

CECIL COUNTY

DEPARTMENT OF PUBLIC WORKS



ROAD CODE
AND
STANDARD SPECIFICATIONS

April 25, 2002

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PART 1 GENERAL PROVISIONS

1.01 DEFINITIONS AND TERMS

Any terms, except as defined hereafter, which are used in this Code shall conform to the definition of terms given in the current edition of the Maryland Department of Transportation, State Highway Administration, Standard Specifications for Construction and Materials, and Interim Specification Addenda as defined therein, hereafter collectively referred to as SHA Specifications, or as given in other SHA Publications referred to in this Code.

AASHTO – American Association of State Highway and Transportation Officials.

AASHTO Policy – Most current edition of AASHTO’s Publication: A Policy on Geometric Design of Highways and Streets.

ADT – Average Daily Trips.

ASTM – American Society for Testing and Materials.

Administration – For any section of SHA Specifications and other SHA Publications referred to in this Code, the term Administration shall be construed to be the Cecil County Department of Public Works instead of the Maryland Department of Transportation, State Highway Administration.

Approved Plans – Construction drawings for private or public roads and their appurtenances, prepared in accordance with this Code and approved by the Department of Public Works.

Closed Drainage System – A system consisting of pipes, catch basins and manholes, by which stormwater runoff is collected and directed to a specific destination.

Commercial Road – Any road which lies within or is contiguous to any area which has been recommended or approved for any class of commercial use in any zoning or master highway plan approved by the County Commissioners of Cecil County.

Commissioners – The Board of County Commissioners of Cecil County.

Consultant – An engineer or engineering company responsible for preparing the road construction plans.

Contractor – The party of the second part to the Contract; the individual, partnership, firm or corporation undertaking the execution of the work under the terms of the Contract and acting directly or through his, their, or its agents or employees.

County – Cecil County, Maryland.

County Commissioners – The Board of County Commissioners of Cecil County.

Cul-de-sac Road – A dead end road provided with a cul-de-sac at the end to facilitate turnaround of traffic.

Dedication Plat – Any plat conforming to law, duly recorded among the land records of the County which describes one or more rights-of-way intended to be dedicated to public use.

Department – The Cecil County Department of Public Works.

Design Storm Frequency – Time interval in years at which a storm occurrence has a chance to exceed or equal the storm of specific duration and intensity used in design or drainage facilities.

Developer – The person or organization proposing to develop, developing, or obtaining a building permit for a previously undeveloped parcel of property.

Director – Director of the Cecil County Department of Public Works or his duly authorized agents.

Drainage Area – The delineated areas that currently contribute or are proposed to contribute runoff to a specific location or point.

Drainage Structure – Includes culverts, bridges, storm sewers, catch basins, canals, ditches, sub-surface drains and any structures or water-courses designed to carry off surface or other water.

Dual Lane Road – Any road which has two separate roadways divided by an island or grass plot, and designated for one-way traffic in each roadway.

Easement – A right acquired by public authority to use or control property for a designated public purpose.

Emergency Overtime Inspection – Inspection of work that, in the sole determination of the Department, must continue beyond normal inspection hours to avoid substantial inconvenience, provide for safety of the public, or provide for a substantially better work product.

Engineer – Director of the Cecil County Department of Public Works or his duly authorized agent ~~representative~~.

Federal Road – A road that is operated and maintained by the Federal Government.

Freeboard – Vertical elevation between the design high water level and top of bank.

Groundwater – Water constrained in soil or rocks below the ground surface.

Industrial Road – Any road which lies within or is contiguous to any area which has been recommended or approved for any class of industrial use in any zoning or master highway plan approved by the County Commissioners of Cecil County.

Inspector – A representative of the Department authorized to make any or all necessary inspections of work performed and material furnished by the Contractor.

Inundated – Submerged under water.

MD E&S Manual – Most current edition of Maryland Standards and Specifications for Erosion and Sediment Control.

Maintenance – To preserve roadways and related facilities in a safe and workable condition.

Maintenance Agreement – Agreement executed between an Owner and the Board of County Commissioners of Cecil County covering terms and conditions related to post-construction maintenance of private roads by the Developer.

Maintenance Bond – A financial guarantee posted by a Developer with the County Commissioners for a road that has been completed in accordance with the approved plans and so certified by the Department, that guarantees the road will be maintained by the Developer for a period of one year.

Major Collector Road – Any road which serves to carry traffic to or from several minor roads and connects them to other collector roads or to arterial highways, usually does not serve the primary function of providing access to abutting properties, and serves more than 300 lots but not more than 500 lots or handles a traffic volume of more than 3,000 ADT but not more than 5,000 ADT.

Median Lot Frontage – The lot frontage which is in the middle of the group, i.e., has as many lot frontages larger as it has lot frontages smaller than itself. Distinguished from average or mean.

Mini Road – A road serving not more than 5 interior lots or not more than 7 lots if a maximum of two corner lots have frontage on state or county maintained roads. All lots, including corner lots, must access the Mini-Road.

Minor Collector Road – Any road which serves to carry traffic to or from several mini and minor roads, and connects them to other collector roads or to arterial highways, and serves 50 to 300 lots or handles a traffic volume of 500 to 3,000 ADT.

Minor Road – Any road which is primarily used to serve local traffic, or handles a traffic volume of less than 500 ADT.

Open Drainage System – A system of drainage ditches or swales by which stormwater runoff is directed to a specific location.

