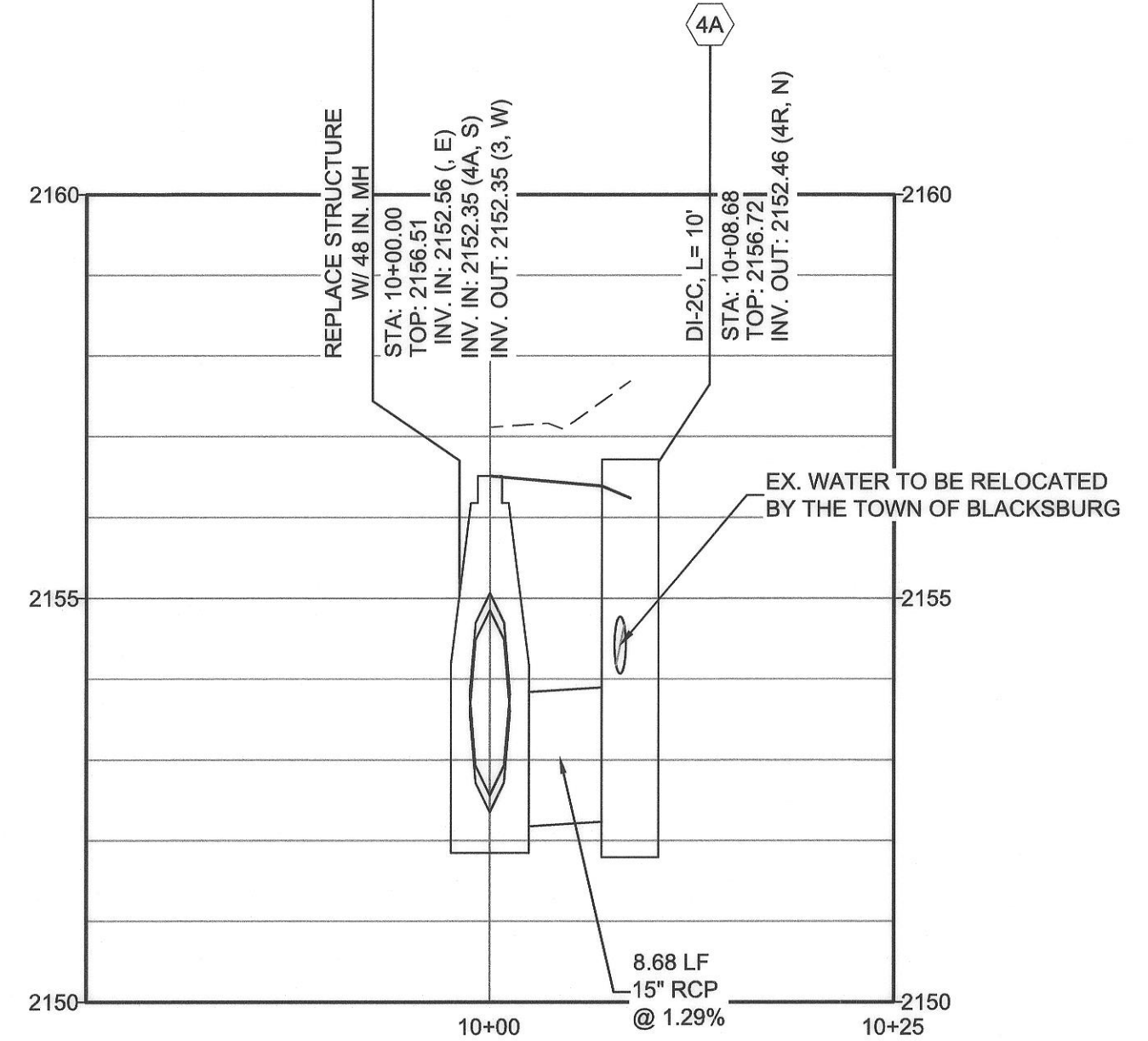
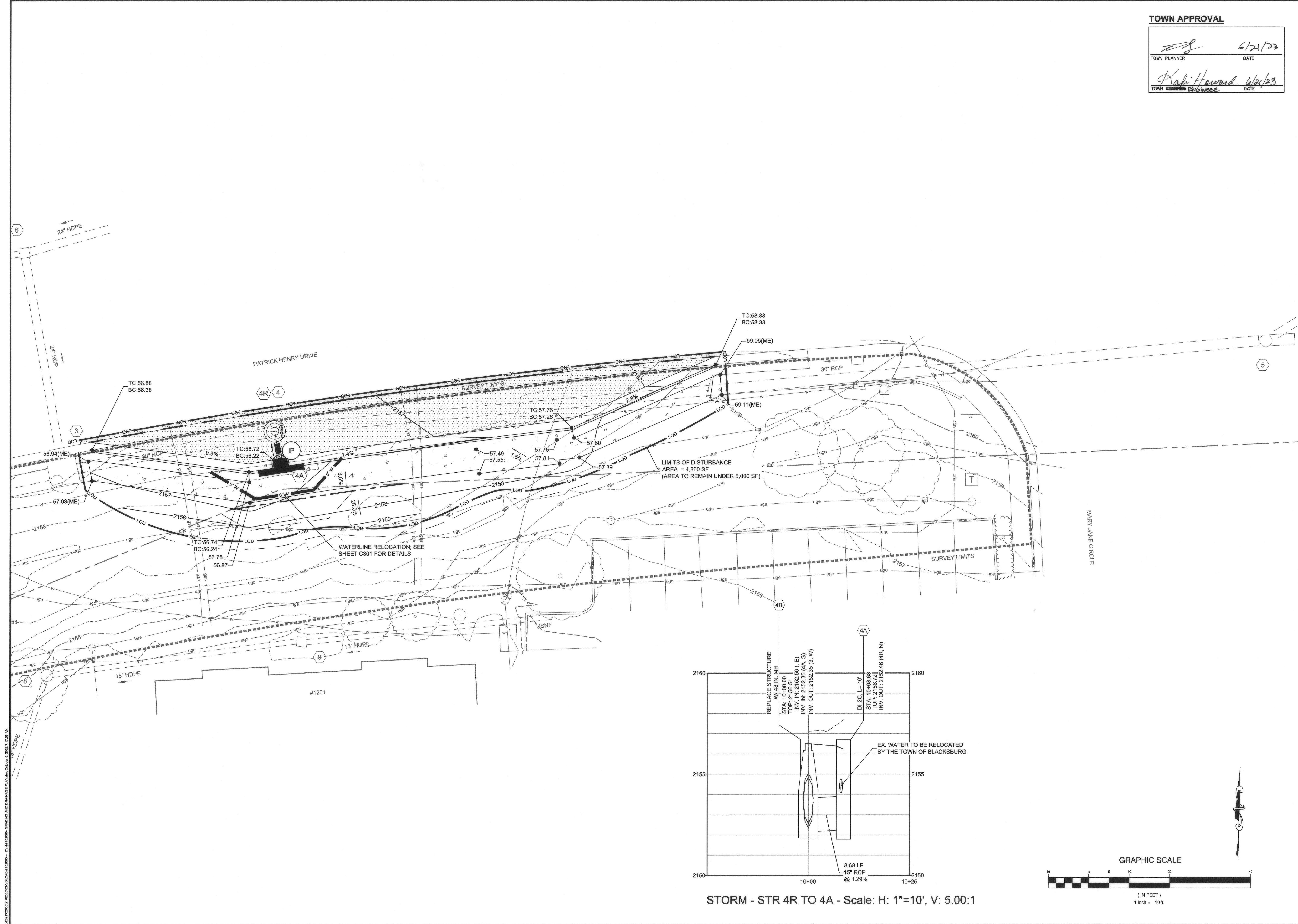




