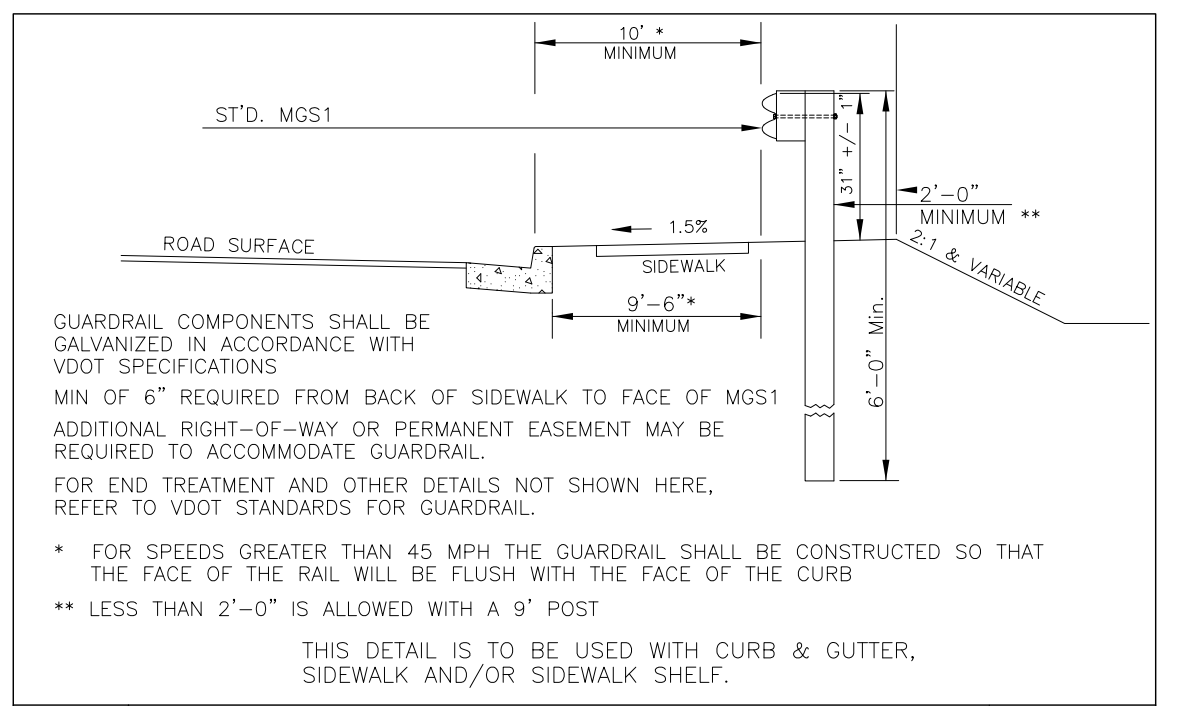


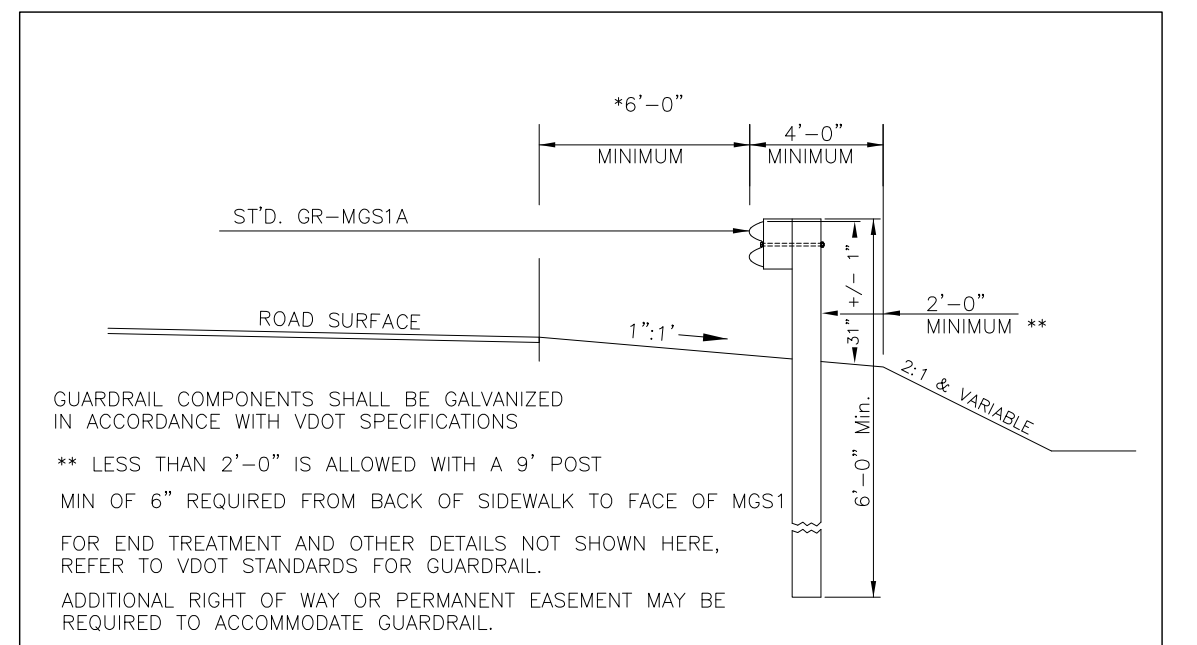


STANDARD CONSTRUCTION NOTES AND DETAILS

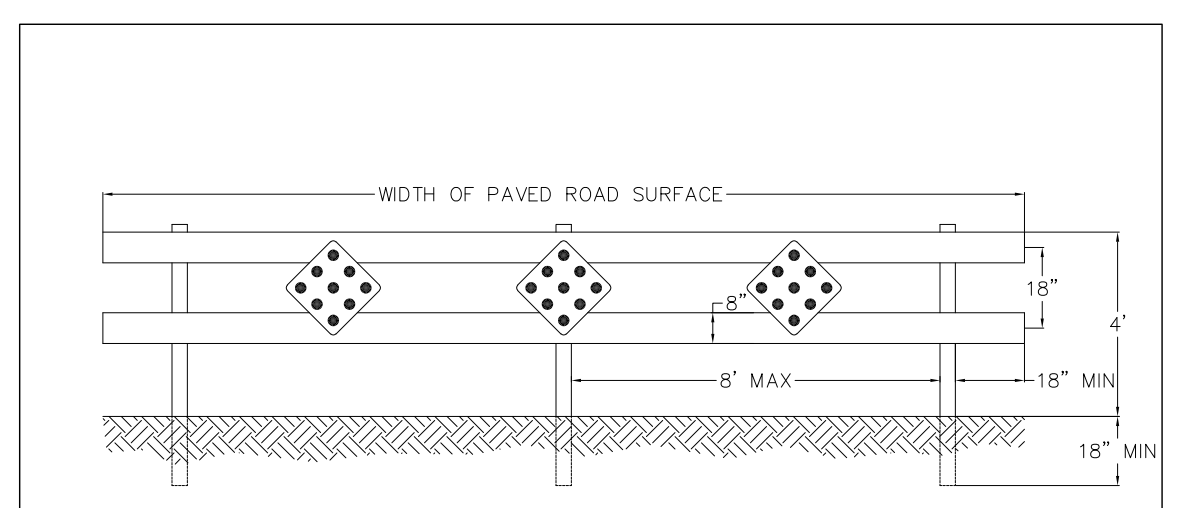
REFER TO HENRICO COUNTY
DESIGN MANUAL FOR ADDITIONAL DETAILS



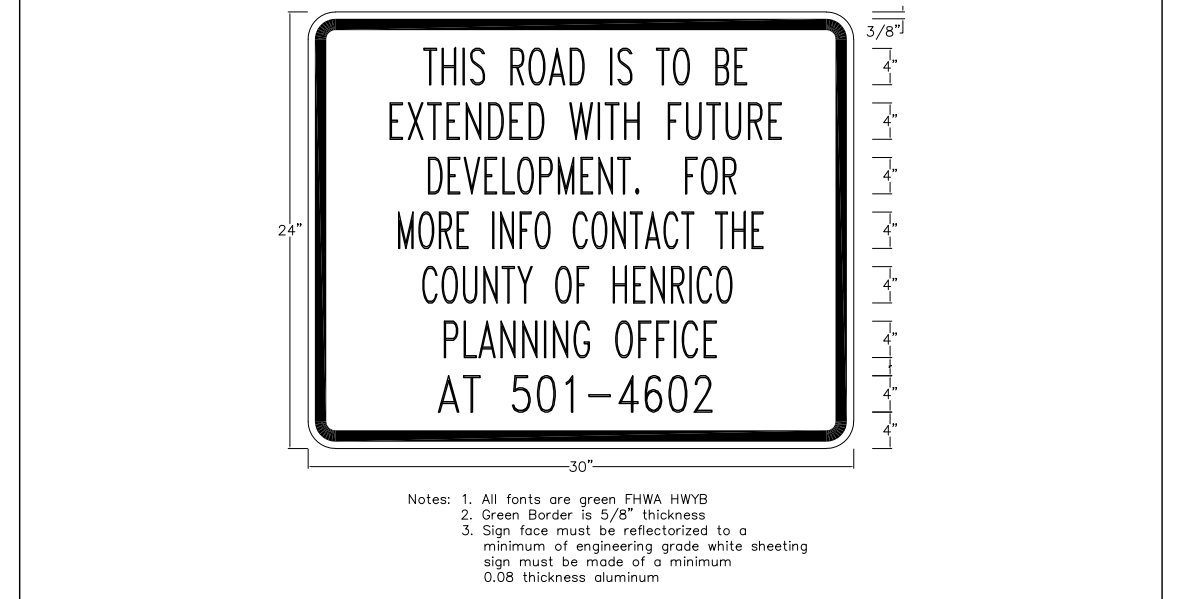
GUARDRAIL DETAIL WITH CURB & GUTTER
September 1, 2021
C-16.DWG



GUARDRAIL DETAIL WITHOUT CURB & GUTTER
September 1, 2021
C-17.DWG



END OF ROAD BARRICADE
September 1, 2021
C-27.DWG



ROAD EXTENSION SIGN
September 1, 2021
C-25.DWG

- ### GENERAL NOTES:
- All construction and materials shall be in accordance with the current Virginia Department of Transportation Road and Bridge Specifications, Virginia Department of Transportation Road and Bridge Standards and Henrico County Specifications and Standards where applicable.
 - Incidental concrete must be Class A3 in accordance with VDOT specifications.
 - A permit must be secured from Henrico County Department of Public Works before any work is performed within an existing right-of-way easement.
 - The Henrico County Department of Public Works must be notified at least 24 hours prior to beginning any construction work.
 - The contractor shall notify the Henrico County Department of Public Utilities prior to doing any utility work must be notified at least 24 hours prior to beginning any construction work.
 - The location of existing utilities, as shown, is approximate. The contractor shall verify the location of existing utilities prior to any construction work.
 - A Permit must be obtained from the Virginia Department of Transportation for any work performed within the State right-of-way.
 - The contractor shall notify "Miss Utility" at 1-800-552-7001 prior to any construction work in this area.
 - When it appears that the proposed work may have some impact to adjacent private or commercial properties, the applicant must inform the property owners of the proposed work and keep them apprised of time schedules, delays, impacts, changes in pedestrian and vehicle access or traffic patterns and final restoration plans.
 - When a temporary cul-de-sac is no longer required due to a road extension, the developer of the road being extended is responsible for removing the temporary cul-de-sac and extending the road and property components (curb and gutter, gravel driveways, paved driveways, sidewalks, mailboxes, etc) to the new road section and re-grading areas to finished contours acceptable to the adjacent property owners and to Henrico County.
 - No driveway access points shall be allowed within the radius public road section.
 - When driveways are located within roll face curb and gutter, transitions to a drop inlet, curb cuts and aprons are required.
 - Prior to the issuance of any building permits, all signs and barricades for dead end stub roads must be in place.
 - 21-B backfill is required for all utility trenches placed in new roads after 21B stone has been placed.