Permanent Maintenance Easement – An easement providing permanent right to the Department and other applicable agencies for maintenance of adjacent road and other facilities located in the easement.

Permittee – A person, firm or corporation who has applied for and holds a valid permit in full force and effect, issued by the Director of the Department of Public Works, authorizing construction in a public or private right-of-way.

Person – Includes an individual, association, firm, partnership, or corporation but does not include any governmental agency, whether County, Federal, State or Municipal.

Plans – The drawings or reproductions thereof, pertaining to the construction of the road and its appurtenances.

Plans, As-built – Plans prepared by a surveyor or professional engineer after construction confirming or specifying changes to dimensions, elevations, and other aspects shown on the original plans.

Private Road – Roads intended to provide access to newly developed subdivision lots, constructed to standards established in this Code and intended to be maintained by residents of the served subdivision with no assistance or funds from the tax revenues generated by the State or County.

Professional Engineer – As defined by the State of Maryland, Department of Labor, Licensing and Regulations, Division of Occupational and Professional Licensing.

Public Works Agreement – Agreement executed between Developer and the Board of County Commissioners of Cecil County covering terms and conditions related to construction of roads in approved developments.

Residential, Detached Lots Road – A road serving traffic from primarily residential detached lots.

Residential, Townhouse Road – A road serving traffic primarily from townhouse lots.

Right-of-Way – A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to a highway and usually intended for fee-simple ownership.

Road – Includes street, highway, avenue, lane, alley and viaduct, or any segment or part of the length thereof and is a general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

Road Class – Road class to be determined as either mini, minor, minor collector, or major collector in accordance with the respective definitions given in this section.

Road Type – Road type to be determined as residential (townhouse or detached), commercial, industrial, or dual lane roads in accordance with the respective definitions given in this section.

SHA Highway Drainage Manual – Most current edition of the Maryland SHA Drainage Design Manual.

SHA Specification – Maryland SHA, Standard Specifications for Construction and Materials (most current edition) and interim specification addenda as specified therein.

SHA Standards – Most current edition of the Maryland SHA Book of Standards, Highway and Incidental Structures.

SHA State Highway Administration – The Maryland Department of Transportation.

Sight Distance, Passing – Length of a roadway ahead necessary to pass a vehicle without meeting an oncoming vehicle. It is applicable only to two-lane, two-way highways.

Sight Distance, Stopping – The distance required to allow a driver traveling at the design speed to stop before coming upon an observed object. It is assumed the driver's eyes are 3.50 feet above the roadway and the object observed is at a height of twenty-four (24) inches. Stopping sight distance includes the distance covered during the driver's reaction time as well as during the deceleration period.

Specification – Specifications for construction and material as included in this Code.

Standards – Design and construction standards as included in this Code.

State – State of Maryland.

State Road – A road that is operated and maintained by the State.

Subdivision – A division of land as defined in the Cecil County Subdivision Regulations.

Sump – A point of comparatively low elevation which cannot be drained by means of surface flow.

Superelevation – Roadway banking to counter the effects of centrifugal force when a vehicle travels in a circular path.

Variance – A modification of the requirements of this Code granted by the Director.

Warping – Minor modification of pavement grades in isolated instances such as at intersections, around structures, etc.

1.02 APPLICABILITY

- A. This Code shall apply to all roads, including private roads, within the County handling a traffic volume of not more than 5,000 ADT or traffic from not more than 500 residential lots other than: 1) roads lying within the limits of any incorporated city, town or village of the County or which may hereafter be created, insofar as the city, town, village or taxing area has the authority to enact or adopt regulations on the subject matter of this Code; 2) State roads; and 3) Federal roads. The design of roads intended to serve more than 500 lots or 5000 ADT shall be done in accordance with the applicable AASHTO & SHA standards in lieu of the standards set forth in this Code.
- B. Parents or grandparents may deed to a son, daughter or grandchild approved parcels of ground for the purpose of building a structure to be used as this family's primary residence without road frontage on a State or County road or a road constructed to County standards. The right-of-way used for ingress and egress to the parcel must be recorded in the Land Records of Cecil County. Said right-of-way is to serve a maximum of two lots. Perpetual maintenance of the right-of-way is to be provided by the lot owners; the instrument used to establish the perpetual maintenance program is to be a standard document developed by Cecil County, executed by the landowners, and recorded in the Land Records of Cecil County. After the new parcel has been created, the children or grandchildren cannot sell or transfer the parcel for a period of five (5) years.

1.03 PURPOSE

The purpose of this Code is to establish design and construction criteria for the planning, designing, construction, improvement, reconstruction, and repair of roads and related appurtenance, for roads falling under the jurisdiction of this Code pursuant to Section 1.02.

1.04 AUTHORITY

The Authority for this Code is set forth under Article 25, Part 2 of the Annotated Code of Maryland.

1.05 GENERAL PROVISIONS

- A. Where a drainage study indicates that a minimum right-of-way width as established in this Code is inadequate for proper drainage of a particular road, the County Commissioners may require such additional right-of-way as is found necessary for such drainage purposes; provided, that such requirement is made prior to the final approval and recording of a dedication plat among the land records of Cecil County.
- B. Whenever drainage structures are required for any particular class of road, such drainage shall be installed or constructed as found by the County Commissioners to be necessary or appropriate after a preliminary drainage study has been approved by the Department of Public Works in accordance with design standards and all applicable specifications.
- C. Where this Code is silent, design may be based upon AASHTO's Policy on Geometric Design of Highways & Streets (latest edition) and construction details shall be governed by SHA's Standard Specifications for Construction & Materials (latest edition).