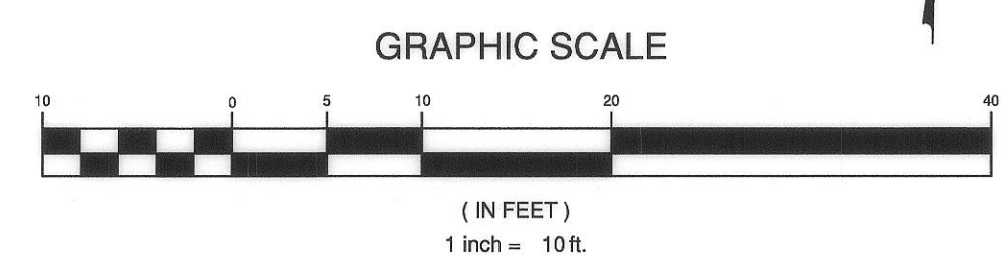








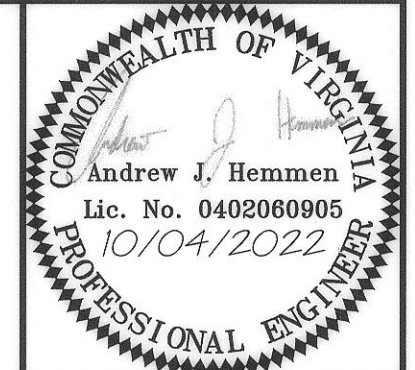
STORM - STR 4R TO 4A - Scale: H: 1"=10', V: 5.00:1



**TOWN APPROVAL**

Andrew J. Hemmen  
 6/21/23  
 TOWN PLANNER DATE

Kali Howard  
 6/21/23  
 TOWN PLANNER ENGINEER DATE



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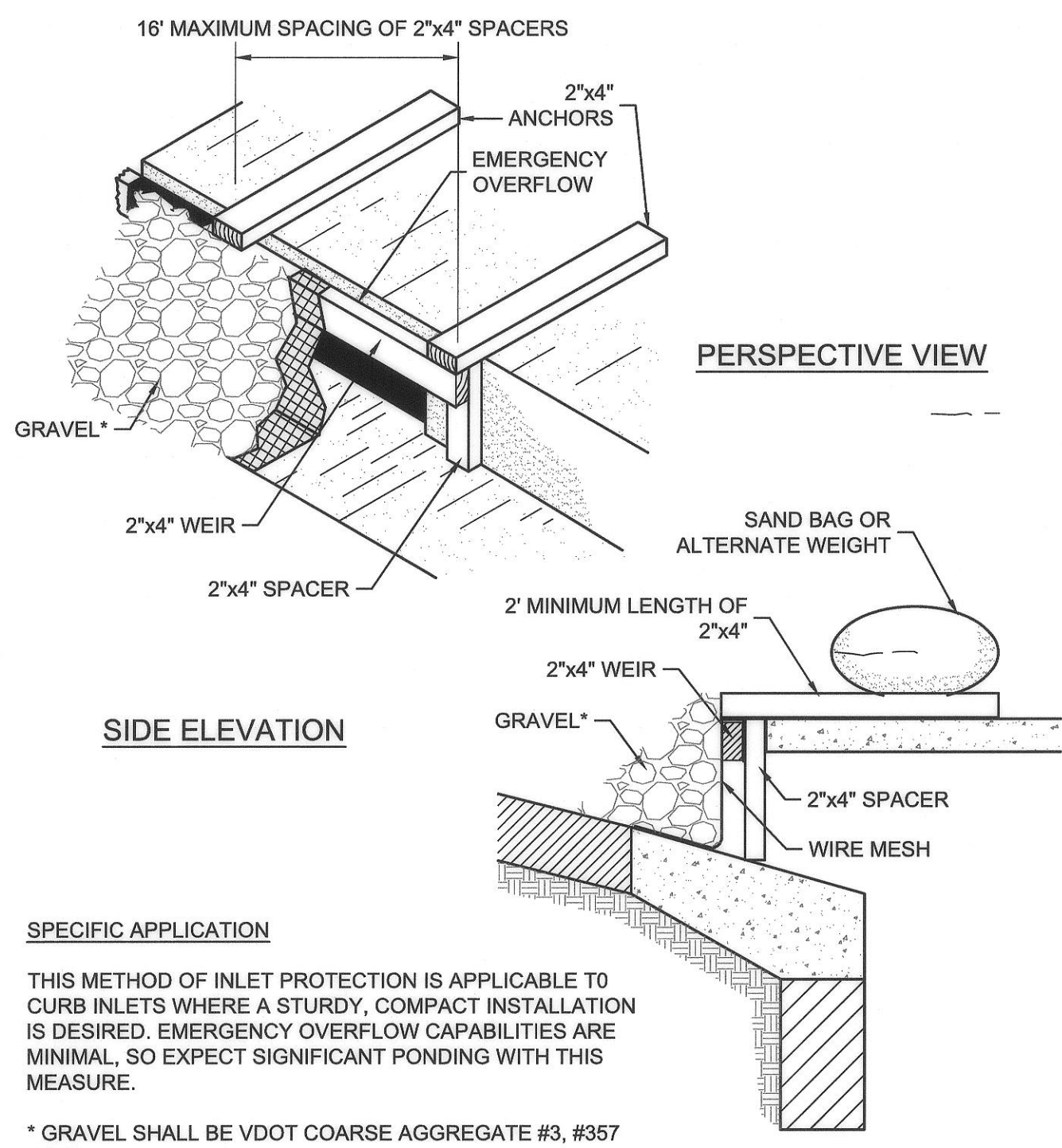
**GRADING, DRAINAGE AND PHASE 2 ESC PLAN**  
**PATRICK HENRY DRIVE BUS STOP**  
 PRICES FORK MAG. DISTRICT, BLACKSBURG, MONTGOMERY COUNTY, VIRGINIA

REVISIONS

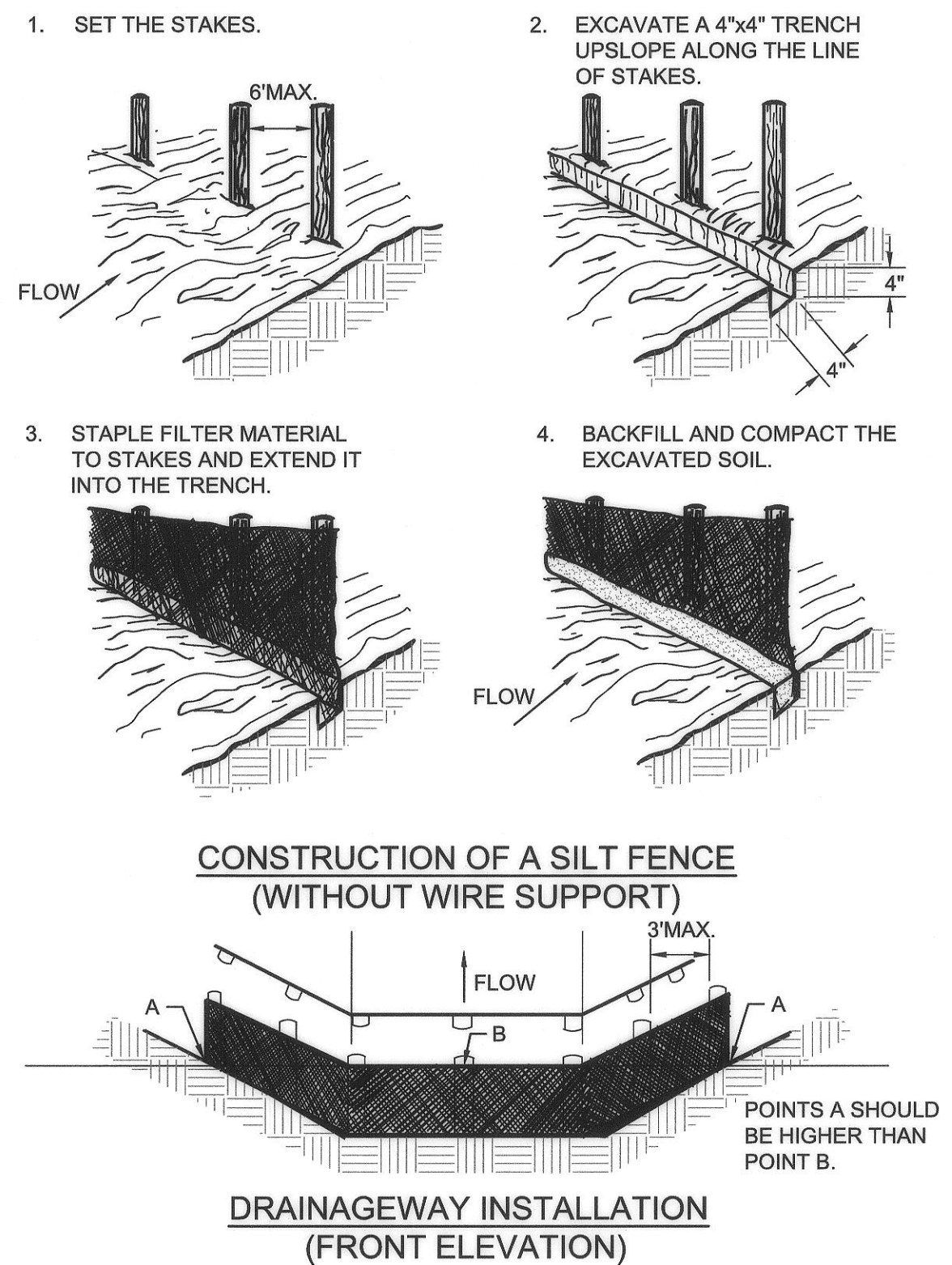
DESIGNED BY:	AJH
DRAWN BY:	MJR
CHECKED BY:	JEH
SCALE:	1" = 10'
DATE:	10/04/2022
PROJECT NUMBER:	2102060