- ### CURB AND GUTTER
- All curb and gutter and storm sewer/inlets located within the existing County right-of-way shall be staked by the County upon written request being made to the County Engineer or by calling 501-4619.
 - All curb and gutter shall be Henrico County standard curb and gutter, except as noted.
 - This plan establishes curb and gutter elevations along the public right-of-way. The County reserves the right to modify the proposed grades, if necessary.
 - All curb and gutter in the County right-of-way must be wet curb and gutter. The use of dry curb and gutter is prohibited in the County right-of-way.
 - The transition from standard six (6) inch curb to roll-faced curb shall be at the intersections of the point of curvature (PC) of curb returns.
 - Where sidewalks are present or proposed, all driveways must be concrete from the back of curb to at least the rear of the sidewalk. An acceptable cross slope for all improved pedestrian facilities must be maintained across all entrances.
 - Class 57 stone must be placed under all curb and gutter and must extend one foot beyond the back of the curb.
 - CG-12's must be installed at curb returns where there is existing or proposed sidewalks. Depressed curb no longer allowed. CG-12 ramps shall be provided at all locations where an existing or proposed pedestrian access route is not required to be improved for a curb ramp to be required.

- ### CONDITIONS FOR GUARDRAIL
- Guardrail is typically required on sections of roadway when any of the following conditions exist within the clear zone:
- A roadside parallel embankment (fill slope) of 3:1 or steeper and a depth of four feet or more.
 - A water hazard with a depth of two feet or more.
 - A ditch section with a depth of three feet or more (as measured from the near edge of pavement)
 - A fixed object (such as a culvert, pipe, headwall, retaining wall, bridge pier or abutment).
 - Other hazards as determined by the Traffic Engineer.
 - Additional right-of-way or permanent easements may be required to accommodate the guardrail in its entirety.
- All guardrail must be approved by the Department of Public Works and shown on the plans, including any necessary details, type, and lengths of roll.

- ### CITY GAS
- Bore or push gas under roads or paved entrances, unless otherwise approved prior to work.
 - Install gas boxes as far from the Edge of Pavement (E.P) as possible to facilitate future shoulder maintenance.
 - Replace paved, concrete and grass ditches as it was prior to disturbance.
 - Restore gravel entrances and parking areas in kind.
 - Restore cobblestone/ brick pavers entrances in kind.
 - Restore all areas affected by installation or maintenance repair of Gas main to pre-construction conditions.
 - Must have a pre-construction meeting at a minimum of 24hrs prior to the start of City Gas projects in Henrico County Right of way.
 - Contractor shall contact Henrico County Traffic Engineering to address traffic concerns and MOT approval prior to City Gas works projects start date. Off duty Police may be required as additional MOT requirements by Henrico County Traffic Engineering or the Henrico County Gas Inspector for the safety of the traveling public and the Contractor.
 - Open Cut trenching for gas main placement and pavement patching for service repair and connections in the Roadway/ travel lane shall be saw cut and backfilled with 21A stone in compacted lifts to approved asphalt replace depth or surface grade to allow for temporary patching the same day for the traveling public's safety.
 - Pavement restoration to include patching, mill and overlay shall be identified on the approved plan however field determination by the Henrico County Inspector can alter the approved plans to meet the conditions in the field to provide the best outcome for the area of work in the right of way.
 - All staging areas for City Gas Works construction and maintenance shall be approved by Henrico County assigned inspectors prior to use with signed agreements with property outside of the right of way. The contractor shall maintain the staging area's location and entrance during construction to Henrico County minimum standards.
 - New Subdivisions / Developments shall require installation of sleeves (conduit) for directional boring under new roads for future City Gas service connections prior to final paving operations of the project.

- ### DRAINAGE
- All storm sewer within the County right-of-way and easements must be ASTM C-76, Class III or better, reinforced concrete pipe with sealed joints in accordance with VDOT specifications.
 - Precast drop inlets are not permitted at locations where the grade of the adjacent curb and gutter is less than 1.5%. Precast drop inlets with flat inverts are not permitted in sag locations when the total length of the required throat opening exceeds six (6) feet.
 - All storm sewer within a County easement or right-of-way must have a minimum of four (4) inches of aggregate bedding material and must be backfilled in accordance with the detail on this sheet.
 - All drop inlets must have Type B noses.
 - Drop inlets on grade must be poured with the throat on the same grade as the adjoining curb and gutter.
 - #4 x 8" dowels must be placed at approximately 12" c-c in all areas adjacent to abutting concrete to prevent settlement.
 - When using non-concrete pipe for private areas, the connection to the structure in the County easement or right-of-way must be concrete. Non-concrete pipe must terminate in a concrete structure and continue concrete to the point where it ties into the County easement or right-of-way. All manholes and inlets must be concrete.
 - UD-4 underdrains are required along the entire length of all proposed roads and/or road widening within the public right-of-way unless waived by the Director of Public Works.
 - Irrigation is not permitted in the shoulder area within the County right-of-way unless specifically approved by the County Engineer.
 - CD-2 underdrains are required on all vertical sags.
 - UD-4 underdrains are required in all raised grass medians and islands within the public right-of-way.
 - The outlet end of all underdrains must terminate in drainage structures or daylight out of fill slopes with a standard EW-12 endwall placed at the outlet end of the underdrain. The invert elevation of the outlet end of all underdrains must be 1 foot above the invert of the receiving ditch/structure.