1.06 VARIANCES

- A. A variance of the requirements of this Code shall only be granted upon demonstration by the applicant that exceptional circumstances exist that were not the result of actions taken by the applicant which preclude the applicant from adhering to the requirements of this Code, or where the granting of the variance will contribute to a better overall design of a road or other facilities subject to the requirements of this Code. A variance request shall be submitted in writing and shall be accompanied by any evidence, data or any other material that may be required by the Director for consideration of the variance. The burden of presenting sufficient evidence remains with the applicant seeking the variance.
- B. In the granting of the variance, the Director may prescribe such conditions or safeguards as he deems necessary and appropriate to comply with the provisions

of this Code. Violations of such conditions or safeguards when made a condition of the granting of the variance shall be deemed a violation of this Code and shall be punishable as provided herein.

C. Any party aggrieved by the decision of the Director regarding a variance may appeal said decision to the Commissioners.

1.07 PENALTY

A. Any person, firm or corporation intentionally violating any provisions of this Code shall be guilty of a misdemeanor and upon conviction thereof shall be liable to a fine not exceeding \$500 or imprisonment for a period not exceeding thirty (30) days in the Cecil County jail or to both fine and imprisonment for each offense; and it shall be the duty of the State's Attorney of the County to prosecute all persons accused of violating the provisions of this Code. Each day such violation shall be permitted to exist shall constitute a separate offence. The Director shall note all violation of, or failure to abide by, the terms of this Code by Service of a Stop Work Order on any person, firm or corporation in violation.

B. In addition to other remedies, the Commissioners may institute injunction, mandamus, abatement or other appropriate action or proceedings to compel compliance with the provisions of this Code.

1.08 STOP WORK ORDER

Upon notice of the Director of Public Works or his designee that the work on any premises is being performed contrary to the provisions of this chapter or in an unsafe and dangerous manner, all work authorized or permitted by the Department shall be immediately stopped. The stop work order may be orally issued, but in all such cases must thereafter be confirmed in writing either by letter or posting the property. The Director or his designee shall endeavor to notify the owner of the property involved, or the owner's agent, or to the person doing the work; and shall state the conditions under which work will be permitted to resume.

1.09 CONFLICT OF LAW

If provisions of this Code conflict with any other ordinance, code, regulation or rule, promulgated by the County or another governmental body having jurisdiction on the subject matter of this Code, the more restrictive or higher standards shall prevail.

1.10 ALTERNATE STANDARDS

Upon findings by the Director that the Standards and Specifications contained in this Code are not feasible or practical for a particular project, he may require such alternate or additional Standards and Specifications in accordance with good engineering principles as may be deemed necessary.

1.11

INTERPRETATIONS AND CLARIFICATION

A. The Director shall make all necessary interpretations as to the meaning and intent of the standards contained in this Code and the Approved Plans, and shall give all advice and assistance as contemplated therein or thereby, or in every case in which a difficult or unforeseen condition arises during the prosecution of the work. Should there be any discrepancies in or between, or should any misunderstanding arise as to the import of anything contained in the standards and the Approved Plans, the interpretation of the Director shall be final and binding. Any errors or omissions in the standards contained in this Code or on the Approved Plans may be corrected by the Director when such corrections are necessary for the proper fulfillment of their intent. The Director may, where appropriate, refer questions to the Designer of record.

B. The Director shall in all cases determine the amount, quality and acceptability of the work and shall decide all questions in relation to said work. His decision and estimate shall be final and conclusive.

C. Interpretations will be rendered by the Director as promptly as possible but should delay occur for any reason, the Contractor shall have thereby no claim for damages.

1.12

AMENDMENTS

Any amendments to the provisions of this Code, except for the variances or alternate standards for a specific project as discussed in Sections 1.06 and 1.10, respectively, must be approved by the Commissioners by means of adopting a resolution. Prior to making a decision, the County Commissioners shall hold a public hearing regarding the proposed amendment. The date and place of all public hearings shall be advertised for two (2) consecutive weeks, at least fifteen (15) days prior to the hearing in at least one (1) newspaper of general circulation.

1.13

AVAILABILITY OF CODE

A. A copy of this Code and the publications referred to in this Code will be kept at all times at the office of the Commissioners, and at the office of the Director.

B. Copies of this Code can be purchased at a price established by the Director. Copies of this Code may also be made available on the County's internet web site at the discretion of the Director.

C. Copies of the Publications referred to in this Code shall be purchased from the agencies who are responsible for selling them.

1.14

SEVERABILITY

A. If any portion of this Code is held invalid or unconstitutional by a court of competent jurisdiction, such portion shall not affect the validity of the remaining portions of this Code. It is the intent of the Board of County Commissioners of

Cecil County that this Code shall stand, even if a section, subsection, sentence, clause, phrase, or portion may be found invalid.

B. If provisions of this Code conflict with any other ordinance, code, regulation or rule promulgated by the County or another governmental body having jurisdiction on the subject matter of this Code, the more restrictive or higher standards shall prevail.

1.15 EFFECTIVE DATE

This Code shall become effective 90 days after its adoption by the Commissioners. Administratively complete plans submitted in that 90 day time frame will be governed by the Cecil County Road Code dated October 1973 (as amended), provided such plans are approved within 270 days of adoption of this Code.