**C401**

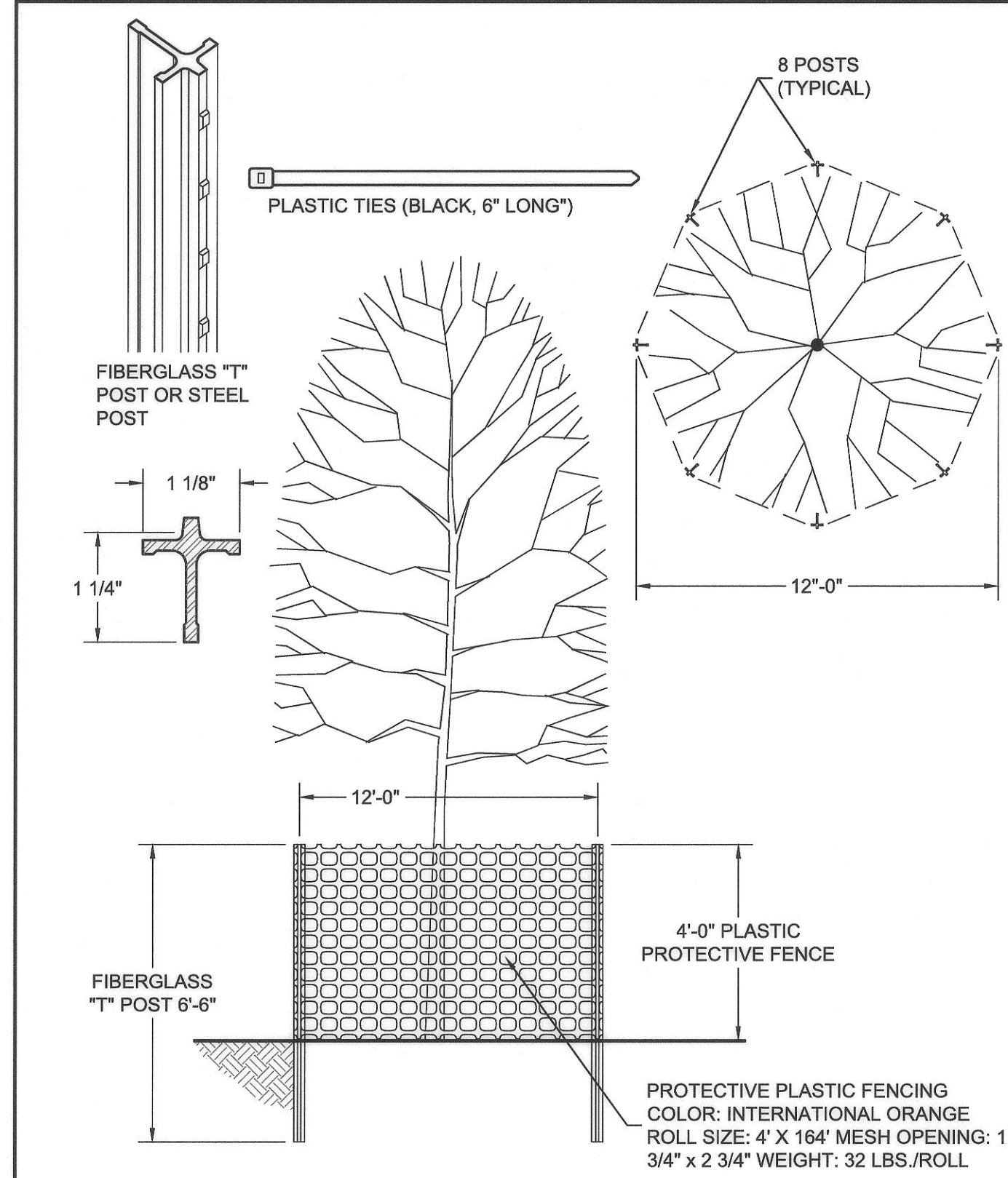




CURB INLET PROTECTION WITH 2x4 WOODEN WEIR  
NOT TO SCALE



SILT FENCE INSTALLATION DETAILS WITHOUT WIRE BACKING  
NOT TO SCALE



TREE PROTECTION DETAIL - PLASTIC FENCING  
NOT TO SCALE

**TOPSOILING** (TO)

FIELD EXPLORATION OF THE SITE SHALL BE MADE TO DETERMINE IF THERE IS SUFFICIENT SURFACE SOIL OF GOOD QUALITY TO JUSTIFY STRIPPING. TOPSOIL SHALL BE FRIABLE AND LOAMY (LOAM, SANDY LOAM, SILT LOAM, SANDY CLAY LOAM, CLAY LOAM). IT SHALL BE FREE OF DEBRIS, TRASH, STUMPS, ROCKS, ROOTS, AND NOXIOUS WEEDS, AND SHALL GIVE EVIDENCE OF BEING ABLE TO SUPPORT HEALTHY VEGETATION. IT SHALL CONTAIN NO SUBSTANCE THAT IS POTENTIALLY TOXIC TO PLANT GROWTH.

ALL TOPSOIL SHALL BE TESTED BY A RECOGNIZED LABORATORY FOR THE FOLLOWING CRITERIA:

- ORGANIC MATTER CONTENT SHALL BE NOT LESS THAN 1.5% BY WEIGHT.
- PH RANGE SHALL BE FROM 6.0-7.5. IF PH IS LESS THAN 6.0, LIME SHALL BE ADDED IN ACCORDANCE WITH SOIL TEST RESULTS OR IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE VEGETATIVE ESTABLISHMENT PRACTICE BEING USED.
- SOLUBLE SALTS SHALL NOT EXCEED 500 PPM.

IF ADDITIONAL OFF-SITE TOPSOIL IS NEEDED, IT MUST MEET THE STANDARDS STATED ABOVE.

**STRIPPING:** TOPSOIL OPERATIONS SHOULD NOT BE PERFORMED WHEN THE SOIL IS WET OR FROZEN. STRIPPING SHALL BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA. A 4- TO 6-INCH STRIPPING DEPTH IS COMMON, BUT DEPTH MAY VARY DEPENDING ON THE PARTICULAR SOIL. ALL PERIMETER DIKES, BASINS, AND OTHER SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO STRIPPING.

**STOCKPILING:** TOPSOIL SHALL BE STOCKPILED IN SUCH A MANNER THAT NATURAL DRAINAGE IS NOT OBSTRUCTED AND NO OFF-SITE SEDIMENT DAMAGE SHALL RESULT. STABILIZE OR PROTECT STOCKPILES IN ACCORDANCE WITH MS #2. SIDE SLOPES OF THE STOCKPILE SHALL NOT EXCEED 2:1. PERIMETER CONTROLS MUST BE PLACED AROUND THE STOCKPILE IMMEDIATELY; SEEDING OF STOCKPILES SHALL BE COMPLETED WITHIN 7 DAYS OF THE FORMATION OF THE STOCKPILE, IN ACCORDANCE WITH STD. & SPEC. 3.31, TEMPORARY SEEDING IF IT IS TO REMAIN DORMANT FOR LONGER THAN 30 DAYS (REFER TO MS #1 AND MS #2).

**LIMING:** WHERE THE PH OF THE SUBSOIL IS 6.0 OR LESS, OR THE SOIL IS COMPOSED OF HEAVY CLAYS, AGRICULTURAL LIMESTONE SHALL BE SPREAD IN ACCORDANCE WITH THE SOIL TEST OR THE VEGETATIVE ESTABLISHMENT PRACTICE BEING USED.