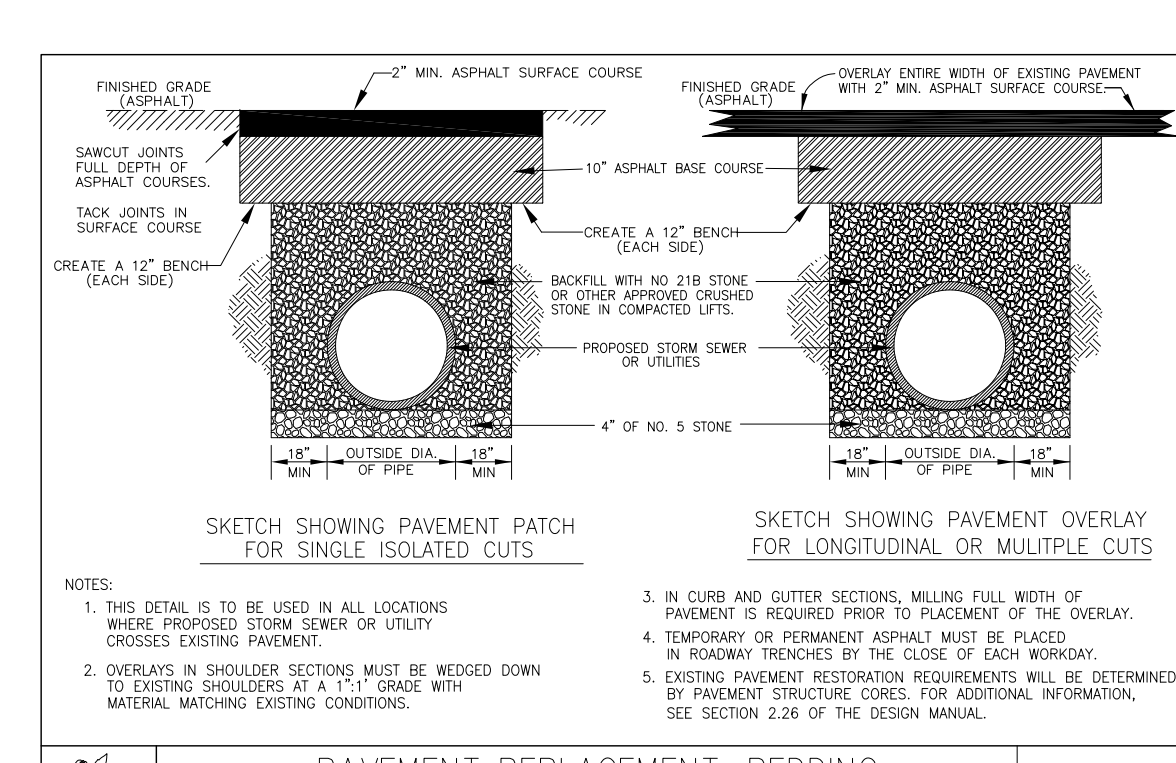
- ### GRADING
- The subgrade area shall be scarified to a depth of eight inches for a minimum of two feet beyond the proposed edges of the pavement on both sides (or from the curb and gutter) and compacted to a density of not less than 95 percent.
 - When materials which are unsuitable for foundation, subgrade, or other roadway purposes occur within the roadway limits, such materials must be excavated below the grade shown on the plans as directed by the Geotechnical Engineer or as approved by the Henrico County Construction Engineer and the areas must be backfilled with suitable material.
 - All storm sewer within a County easement or right-of-way must have a minimum of four (4) inches of aggregate bedding material and must be backfilled in accordance with the detail on this sheet.
 - A ten (10) foot wide pedestrian shelf is required behind all curb and gutter in the County right-of-way. The shelf must be cleared/constructed at the time of road construction, including the relocation of all power poles and other above ground obstacles.
 - All graded islands must be graded to 1/4":1" rise to minimize sight distance problems.
 - All areas to be filled within the buildable area (ponds, sediment basins, sediment traps, wetlands, etc.) must be backfilled with structural fill and compacted to 95% compaction.
 - All grading shown on lots must be done prior to building permit issuance.
 - The design and construction of basins must be in compliance with the general requirements for basins in the Virginia Stormwater Management Program Manual. A geotechnical engineer must certify that the construction compaction requirements have been achieved. BMPs for subdivisions will not be accepted for County maintenance until the geotechnical certification is provided and accepted by the Department of Public Works.

- ### SURVEY
- Curb and gutter, storm sewer and related drainage structures installed on existing County maintained roads will not be staked by the County.
 - The developer shall be responsible for all staking in the public right-of-way.
 - POD's started before September 1, 2021 can be staked by the Department of Public Works upon written request to Rob Setzer, County Surveyor via email set001@henrico.us.
 - Curb and gutter shall not be staked until all conflicts are resolved within the right-of-way.
 - If the developer requests staking by the Department of Public Works, the developer shall provide, alignment data and pertinent information sufficient to facilitate the construction staking of curb and gutter, storm sewer, and related drainage structures to the County Surveyor.

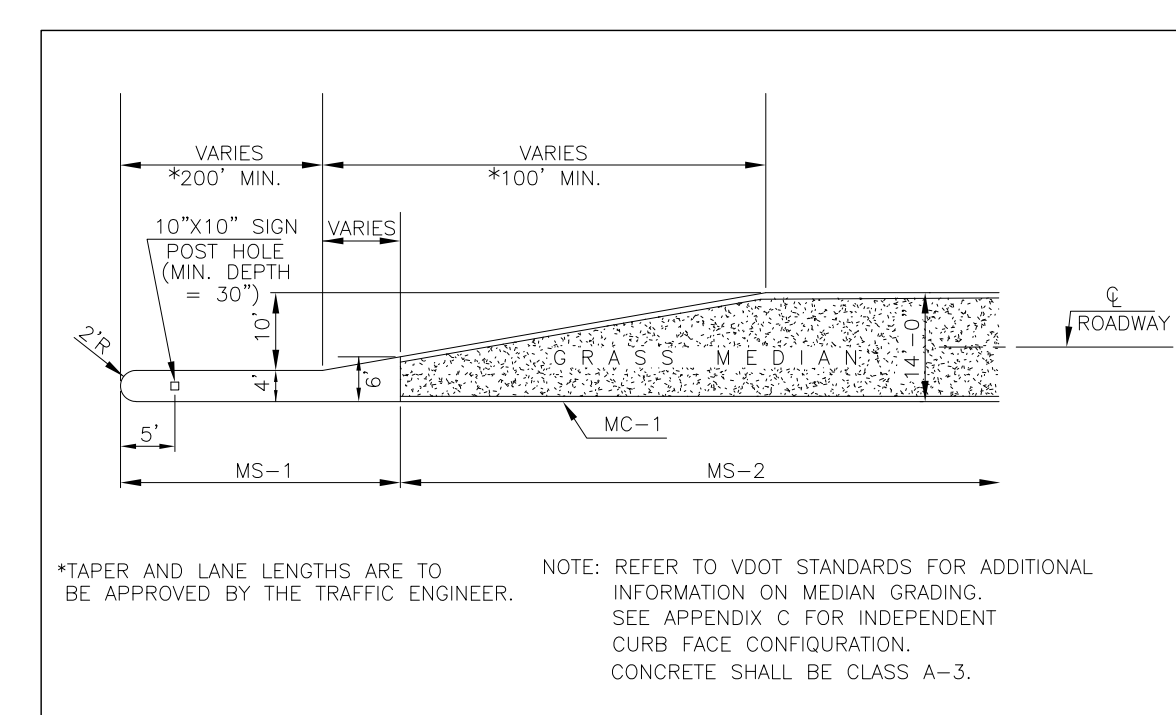
- All roadways must be cleared in the area of proposed construction prior to requesting staking from the County.
- The plan approval establishes the curb and gutter and storm sewer/inlet elevations along the public right-of-way. The County reserves the right to modify the proposed grades, if necessary.
- Right-of-way and baseline information must be established in the field and clearly tied to monuments/benchmarks prior to requesting stakeout by County.
- All utility poles, fire hydrants, and other above ground obstacles located within the public right-of-way and in conflict with the existing or proposed sidewalk shelf, curb and gutter, and/or the pavement widening shall be relocated at the developer's expense prior to staking the curb and gutter. Utility poles must not be located in conflict with existing or future sidewalk shelf areas or sidewalk locations.
- Curb and gutter and related drainage facilities on new subdivision roads will not be staked by the County. The developer shall be responsible for staking the curb and gutter for the new road in conformance with the approved plans. The Department of Public Works will perform inspections of the curb and gutter and road construction as the staking and construction proceeds.
- The minimum allowable grade for County roadways is 0.5% on a continuous grade. The minimum allowable grade on curb and gutter within a cul-de-sac is 1.0%. Curb and gutter, storm sewer and related improvements installed on VDOT maintained roads will not be staked by the County.
- An "As-Built" survey is required on all POD's and Subdivision. See Appendix A in the Public Works Design Manual dated September 1, 2021 for right-of-way survey "As-Built" requirements.