PART 2 RIGHT-OF-WAY

2.01 STANDARD REQUIREMENTS

The right-of-way required for a road depends on its class and type, and shall meet the minimum requirements specified in Table 2.01.01 below and as depicted in the standard cross-section Standard Details R-1 through R-12.

**Table 2.01.01
Minimum Right-of-Way Requirements**

Road Use and Type/Road Class	Minimum Right-of-Way Width (Feet)				
	Residential		Commercial	Industrial	Dual Lane/Divided (All Uses)
	Detached Lots	Townhouses			
Mini	36 ⁽¹⁾	N/A	N/A	N/A	N/A
Minor	50 ⁽²⁾	30 ⁽⁵⁾	60 ⁽²⁾	N/A	N/A
Minor Collector	60 ⁽²⁾	38 ⁽⁵⁾	60 ⁽²⁾	60 ⁽²⁾	76 ⁽²⁾
Major Collector	60 ^{(3),(4)}	60 ^{(3),(4)}	60 ^{(3),(4)}	60 ^{(3),(4)}	80 ^{(3),(4)}

- (1) Dedication or reservation of wider right-of-way may be required or permitted to accommodate future expansion if applicable.
- (2) Right-of-way width can be reduced by 10 feet for curbed streets, upon approval by the Department, as shown on applicable detail sheets.
- (3) Direct access to subdivided lots prohibited.
- (4) For traffic volumes exceeding 5,000 ADT, right-of-way width to be increased as necessary to accommodate additional through lanes based on a design prepared by a Professional Engineer and approved by the Department. The design of such roads shall be done in accordance with all applicable AASHTO and SHA Standards in lieu of standards set forth in this Code.
- (5) Permanent maintenance easements of appropriate widths, as depicted on Standard Details R-2, 3, 4 and R-5 shall be provided on both sides for construction and maintenance of road, utilities, sidewalks, parking, etc. by the Department, utility companies, Homeowner’s Association, etc. as applicable.

2.02 STANDARD REQUIREMENTS (CUL-DE-SAC ROADS)

- A. The maximum length of cul-de-sac roads shall be established by the Cecil County Subdivision Regulations, or as modified by the Planning Commission.
- B. For roads serving residential areas, the right-of-way width and configuration within the area of influence of cul-de-sac and intermediate turnaround shall meet the design standards shown on Standard Details R-13 through R-17.
- C. For roads serving non-residential areas, the right-of-way width and configuration shall be determined based on a design prepared by the consultant and approved by the Department. The design shall adequately accommodate turning movements of the type of vehicles anticipated to use the road.

2.03 TEMPORARY TURNAROUNDS

For dead-end roads that are intended to be extended in the future, there shall be a temporary turnaround area with reflective barricade in accordance with the detail shown on Standard Detail R-18. Dead-end roads shall only be permitted in accordance with the Cecil County Subdivision Regulations. The length of a dead-end road shall not exceed the maximum length of cul-de-sac street as permitted by the Cecil County Subdivision Regulations, except where the dead-end road is part of a phased road network consistent with the Subdivision Regulations.

2.04 STANDARD REQUIREMENTS (INTERSECTIONS)

The right-of-way width and configuration within the area of influence of road intersections shall be determined based on a design prepared by the Consultant and approved by the Department. The design shall adequately accommodate all necessary auxiliary lanes, turning movements of the type of vehicles anticipated to use the road, and to accommodate minimum radii as specified in Section 3.07(A), measured to the inner edge of the pavement of the intersecting roads.

2.05 ADDITIONAL DEDICATIONS ALONG EXISTING ROADS

Projects abutting existing roads having right(s)-of-way less than the standard requirements and specified in Sections 2.01 through 2.03 shall dedicate additional fee-simple rights-of-way for those roads as necessary to meet the standard requirements. If the project owner has control over land abutting only one side of a road, then dedication shall be based on the standard requirements for the half right-of-way width. Applicants shall bear all costs associated with obtaining rights-of-way or easements necessary to accommodate required off-site improvements.

2.06 MAINTENANCE

After acceptance of the right-of-way and roads constructed therein, the Department shall be responsible for its maintenance with the exception of private roads. The responsibility of the Department shall, however, be limited to maintenance of pavement, curbs, drainage systems in their entirety, utilities owned and operated by the County, road signs, other appurtenances related to operation of the roads and grass surfaces.

The Department will be responsible for the snow plowing only if no other party (such as Homeowner's Association or owner of a non-residential project) has been assigned this responsibility, and the County has accepted the same. Snow plowing will not commence until the road is deeded to, and accepted by, the County.

Maintenance of any facilities located outside of the right-of-way or county easement will not be the responsibility of the Department. When maintenance of these facilities becomes necessary and the party responsible for the maintenance upon notification by the Department does not complete the work necessary, the Department may complete the work and bill the cost to the party responsible for maintenance.

The utilities and facilities that are located within the right-of-way with the Department's permission, but are not owned and/or operated by the County, shall be maintained by the parties who own and operate them. Any damage occurring to other utilities and/or facilities resulting from such maintenance shall be promptly repaired by the responsible party to the satisfaction of the Department and/or other parties as applicable.

2.07 MINIMUM CRITERIA FOR NON-CURBED ROAD

Non-curbed roads shall only be permitted where the minimum lot frontage of the lots served by the road is 75 feet. This provision does not apply to lots on mini-roads or cul-de-sacs, or pan handle lots.