**BONDING:** AFTER THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GRADE, AND IMMEDIATELY PRIOR TO DUMPING AND SPREADING THE TOPSOIL, THE SUBGRADE SHALL BE LOOSENEED BY DISCING OR SCARIFYING TO A DEPTH OF AT LEAST 2 INCHES TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL.

**APPLYING TOPSOIL:** TOPSOIL SHALL NOT BE PLACED WHILE IN A FROZEN OR MUDDY CONDITION, WHEN TOPSOIL OR SUBGRADE IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING OR PROPOSED SODDING OR SEEDING. THE TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 2 INCHES ON 3:1 OR STEEPER SLOPES AND 4 INCHES ON FLATTER SLOPES. ANY IRREGULARITIES IN THE SURFACE, RESULTING FROM TOPSOILING OR OTHER OPERATIONS, SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

IT IS NECESSARY TO COMPACT THE TOPSOIL ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL AND TO OBTAIN A LEVEL SEEDBED FOR THE ESTABLISHMENT OF HIGH MAINTENANCE TURF. HOWEVER, UNDUCE COMPACTION IS TO BE AVOIDED AS IT INCREASES RUNOFF VELOCITY AND VOLUME, AND DETERS SEED GERMINATION. SPECIAL CONSIDERATION SHOULD BE GIVEN TO THE TYPES OF EQUIPMENT USED TO PLACE TOPSOIL IN AREAS TO RECEIVE FINE TURF. AVOID UNNECESSARY COMPACTION BY HEAVY MACHINERY WHENEVER POSSIBLE.

3.30 TOPSOILING  
NOT TO SCALE

**PERMANENT SEEDING** (PS)

TABLE 3.32-C SITE SPECIFIC SEEDING MIXTURES FOR APPALACHIAN/MOUNTAIN AREA

MIXTURE	TOTAL LBS. PER ACRE
<b>MINIMUM CARE LAWN</b>	200-250 LBS.
-KENTUCKY 31 OR TURF-TYPE TALL FESCUE	90-100%
-IMPROVED PERENNIAL RYEGRASS *	0-10%
-KENTUCKY BLUEGRASS	0-10%
<b>HIGH-MAINTENANCE LAWN</b>	125 LBS.
MINIMUM OF THREE (3) UP TO FIVE (5) VARIETIES OF BLUEGRASS FROM APPROVED LIST FOR USE IN VIRGINIA	
<b>GENERAL SLOPE (3:1 OR LESS)</b>	128 LBS.
-KENTUCKY 31 FESCUE	2 LBS.
-RED TOP GRASS	20 LBS.
-SEASONAL NURSE CROP **	150 LBS.
<b>LOW-MAINTENANCE SLOPE (STEEPER THAN 3:1)</b>	108 LBS.
-KENTUCKY 31 FESCUE	2 LBS.
-RED TOP GRASS	20 LBS.
-SEASONAL NURSE CROP	20 LBS.
-CROWN VETCH	150 LBS.

- \* PERENNIAL RYEGRASS WILL GERMINATE FASTER AND AT LOWER SOIL TEMPERATURES THAN FESCUE, THEREBY PROVIDING COVER AND EROSION RESISTANCE FOR SEEDBED.
- \*\* USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:
- |  |                |
|--|----------------|
| MARCH, APRIL THROUGH MAY 15TH          | ANNUAL RYE     |
| MAY 16TH THROUGH AUGUST 15TH           | FOXTAIL MILLET |
| AUGUST 16TH THROUGH SEPTEMBER, OCTOBER | ANNUAL RYE     |
| NOVEMBER THROUGH FEBRUARY              | WINTER RYE     |
- \*\*\* IF FLATPEA IS USED, INCREASE TO 30 LBS./ACRE. ALL LEGUME SEED MUST BE PROPERLY INOCULATED. WEEPING LOVEGRASS MAY ALSO BE INCLUDED IN ANY SLOPE OR LOW-MAINTENANCE MIXTURE DURING WARMER SEEDING PERIODS; ADD 10-20 LBS./ACRE IN MIXES.

**TABLE 3.35-A**

**ORGANIC MULCH MATERIALS AND APPLICATION RATES**

MULCHES:	RATES:		NOTES:
	Per Acre	Per 1000 sq. ft.	
Straw or Hay	1 1/2 - 2 tons (Minimum 2 tons for winter cover)	70 - 90 lbs.	Free from weeds and coarse matter. Must be anchored. Spread with mulch blower or by hand.
Fiber Mulch	Minimum 1500 lbs.	35 lbs.	Do not use as mulch for winter cover or during hot, dry periods.* Apply as slurry.
Corn Stalks	4 - 6 tons	185 - 275 lbs.	Cut or shredded in 4-6" lengths. Air-dried. Do not use in fine turf areas. Apply with mulch blower or by hand.
Wood Chips	4 - 6 tons	185 - 275 lbs.	Free of coarse matter. Air-dried. Treat with 12 lbs nitrogen per ton. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.
Bark Chips or Shredded Bark	50 - 70 cu. yds.	1-2 cu. yds.	Free of coarse matter. Air-dried. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.

\* When fiber mulch is the only available mulch during periods when straw should be used, apply at a minimum rate of 2000 lbs./ac. or 45 lbs./1000 sq. ft.

ALL MULCHING TO COMPLY WITH VESCH STD. 3.35

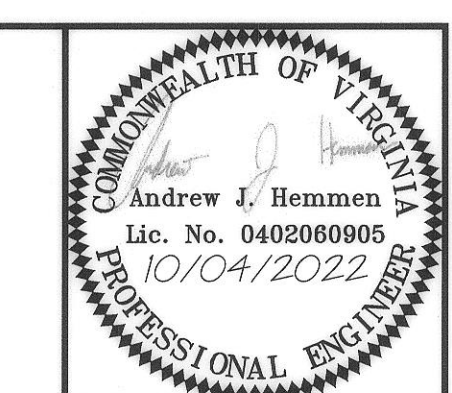
MULCHING  
NOT TO SCALE

(MU)