- ### PAVEMENT
- The pavement section is subject to change based on soil conditions at the time of construction, as determined by the Construction Engineer for Henrico County.
 - Any necessary pavement widening between the existing pavement and the proposed improvements is the responsibility of the developer.
 - All medians for turn lanes must be VDOT Std. MS-1. For turn lanes being constructed on existing roads, the old median must be removed entirely and the solid raised median poured on the asphalt base course in accordance with the standards for MS-1 Median. Stordard MS-1A or variations of the same will not be permitted.
 - Pavement sections for through lanes and turn lanes must be the same as the existing pavement section. These turn lanes must have underdrains.
 - No pavement open cuts are allowed on existing County maintained roads unless specifically approved by the Construction Engineer for Henrico County.
 - If utility connections are located outside of the pavement and right-of-way, no pavement disturbance is required then all utility crossings must be bored.
 - Soil tests and CBR information, with an appropriate pavement design, must be performed and made available to the Construction Engineer prior to subgrade approval.

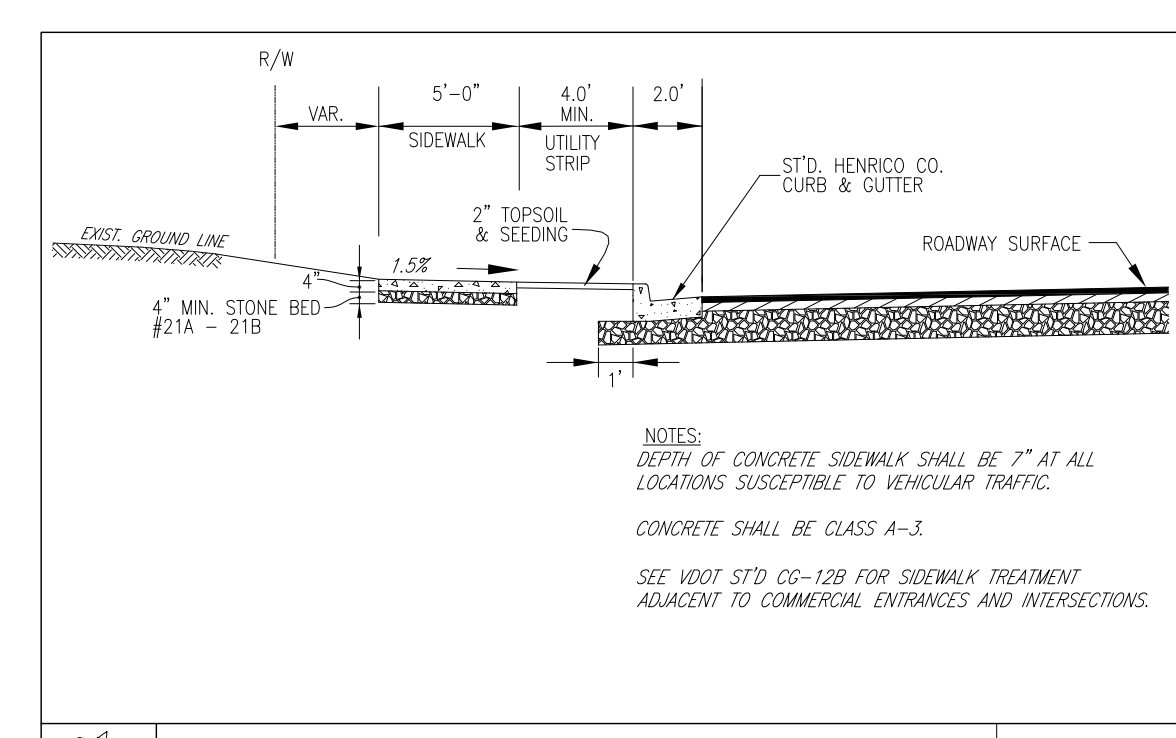
WHERE CONFLICTS EXIST, THE NOTES AND DETAILS ON THIS SHEET SUPERCEDE THE CURRENT VERSION OF THE HENRICO COUNTY DESIGN MANUAL.