2.08 STANDARD CROSS-SECTION DETAILS

The grading within the right-of-ways and construction of roads shall be completed in accordance with the applicable standard cross-section details, as depicted on Standard Details R-1 through R-17.

2.09 INTERSECTION SEPARATION

Intersection spacing between new roads constructed per this Code, or between a new road constructed per this Code and an existing road, shall be governed by the Cecil County Subdivision Regulations.

2.10 ACCESS POLICY

The following access requirements apply to new commercial or industrial uses which are subject to Site Plan review per the Cecil County Zoning Ordinance and

which proposed access onto a County roadway. More specifically, the access requirements apply to the distance between commercial and industrial access points, or the distance between a commercial and industrial access point and a County Road intersection.

Intersection spacing should provide sufficient distance to allow for the proper development of all necessary turning lanes, bypass lanes, and, if signalized, proper signal coordination. At a minimum, the following separation distances shall apply:

On other than Major Collector Roads	-	150 feet
On Major Collector Roads	-	200 feet

Driveways serving residential lots shall be located as far from existing intersections as possible, but in no case shall driveways be less than 75' from an intersection.

In addition to the above requirements, all proposed access facilities shall also meet the minimum sight distance requirements as specified for intersections in the AASHTO Policy. Further, no access shall be allowed on an acceleration or deceleration lane.

Exception(s) to the above standards may be considered by the Department if strict adherence to these standards will result in a land-locked existing parcel. However, before approval of an exception, the possibility of combining access of adjacent parcels may need to be evaluated by the applicant to the satisfaction of the Department.

2.11 SIGHT DISTANCE EASEMENTS

Sight distance easements shall be established by all new projects over areas as necessary to provide a clear line of sight in accordance with the minimum requirements specified in the AASHTO Policy for stopping sight distance on roads, and sight distance for crossing/turning maneuvers on intersections.

At road intersections, the sight distance easement at minimum shall include in all quadrants a triangular area formed by the intersection of two curbs (or edge of pavement) lines and a line joining the respective points on each of these lines distanced 25 feet from the point of intersection of minor roads, 40 feet from the point of intersection of two collector roads, and 40 feet from the point of intersection of collector and minor roads. See Standard Detail R-34. These requirements shall not be considered to reduce any of the AASHTO requirements as mentioned before.

The placement of shrubbery or plant materials or other visual barriers is prohibited in sight distance easements. Violations shall be removed by the party responsible for placement or the Department shall have full authority to remove them. The maintenance of the easement area such as grass cutting, etc. shall be the responsibility of the owner of the land on which the easement is located.

Grading within sight distance easements shall allow for 18” growth of grass to allow for delinquent maintenance.

2.12 PERMANENT MAINTENANCE EASEMENTS

Permanent maintenance easements shall be established by all new projects, as necessary, to allow maintenance by the Department without any hindrance of the roads and facilities that are to be maintained by the Department and are located either outside the right-of-way or along the right-of-way line. All permanent maintenance easements for sanitary sewers, storm sewers or water mains shall be a minimum of 20 feet in width and shall extend at least 10 feet on either side beyond the location of the facility to be maintained. Additional width may be required at the discretion of the Department. The general maintenance of the easement such as grass cutting, snow removal, etc. shall be the responsibility of the owner of the land on which the easement is located.

2.13 ADDITIONAL REQUIREMENTS FOR PRIVATE ROADS

- A. All private roads intended to serve newly subdivided lots in Cecil County are prohibited, except those approved, designed and constructed in accordance with the criteria and specifications for Private Mini Road.
- B. Road rights-of-way are to remain in a single ownership and deeded to the legally established Homeowner's Association at the time of approval by the County.
- C. In order to provide through traffic patterns with adjoining parcels of land, private roads, where required by the Planning Commission, must remain open at all times to the general public. All private roads must remain open at all times for service and emergency vehicles.
- D. Deed restrictions to be applied to each lot in the proposed subdivision, which must be submitted to and approved by the County Attorney, are to provide for perpetual maintenance of the roads and drainage system in the subdivision by the homeowners. Said deed restrictions are to be recorded at the same time the final plat is recorded. The Developer must maintain the roads until a minimum of eighty percent (80%) of the lots are transferred.

The required Homeowner's Association must have the legal authority to collect dues to be used for road and drainage maintenance, including the legal right to lien property for non-payment of dues.

- E. A statement clearly outlining the responsibilities of homeowners in the maintenance of roads and storm drainage systems must be approved by the Planning Commission and placed on the final plat.
- F. Any private mini-road greater than 5% slope shall be paved with two (2) inches of Base-Fine Hot Mix Asphalt and one (1) inch of Surface-Fine Hot Mix Asphalt.

All portions of private mini-roads located within the County right-of-way shall be paved.

- G. No private road may be deeded to the County unless it is improved to meet the applicable Road Code Standards at the owner's sole cost. The transfer may occur only if the Commissioners approve the deed in public session.
- H. Proposed Private Roads must be denoted as such on subdivision plats.

2.14 STRUCTURES WITHIN RIGHT-OF-WAY

- A. No structures are permitted in the right-of-way without prior approval of the Department. Mailboxes are allowed in the right-of-way provided they are mounted on a traditional post (4" x 4" timber, steel pipe < 1 1/2" o.d. or approved equal.) No bricked or other rigid structures are allowed.
- B. Traffic barriers, guardrails and other such structures shall be designed and constructed in accordance with the SHA Standards.