**TOWN APPROVAL**

Town Planner: *[Signature]* 6/24/23  
Date: 6/24/23

Town Engineer: *[Signature]* 6/21/23  
Date: 6/21/23



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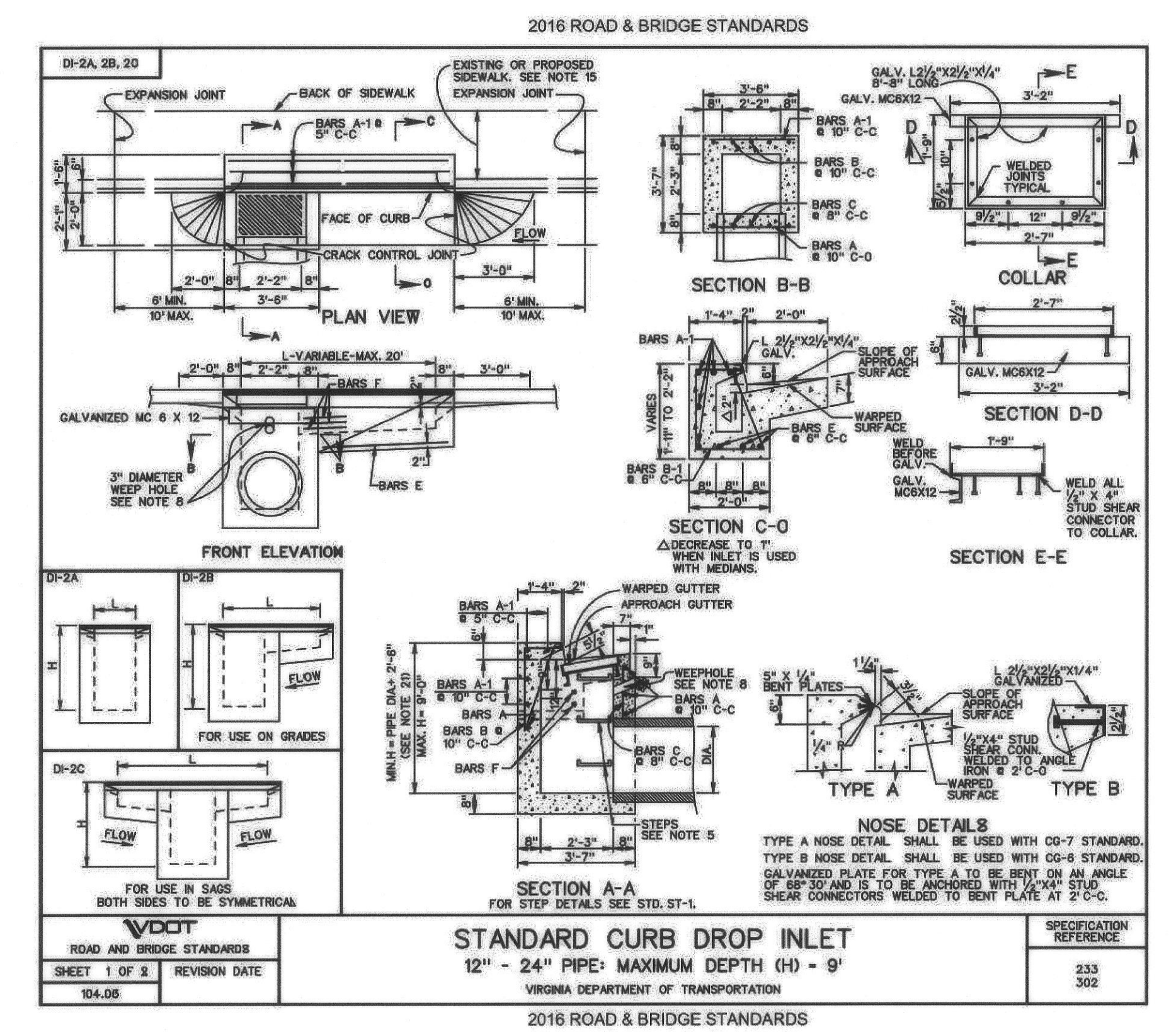
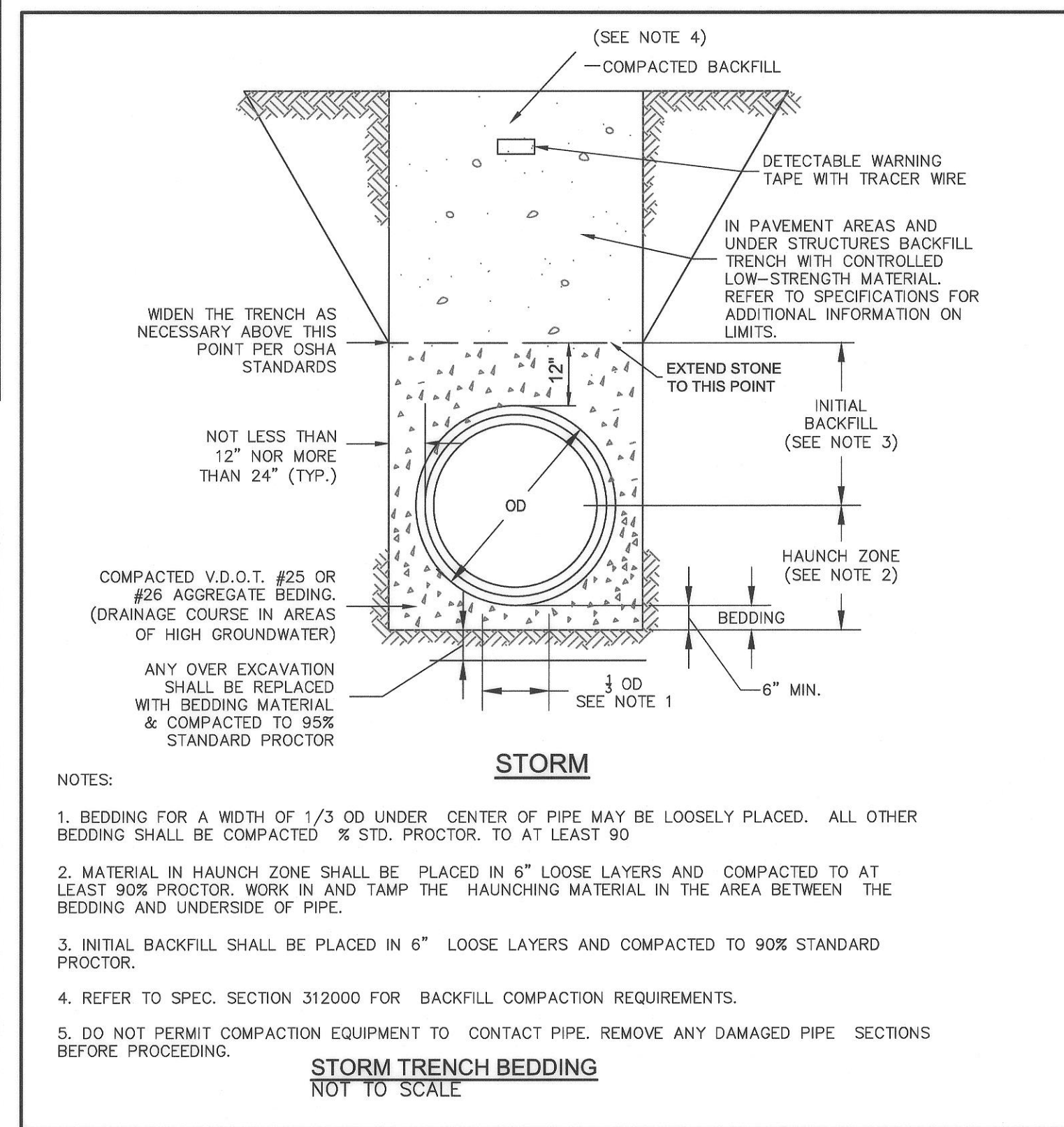
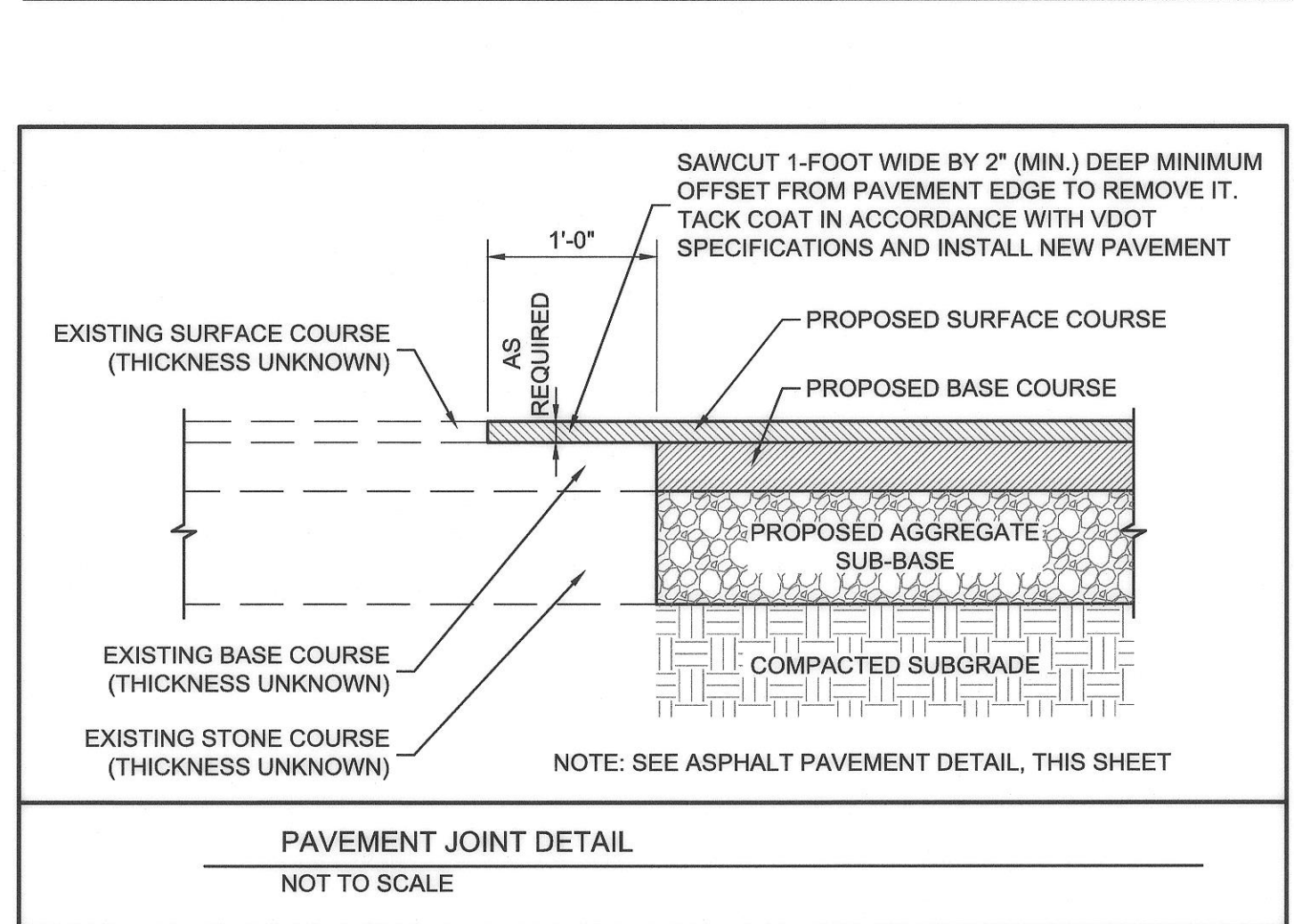
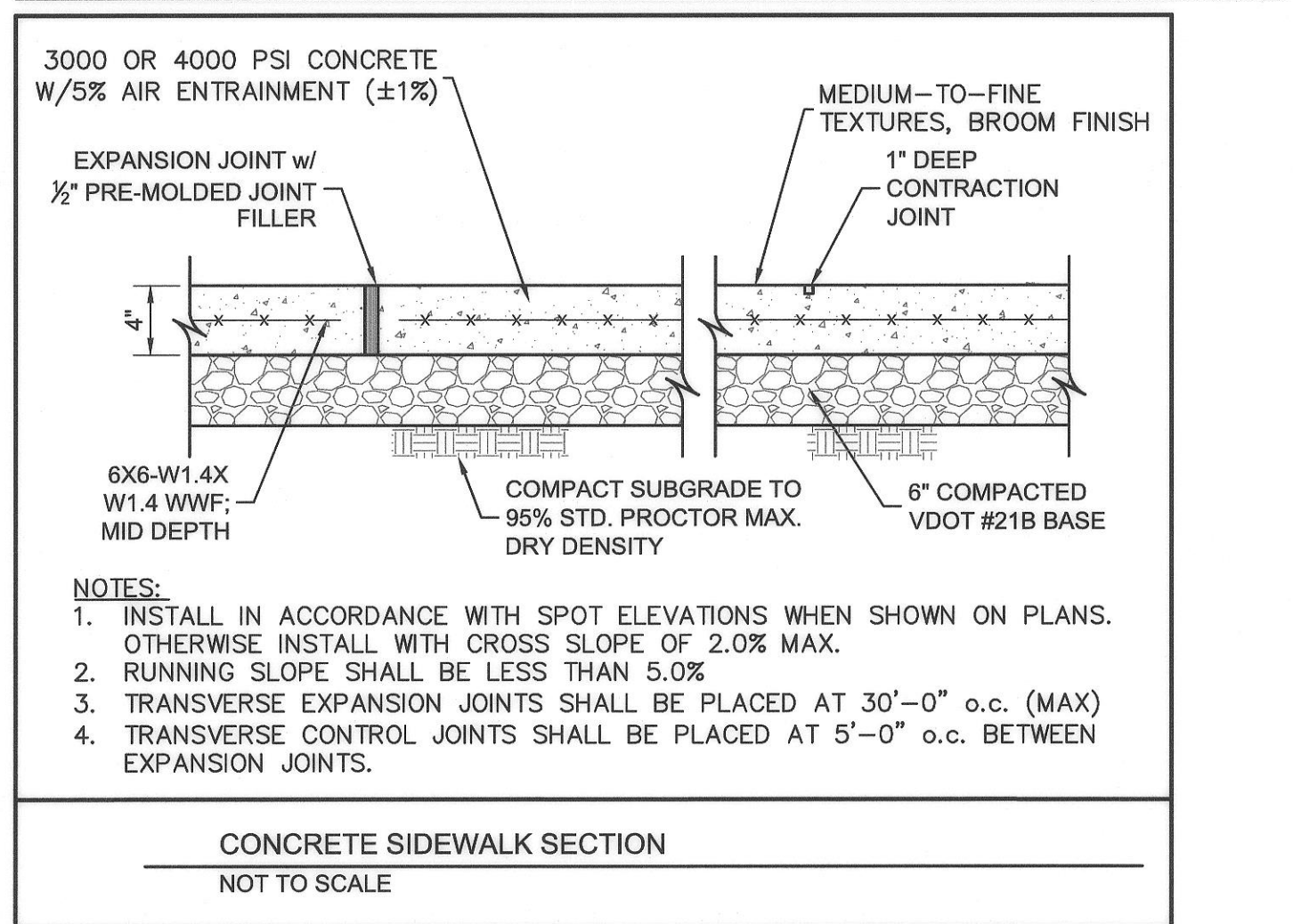
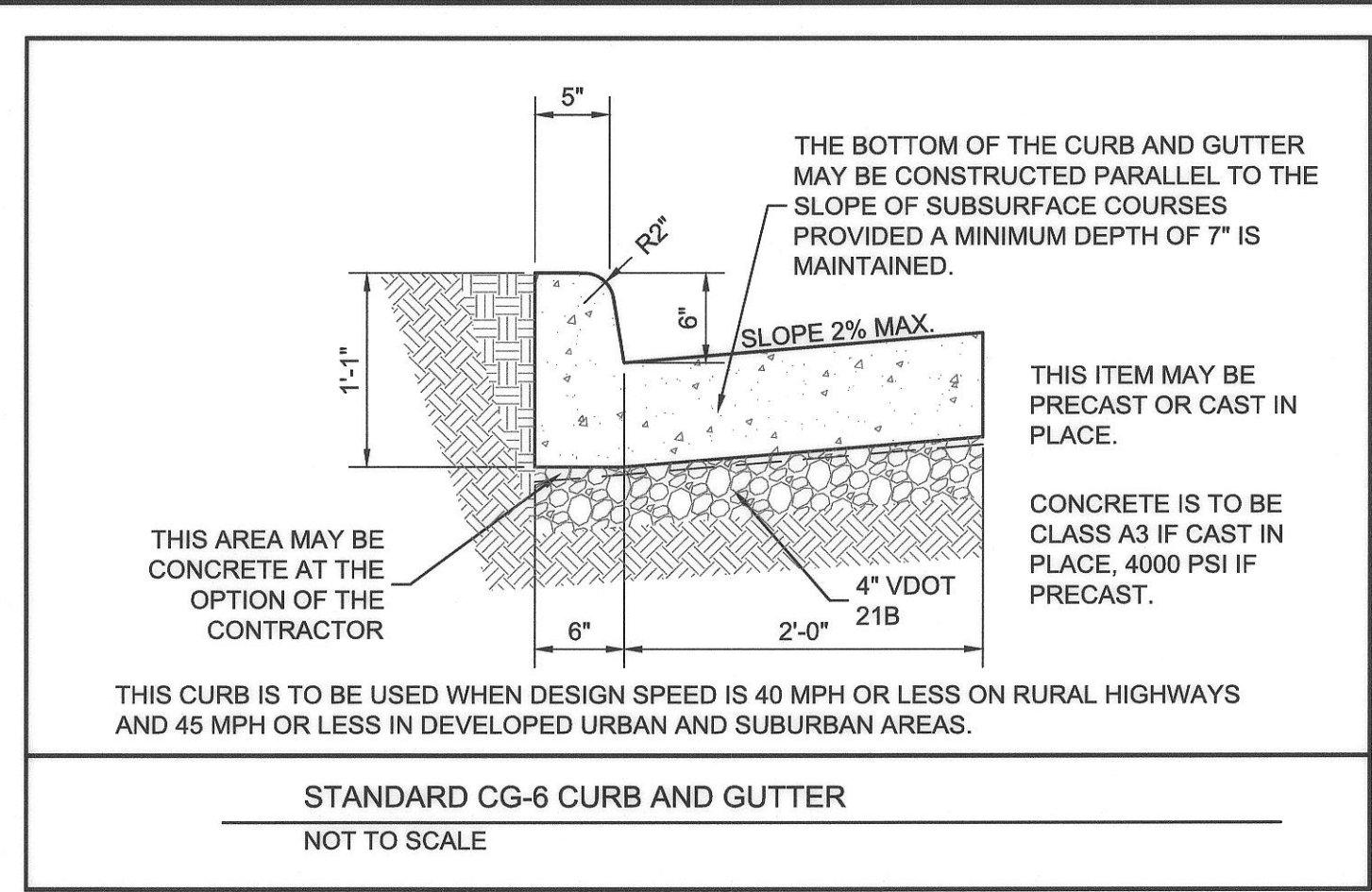