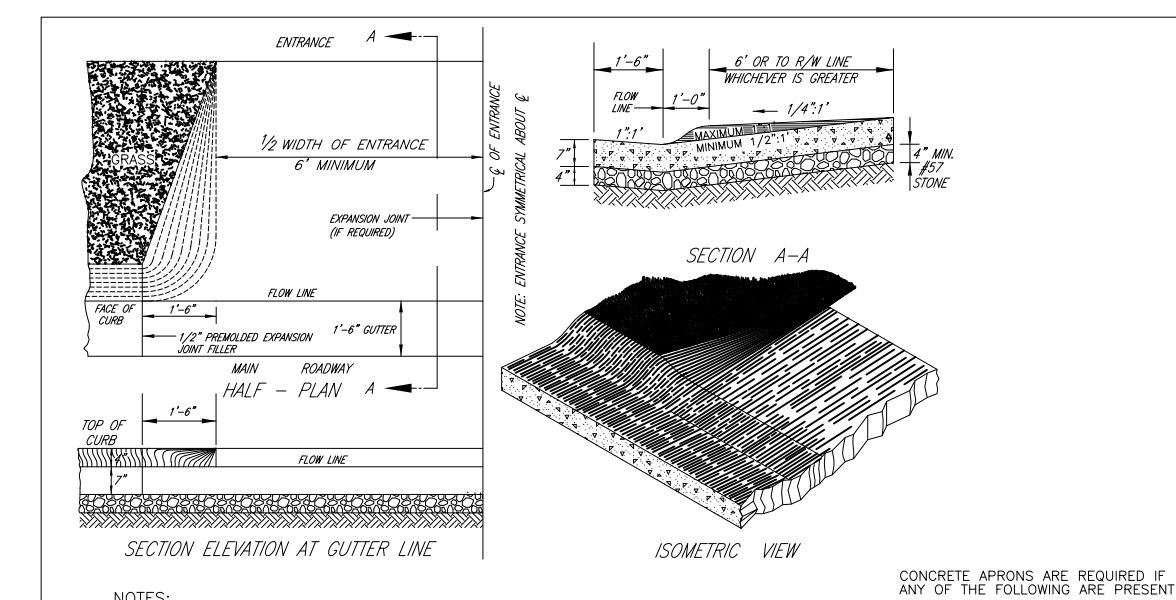
PAVEMENT REPLACEMENT, BEDDING AND BACKFILL FOR PIPE TRENCH
September 1, 2021
C-28.DWG



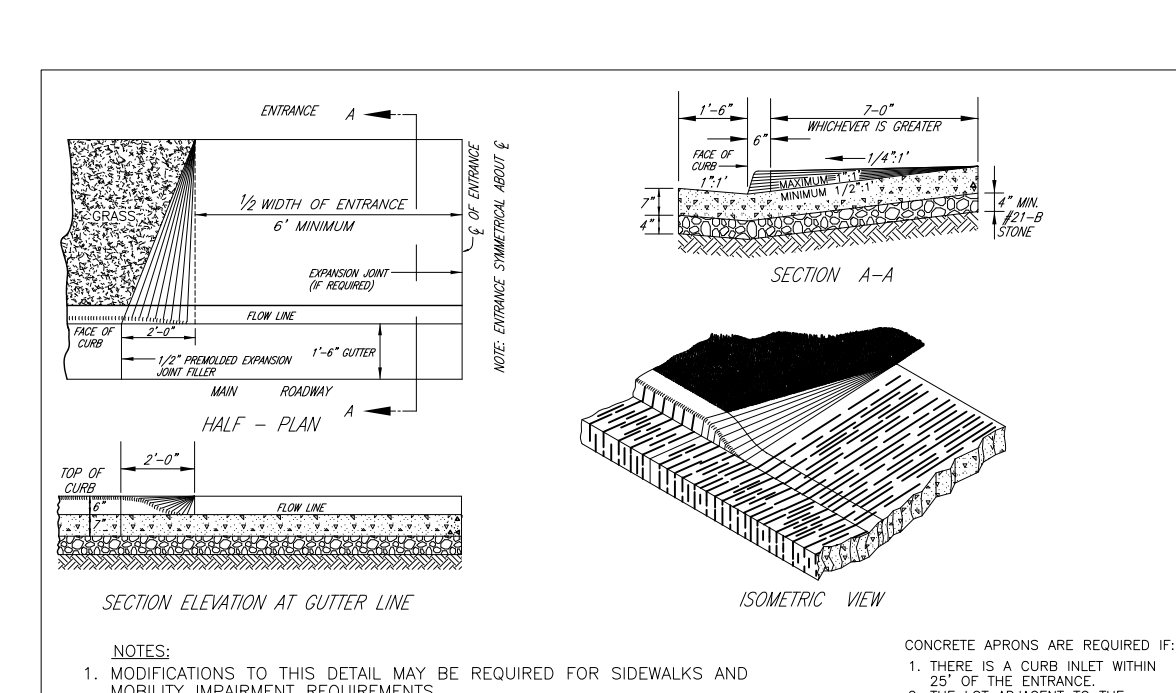
RAISED 14' MEDIAN w/LEFT TURN LANE DETAIL
September 1, 2021
C-18.DWG



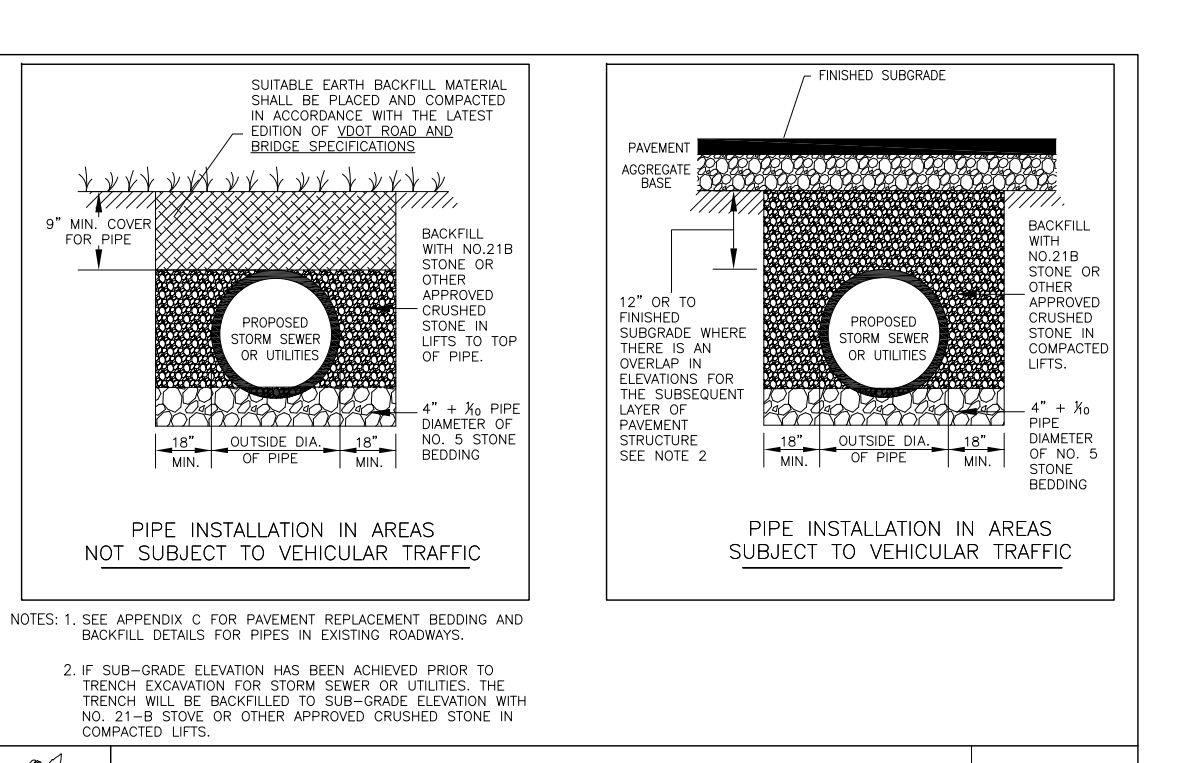
SIDEWALK DETAIL
September 1, 2021
C-11.DWG