PART 3 GEOMETRICS

The geometric design of roads is to be done in accordance with the standards contained in the AASHTO Policy, and the standards contained in this Code as described below. Where conflicts exist, the standards of this Code are to take precedence for roads with traffic volumes less than 5,000 ADT. The design of roads with heavier traffic volumes shall be in strict accordance with AASHTO standards and SHA design standards as applicable. The definition of the terms and explanation of abbreviations used in this Code, but not described, shall be understood as defined and explained in the above referenced Publications.

3.01 DESIGN SPEED

Design speed for a road shall be calculated by adding 5 miles per hour (mph) to the speed limits posted or to be posted on the road. The posted speed limits on new roads constructed per the requirements of this code depends on the road class, and shall be 15 mph, 25 mph, 30 mph, and 35 mph for mini road, minor road, minor collector road, and major collector road respectively.

3.02 MINIMUM AND MAXIMUM GRADES

Minimum limit on the longitudinal grade is necessary to ensure proper drainage of surface runoff and is to be 0.5% for all roads. The limit on maximum longitudinal grade is established considering operating characteristics of the vehicles anticipated to use the road. Those limits are 10% for mini and minor roads; 8% for minor collector roads; and 7% for major collector roads and all commercial and industrial roads.

Usually roads should be designed with grades much flatter than the maximum limits specified to ensure comfortable driving experience by most drivers.

On an individual basis, the Department may also consider modification of the limits on the maximum grades depending on the engineering judgment with respect to the severity of the topography.

3.03 STOPPING SIGHT DISTANCE

Considering the local and low speed nature of the roads intended to be covered by the design criteria of this Code, the sight distance consideration should include only the stopping sight distance, except for intersections for which requirements are covered in Section 3.07. The minimum requirements for the sight distance shall be based on the design speed as specified in Section 3.01, and shall be determined from the design values given for the “Stopping Sight Distance, Wet Pavement Conditions” in the AASHTO Policy. The design values are usually given as a range based on the design speed values. The lower limit of the range shall be the minimum sight distance required, but designers shall try to provide sight distances corresponding to the upper limit of the range or better whenever possible.

3.04 HORIZONTAL CURVATURE

Horizontal curvature of the roads shall meet the minimum radii requirements for all of the following conditions:

1. Stopping Sight Distance: The curvature of the road shall allow the sight line required to provide the minimum sight distance values, specified in Section 3.03, to fall within the right-of-way or if accepted by the Department, within the combination of a right-of-way and sight distance easement.

The location of the sight line shall be determined by calculating the value of middle ordinate (M) by using the following formula as described in the AASHTO policy.

$$M = R (1 - \cos \frac{28.65S}{R})$$

For calculating “M” value, the value of radius “R” shall be measured in feet to a point off-set outward from the inner edge of the pavement by a distance of 5.5, 6.0, and 6.5 feet for minor, minor collector, and major collector roads respectively, and “S” in the formula represents the required sight distance in feet.

It must be realized that no utility poles, shrubbery, trees, car parking, or other visual barriers obstructing the line of sight from a driver’s eyes (measured at 3.5 feet above the roadway surface) and to the top of an object (measured 6 inches above the road surface) will be allowed within the right-of-way and/or sight distance easement. In cases like townhouse roads with parking adjacent to the roadway, reduction of right-of-way upon Department’s approval, parallel parking on roads, etc., the curvature

may have to be flattened considerably to meet the requirements for the unobstructed line of sight.

2. Super elevation: The roads covered by this Code are generally intended to be designed with no modification to normal crown conditions and it is important to determine if the proposed curvature will provide safe and comfortable driving conditions at the design speeds, considering super elevation provided by the normal crown conditions. This determination shall be made by determining the radius corresponding to the super elevation rate and design speed from the figure titled, "Maximum Safe and Comfortable Speed for Horizontal Curves on Low Speed Urban Streets," given in the AASHTO policy. The smallest value of super elevation provided by the normal crown conditions as depicted in the standard cross-sectional details is "-0.02" and shall be used for the above mentioned determination of the radius. Since this value of super elevation rate occurs in the outer lane, the radius measured to the center of the outer lane shall not exceed the calculated radius. Sharper curvatures for major collector roads may be considered by the Department for approval if design properly incorporates the necessary super elevation rate as described in the AASHTO policy.

3.05 VERTICAL CURVES

Parabolic, vertical curves meeting the following minimum criteria shall be used as a fillet between the two intersecting tangent grades.

A. Rate of Vertical Curvature (k)

The minimum values of "k" necessary for an acceptable vertical curvature shall be determined from tables given in the AASHTO policy for the design controls for Crest or Sag vertical curves based on the stopping sight distance requirements and headlight sight distance requirements, as appropriate. From these tables, rounded values of k, not the computed values, shall be extracted. The lower limit of the applicable range of rounded values shall be considered as the minimum required value, but designers shall try to accommodate the largest value practically feasible. The minimum stopping sight distance requirements and design speed limits necessary for using the above referenced tables shall be determined as discussed in Sections 3.01 and 3.03. For identifying the type of a curve as Crest or Sag, the figure given in the AASHTO Policy for types of vertical curves can be used.

B. Length of Vertical Curves

The minimum length of curve for an acceptable vertical curvature shall be calculated using the following formula:

$$L = kA$$

where k = Minimum required rate of vertical curvature as discussed in the preceding section.