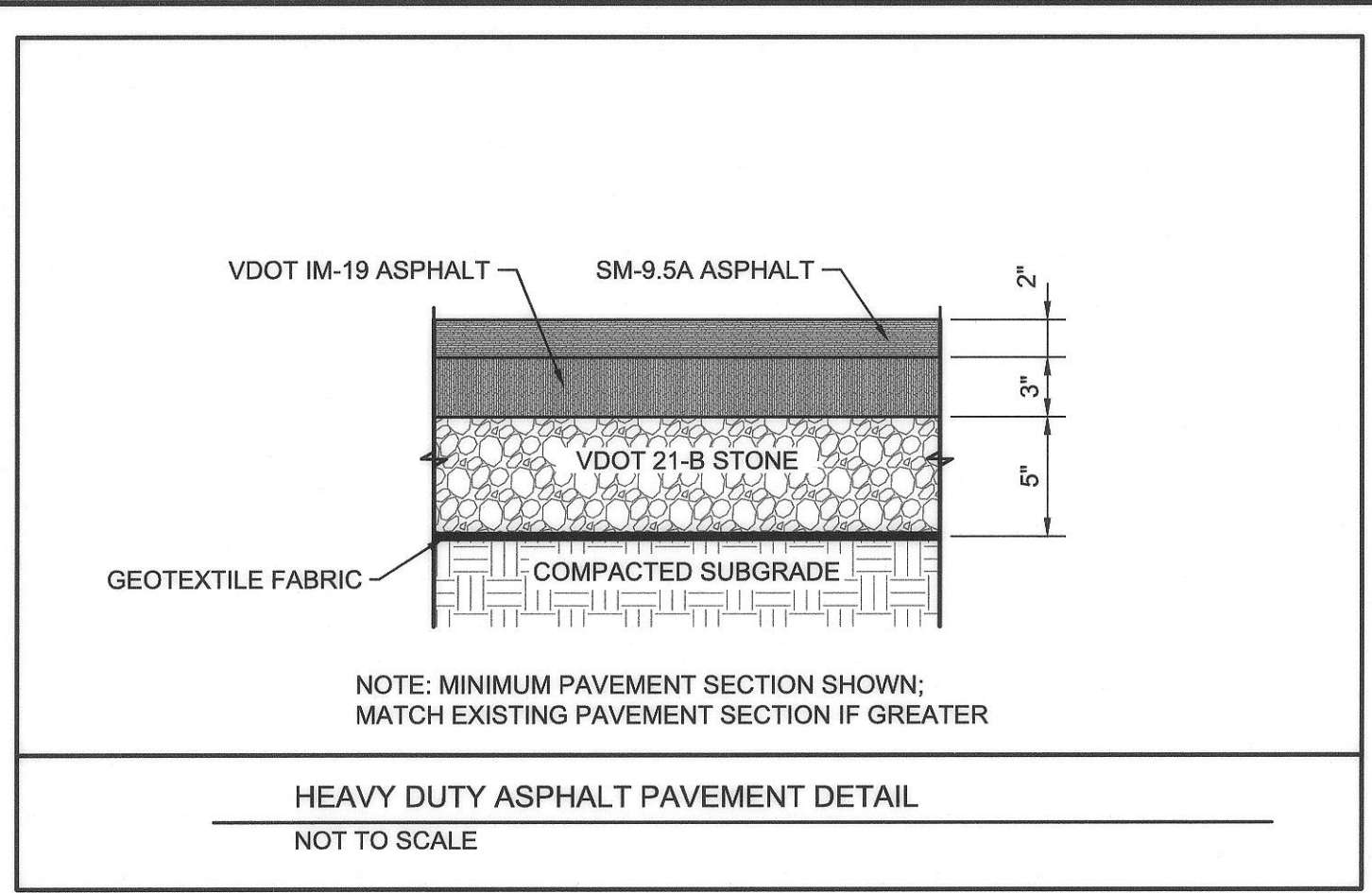
EROSION & SEDIMENT CONTROL DETAILS  
**PATRICK HENRY DRIVE BUS STOP**  
PRICES FORK MAG. DISTRICT, BLACKSBURG, MONTGOMERY COUNTY, VIRGINIA