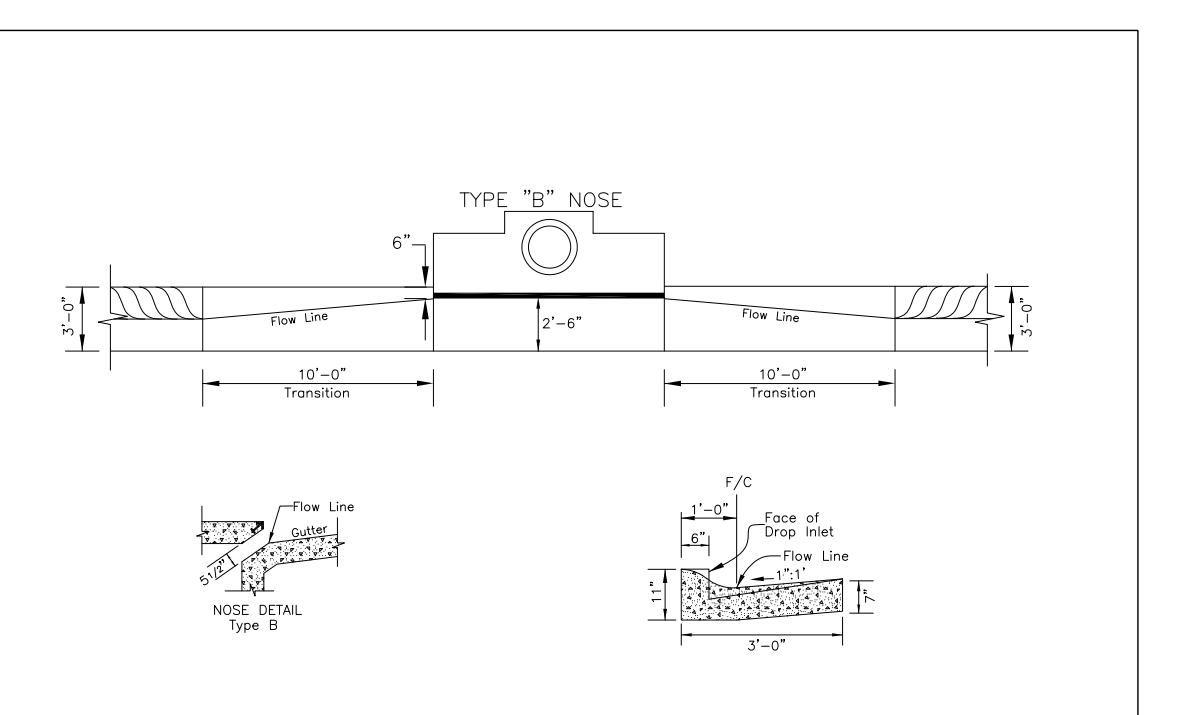
STANDARD ENTRANCE APRON (FOR ROLL FACE CURB & GUTTER)
September 1, 2021
C-8.DWG



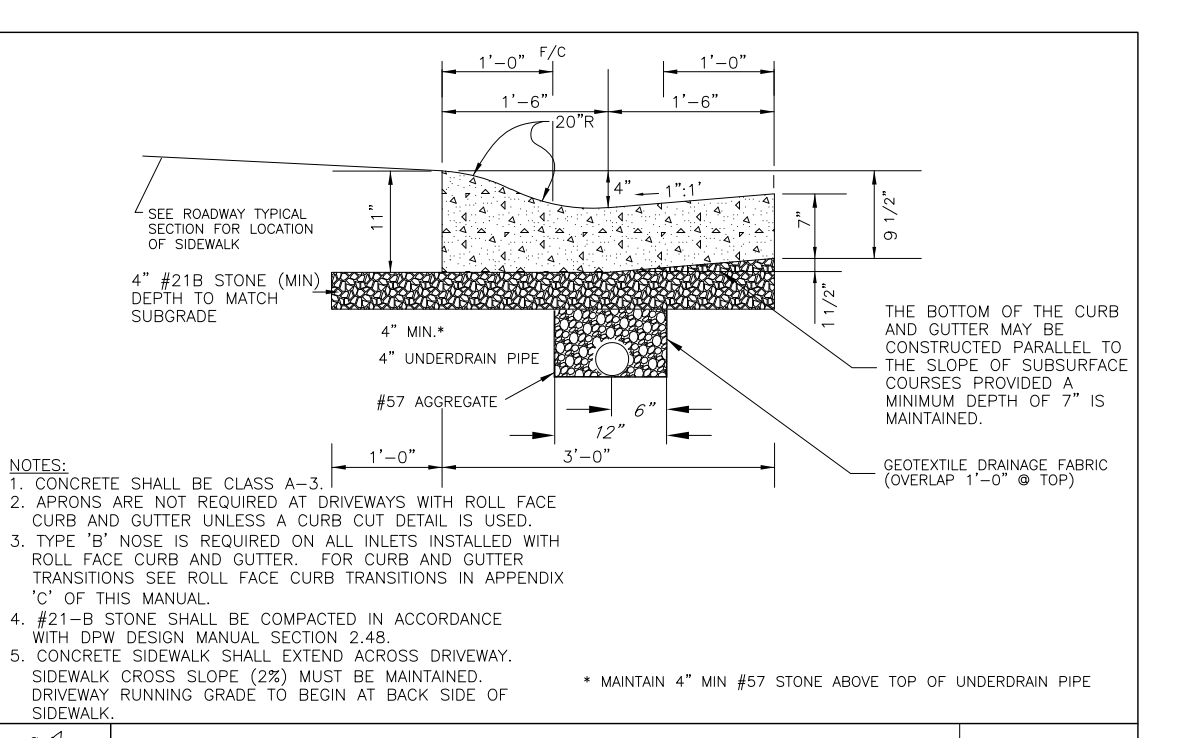
STANDARD ENTRANCE APRON (FOR RESIDENTIAL USE ONLY)
September 1, 2021
C-9.DWG