A = Algebraic difference of the two intersecting tangent grades in percent

L = Minimum length in feet of the vertical curve

The minimum length of the curve calculated above shall be rounded to the next multiple of 25 feet. Alternatively, the length of curves can be determined from the figures given in the AASHTO Policy, using values of A and k .

C. Other Requirements

—————Reverse Curves: Reverse vertical curves without a tangent between them shall not be used unless no other feasible design alternative exists. This provision does not apply for minor roads or private mini-roads.

—————Curves Separation: All vertical curves shall be separated by a tangent grade of at least 100 feet unless no other feasible design alternative exists. This provision does not apply for minor roads or mini-roads.

3.06 COMBINATION OF HORIZONTAL AND VERTICAL ALIGNMENT

- A. Horizontal and vertical alignments should not be designed independently. Proper combination of horizontal alignment and vertical profile will increase usefulness and safety, encourage uniform speed, and improve appearance. Consultants should refer to the discussions on the subject matter included in the Chapter; “Elements of Design” included in the AASHTO policy. Horizontal and vertical curves shall not overlap unless approved by the Department.
- B. Horizontal and Vertical Curves shall not overlap without approval of the Department.

3.07 INTERSECTIONS

All intersections including entrance/exit facilities for proposed developments, except for driveways for residential lots, shall be designed to meet the following minimum criteria as applicable:

- 1. Intersection Radii: Radii of the fillet curve between the intersecting edge of pavement lines shall not be less than the minimum values specified below:

INTERSECTION TYPE	FILLET RADII (FEET)
Mini Road/Minor Road	25
Minor Road/Minor Road	25
Minor Road/Minor Collector Road	35
Minor Road/Major Collector Road	40
Minor Collector Road/Minor Collector Road	35

Minor Collector Road/Major Collector Road	40
Major Collector/Major Collector	40
Commercial or Industrial Roads	50
All Others	25

2. Additional Paving/Lane Width: Additional lane and paving width may be necessary at intersections to accommodate turning maneuvers of heavy vehicles such as buses, trucks, etc., without interfering with each other. It is therefore required that all intersections involving either major roads and/or commercial or industrial roads shall be checked for the need of additional lane and paving widths. The procedure for determining these additional requirements will be as follows:

- a. Determine track width (u) and width of front overhang (F_A) based on the type of turning vehicle from the applicable figures given in the AASHTO Policy. The type of vehicle considered should be “BUS” for roads serving primarily residential areas, and a WB40 Semi-Trailer Combination for roads serving commercial or industrial areas.

The turning radius of outer front wheels (R_T) for use in the above figures must not be less than the minimum turning radii of 42 feet and 40 feet for BUS and WB40 Trailer, as given in AASHTO Policy for the minimum turning paths of these vehicles. For preliminary analyses, $R_T=60$ can be used, but it may have to be revised in final design as necessary to meet the minimum pavement width requirements as well as the minimum radii at the pavement edge requirements. A revised value of R_T would obviously require re-determination of values of U and F_A for finalizing the design.

The value of F_A for BUS may fall outside the figure given in the AASHTO Policy for small turning radii. In such cases, $F_A=5.0$ feet can be used.

- b. Minimum width of the pavement required to accommodate the two turning vehicles moving side by side in opposite directions can then be calculated using the following formula as given in the AASHTO Policy:

$$W=2(U+C) + F_A + F_B + Z$$

Where U and F_A have already been discussed and other parameters are as follows:

$$C = \text{Total lateral clearance per vehicle} \\ = 4.0 \text{ feet}$$

$Z =$ Extra width allowance due to difficulty of driving on curves
 $= 2.0$ feet

$F_B =$ Width of rear overhand
 $= 0$ (for buses and trucks)

So above formula will reduce to:

$W = 2(U+4.0) + F_A + 0 + 2.0$
 $= 2U + F_A + 10$

The calculated value of W shall be the minimum pavement width required at intersection of roadways.

3. Grades: Grades of roadways within the area formed by intersecting rights-of-way shall not exceed 8% for entrance/exit facilities for commercial sites and 5% for county road intersections.
4. Intersection Angles: Intersection angles should be preferably 90° but shall not be less than 70°. Justification for angles other than 90° must be made to the satisfaction of the Department.
5. Roadway Crowns: The roadway crown of the major roads shall be maintained and the roadway crown of the minor road should be removed by uniformly eliminating them over such a distance from the intersection that will not change the relative slope between the profile of the edge of pavement and centerline to exceed 1 foot in a 150 feet slope.
6. Deceleration/Right Turn Lanes: A deceleration or right turn lane serves as a speed change lane for vehicles leaving the through traffic stream to slow down to a comfortable speed for making a right turn either onto an intersecting highway or into a roadside establishment.

Based on the right turn ADT, highway ADT in one direction, posted speed limit of highway, and the turning radius measured to the inside edge of the paving, the minimum length of the right turn lane required shall be determined from the Warrants for Right Turn Table 3.07.01 or Table 3.07.02, as applicable. The taper length included in these tables represents the length of the taper marking. The pavement width in the taper area shall be the same as the rest of the turn lane. When no right turn lane is warranted, a minimum of 50 feet long lane with taper marking shall be provided unless waived by the Department. Standard Detail R-19 provides details about the layout of a right turn lane. The shoulder area can be used for right turn lanes, but the minimum width of the lane shall not be less than 10 feet.