REVISIONS

DESIGNED BY: AJH  
DRAWN BY: MJR  
CHECKED BY: JEH  
SCALE: NO SCALE  
DATE: 10/04/2022  
PROJECT NUMBER: 2102060

**C501**





2016 ROAD & BRIDGE STANDARDS

**TABLE OF QUANTITIES**

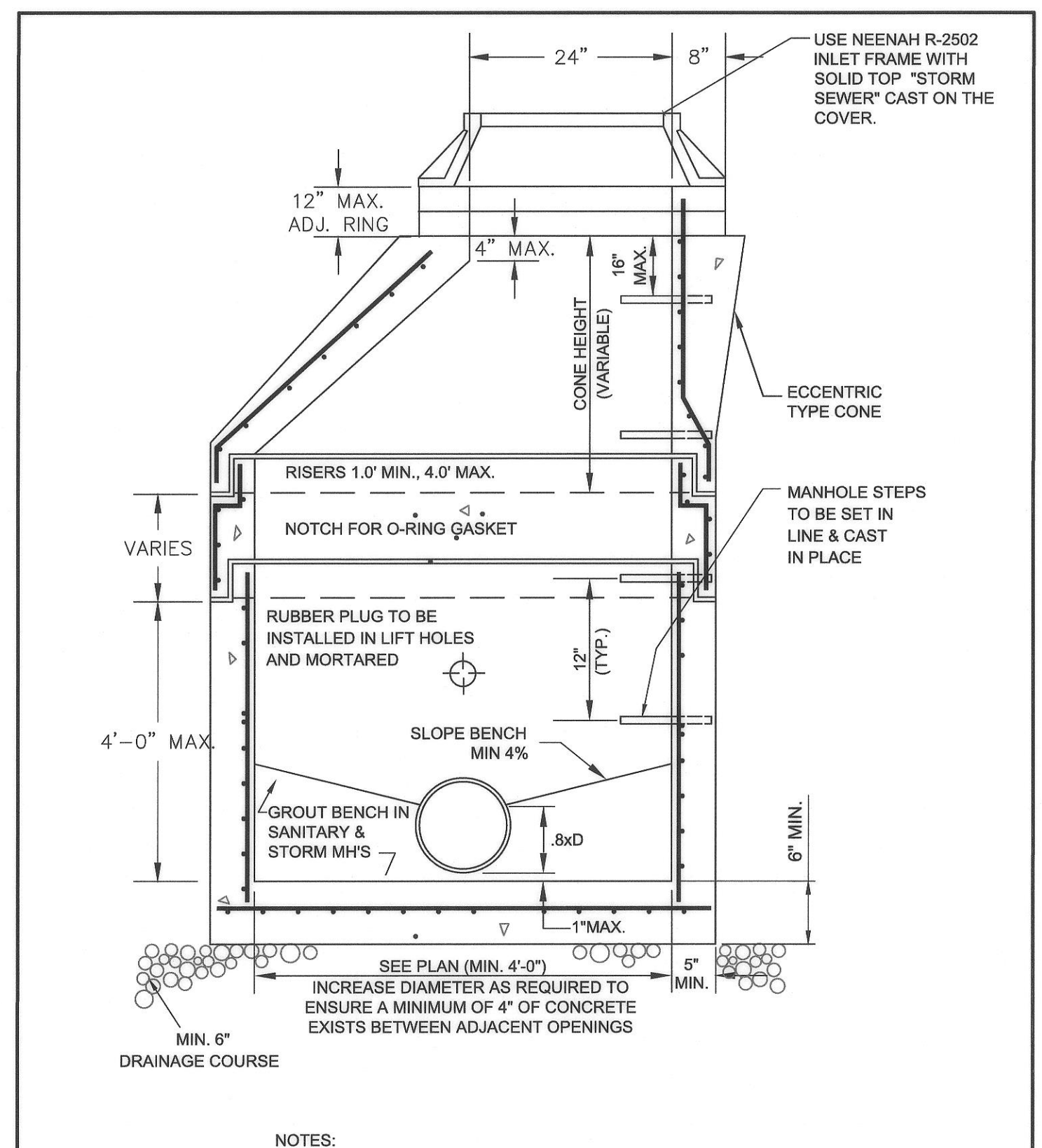
**REINFORCING STEEL**

TYPE	L	CONCRETE	BARS										WEIGHT		
FL.	Qt. Yds.	No.	Ln. Ft.	No.	Ln. Ft.	No.	Ln. Ft.	No.	Ln. Ft.	No.	Ln. Ft.	No.	Ln. Ft.	Ln.	
DI-2A	2'-0"	1.95	4	3'-2"	5	5'-0"	4	3'-6"	3	4'-3" to 4'-6"	5	2'-0"	3	2'-0"	55
DI-2B	8'	2.23	4	3'-2"	5	9'-0"	4	3'-6"	7	4'-3" to 4'-6"	5	2'-0"	3	1'-6"	119
DI-2B	8'	2.51	4	3'-2"	5	9'-0"	4	3'-6"	11	4'-3" to 4'-6"	5	2'-0"	3	1'-6"	154
DI-2B	10'	2.79	4	3'-2"	5	11'-0"	4	3'-6"	15	4'-3" to 4'-6"	5	2'-0"	3	1'-6"	189
DI-2B	12'	3.05	4	3'-2"	5	13'-0"	4	3'-6"	19	4'-3" to 4'-6"	5	2'-0"	3	1'-6"	224
DI-2B	14'	3.34	4	3'-2"	5	15'-0"	4	3'-6"	23	4'-3" to 4'-6"	5	2'-0"	3	1'-6"	259
DI-2B	16'	3.61	4	3'-2"	5	17'-0"	4	3'-6"	27	4'-3" to 4'-6"	5	2'-0"	3	1'-6"	294
DI-2B	18'	3.89	4	3'-2"	5	19'-0"	4	3'-6"	31	4'-3" to 4'-6"	5	2'-0"	3	1'-6"	329
DI-2B	20'	4.17	4	3'-2"	5	21'-0"	4	3'-6"	35	4'-3" to 4'-6"	5	2'-0"	3	1'-6"	364
DI-2C	8'	2.24	4	3'-2"	5	7'-0"	4	3'-6"	6	4'-3" to 4'-6"	5	2'-0"	6	1'-6"	115
DI-2C	8'	2.55	4	3'-2"	5	9'-0"	4	3'-6"	10	4'-3" to 4'-6"	5	2'-0"	6	1'-6"	149
DI-2C	10'	2.82	4	3'-2"	5	11'-0"	4	3'-6"	14	4'-3" to 4'-6"	5	2'-0"	6	1'-6"	183
DI-2C	12'	3.09	4	3'-2"	5	13'-0"	4	3'-6"	18	4'-3" to 4'-6"	5	2'-0"	6	1'-6"	217
DI-2C	14'	3.37	4	3'-2"	5	15'-0"	4	3'-6"	22	4'-3" to 4'-6"	5	2'-0"	6	1'-6"	251
DI-2C	16'	3.65	4	3'-2"	5	17'-0"	4	3'-6"	26	4'-3" to 4'-6"	5	2'-0"	6	1'-6"	285
DI-2C	18'	3.93	4	3'-2"	5	19'-0"	4	3'-6"	30	4'-3" to 4'-6"	5	2'-0"	6	1'-6"	319
DI-2C	20'	4.20	4	3'-2"	5	21'-0"	4	3'-6"	34	4'-3" to 4'-6"	5	2'-0"	6	1'-6"	353

**NOTES:**

- ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 2".
- MINIMUM HEIGHT OF PIPE DIA + 2'-0" WHEN PIPES ARE LOCATED UNDER EXTENDED SLOT OF INLET.
- CAST-IN PLACE CONCRETE IS TO BE CLASS A3 (3000 PSI). PRECAST CONCRETE IS TO BE 4000 PSI.
- LENGTH OF SLOT (L) WILL, IN EVERY CASE, BE SHOWN ON PLANS.
- THIS STANDARD IS INTENDED FOR USE IN CURB AND GUTTER SITUATIONS ONLY.
- STANDARD INLETS MAY BE CONSTRUCTED WITH CONCRETE BLOCKS IN ACCORDANCE WITH THE DETAILS SHOWN ON STANDARD DRAWING C-86.
- THIS AREA MAY BE EARTHEN IN WHICH CASE THE EXPANSION JOINTS WILL APPLY ONLY TO CURB AND GUTTER.
- CONCRETE QUANTITIES SHOWN ARE FOR DEPTH (H) OF 3'-0" WITHOUT CURB. THE AMOUNT OF CURB SHALL BE DEDUCTED TO OBTAIN NET QUANTITIES FOR INLETS OF DIFFERENT DEPTHS AND OR SUBURBAN CUBIC YARDS OF CONCRETE FOR EACH FOOT.
- LENGTH OF ANGLE IRON AS SHOWN ON SHEET 1 OF 2 IS TO BE 1' @ 4.30 LBS./FT.
- \* DENOTES LENGTH OF ONE (1) BAR.
- ALL REINFORCING BARS TO BE #5.
- GRATE TO BE INSTALLED SO SLOTS WILL DRAIN WATER TOWARD THE INLET THROAT.
- MINIMUM HEIGHT OF PIPE DIA + 2'-0" WHEN PIPES ARE LOCATED UNDER EXTENDED SLOT OF INLET.
- DUMP NO WASTE DRAINS TO WATERWAYS IS REQUIRED ON ALL D-2 GRATES. LOCATION OF LETTERING MAY VARY BY MANUFACTURER.
- MINIMUM HEIGHT OF PIPE DIA + 2'-0" WHEN PIPES ARE LOCATED UNDER EXTENDED SLOT OF INLET.
- DUMP NO WASTE DRAINS TO WATERWAYS IS REQUIRED ON ALL D-2 GRATES. LOCATION OF LETTERING MAY VARY BY MANUFACTURER.

**STANDARD CURB DROP INLET**  
12" - 24" PIPE; MAXIMUM DEPTH (H) - 9"



2016 ROAD & BRIDGE STANDARDS

ROAD AND BRIDGE STANDARDS  
SHEET 1 OF 2

REVISION DATE

104.06

233  
308

233  
302

2016 ROAD & BRIDGE STANDARDS

2016 ROAD & BRIDGE STANDARDS

ROAD AND BRIDGE STANDARDS  
SHEET 2 OF 2

REVISION DATE

104.04

2016 ROAD & BRIDGE STANDARDS

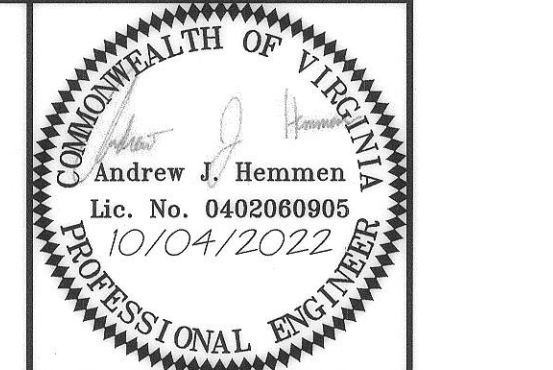
NOTES:

- MANHOLE TO MEET CURRENT REQUIREMENTS OF ASTM C-478.
- CONCRETE TO BE 4000 PSI MINIMUM COMPRESSIVE STRENGTH.
- TAPERED JOINT WITH DOUBLE BUTYL RUBBER SEALANT, ASTM C-990.
- ALL MANHOLE TO PIPE CONNECTIONS SHALL BE MADE UTILIZING AN A-LOK BOOT CONNECTION, OR APPROVED EQUAL, INSTALLED AT THE FACTORY.
- DROP MANHOLES REQUIRED FOR SANITARY DROPS 2'-0" OR GREATER.
- ALL MANHOLES ARE TO BE FURNISHED WITH IS-1 AND ST-1.

TOWN APPROVAL

TOWN PLANNER: *[Signature]* 6/21/23  
DATE: 6/21/23

TOWN PLANNER ENGINEER: *[Signature]* 6/21/23  
DATE: 6/21/23



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SITE AND UTILITY DETAILS

**PATRICK HENRY DRIVE BUS STOP**

PRICES FORK MAG. DISTRICT, BLACKSBURG, MONTGOMERY COUNTY, VIRGINIA

REVISIONS

DESIGNED BY: AJH

DRAWN BY: MJR

CHECKED BY: QBH

SCALE: NO SCALE

DATE: 10/04/2022

PROJECT NUMBER: 2102060

C502

L-2045