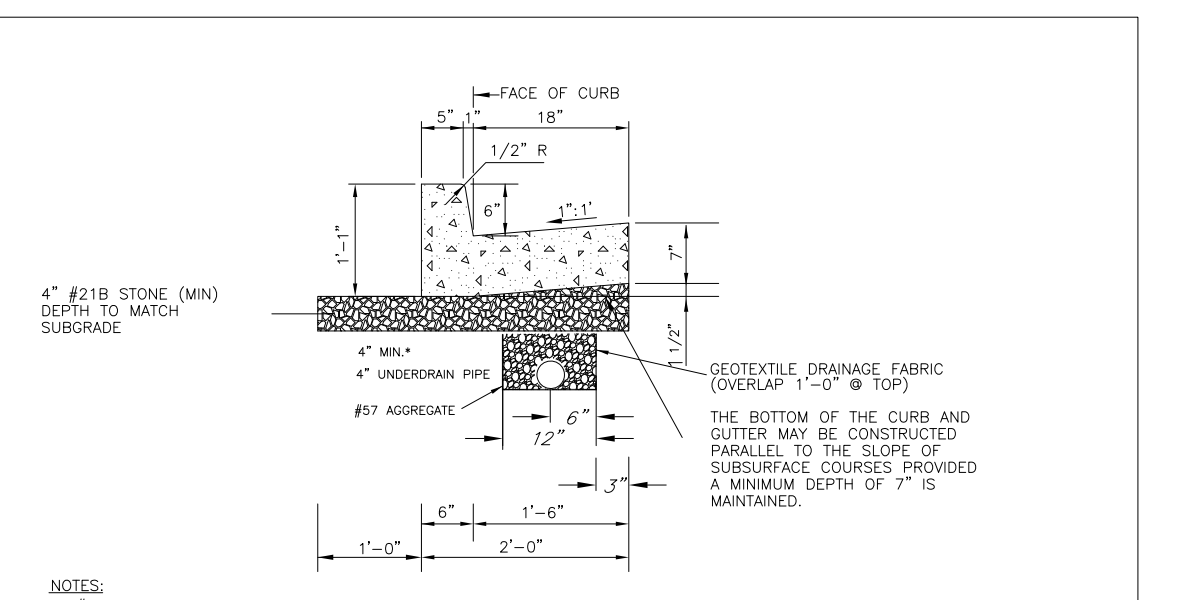
PIPE BEDDING & BACKFILL
September 1, 2021
C-30.DWG



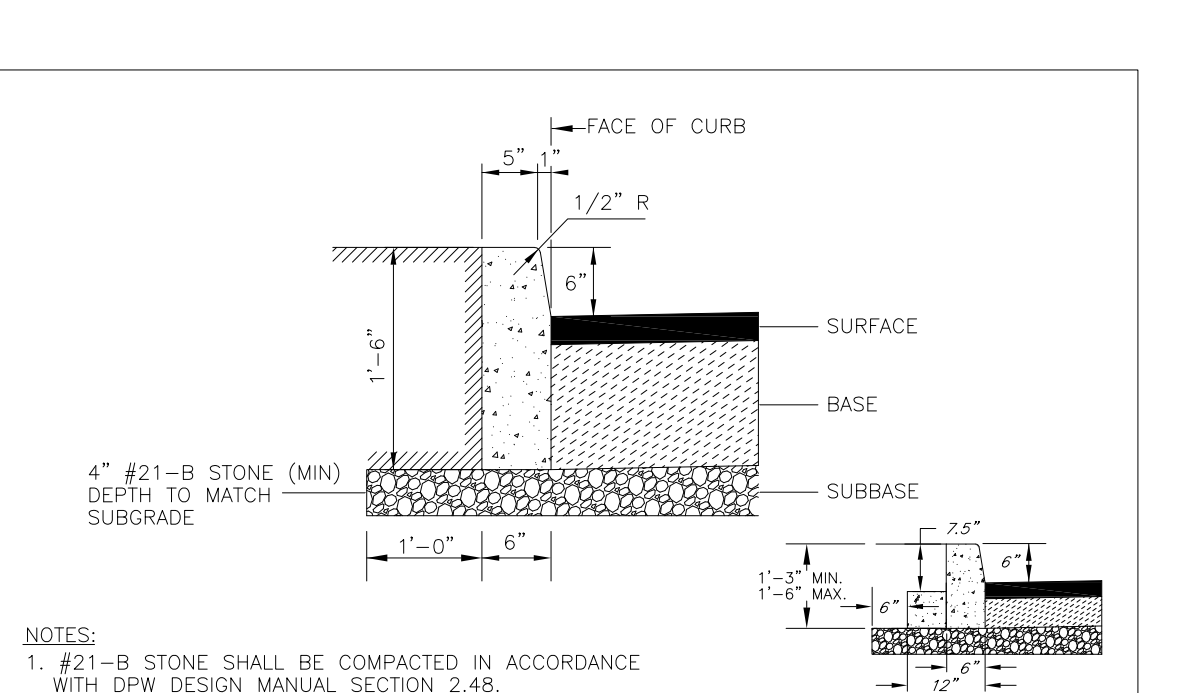
ROLL FACE CURB TRANSITIONS
September 1, 2021
C-7.DWG



ROLL FACE CURB AND GUTTER
September 1, 2021
C-5.DWG



CURB AND GUTTER
September 1, 2021
C-3.DWG



INDEPENDENT CURB
September 1, 2021
C-4.DWG