7. Acceleration Lane: An acceleration lane serves as a speed change lane for vehicles entering a highway and for speeding up to a comfortable merge

with the through traffic on the highway. An acceleration lane shall be warranted when turning volume is more than 100 vehicles per hour (VPH), and its minimum required length can be determined from the Warrants for Acceleration Lane, Table 3.07.03 and the layout details are shown on the Standard Detail R-19. Shoulder area can be used for acceleration lane, but width of the lane shall not be less than 10 feet. For turning traffic volumes not exceeding 100 VPH, a minimum length of 50 feet with taper marking shall be provided as an acceleration lane unless waived by the Department.

8. Bypass Lanes: A bypass lane allows through traffic to bypass a left turning vehicle which is stopped on the travel lane. The required length of bypass lanes shall be determined from Table 3.07.04, and the layout details are shown on Standard Detail R-19. Shoulder area can be used for bypass lane, but width of the lane shall not be less than 10 feet.

Table 3.07.01
Warrants Right Turn Lane
Stop Condition
(R=50' or Less)

Highway ADT < 2,000 Vehicles

Right Turn ADT	Assumed Speed Change on Through Lane	Highway Posted Speed							
		25 MPH		35 MPH		50 MPH		55 MPH	
		Taper	Decel	Taper	Decel	Taper	Decel	Taper	Decel
0-100	Full Reduction	-	-	-	-	-	-	-	-
100-200	Full Reduction	-	-	-	-	-	-	-	-
Over 200	25 MPH	-	-	-	-	50	200	-	-

Highway ADT 2,000 to 4,000 Vehicles

0-100	Full Reduction	-	-	-	-	-	-	-	-
100-200	25 MPH	-	-	Engineer Judgement		50	200	-	-
200-300	20 MPH					90	235	-	-
300-400	15 MPH					140	275	-	-
Over 400	10 MPH			50	200	190	315	-	-

Highway ADT 4,000 to 10,000 Vehicles

0-50	Full Reduction	-	-	-	-	-	-	-	-
50-100	20 MPH	Engineer Judgement				90	235	-	-
100-200	15 MPH					140	275	-	-
200-400	10 MPH			50	200	190	315	-	-
Over 400	5 MPH			90	235	210	375	-	-

Table 3.07.02
Warrants Right Turn Lane
15 MPH
(R=50' or Greater)

Highway ADT < 2,000 Vehicles

Right Turn ADT	Assumed Speed Change on Through Lane	Highway Posted Speed							
		25 MPH		35 MPH		50 MPH		55 MPH	
		Taper	Decel	Taper	Decel	Taper	Decel	Taper	Decel

0-100	Full Reduction	-	-	-	-	-	-	-	-
100-200	Full Reduction	-	-	-	-	-	-	-	-
Over 200	25 MPH	-	-	-	-	50	150	-	-

Highway ADT 2,000 to 4,000 Vehicles

0-100	Full Reduction	-	-	-	-	-	-	-	-
100-200	25 MPH	-	-	Engineer Judgement		50	150	-	-
200-300	20 MPH	Engineer Judgement				90	200	-	-
300-400	15 MPH					140	250	-	-
Over 400	10 MPH					50	150	190	300

Highway ADT 4,000 to 10,000 Vehicles

0-50	Full Reduction	-	-	-	-	-	-	-	-
50-100	20 MPH	Engineer Judgement		90	200	-	-		
100-200	15 MPH			140	250	-	-		
200-400	10 MPH			50	150	190	300	-	-
Over 400	5 MPH			90	200	210	350	-	-

Table 3.07.03

Length of Acceleration Lanes

Highway	L3 = Acceleration Length-Feet			
	For Entrance Curve Design Speed, MPH			
Design Speed, MPH	Stop Condition	15	20	25
30	190			
35	285	240	190	170
40	380	320	250	220
45	570	510	440	400
50	760	700	630	580
55	965	910	850	790

Table 3.07.04

**Required Length of Bypass Lanes
for Two Lane Highways**

Highway ADT <2,000 Vehicles

Left Turn ADT	Storage Length (Ft.)	Taper Length (Ft.)			Assumed Speed Change on Through Lane
		Highway Posted Speed			
		25 MPH	35 MPH	50 MPH	
0-50	-	-	-	-	-
50-200	-	-	-	-	-
Over 200	40	50	50	75	25

Highway ADT 2,000 to 4,000 Vehicles

0-100	-	-	-	-	-
100-200	40	50	50	75	25
200-300	60	50	50	100	20
300-400	80	50	50	125	15
Over 400	Consider Separate Left Turn				

Highway ADT Over 4,000 Vehicles

0-50	-	-	-	-	-
50-100	20	50	50	100	20
100-200	40	50	50	125	15
200-400	80	50	75	150	10
Over 400	Consider Separate Left Turn				

$$\text{Storage Length} = \frac{\text{ADT} \times .20}{30} \times 20 \text{ ft.} \times 1.5$$

9. Separate Left Turn Lanes: Bypass lanes are sufficient for accommodating small left turn volumes on relatively less busy highways. Based on the traffic volumes, it shall always be checked using the Table 3.07.01: Warrants for Left Turn Lanes, if a separate left turn lane needs to be provided. If one is required, it shall be designed based on the information provided on the Standard Detail R-20.
10. Signing: Traffic control signs such as “STOP”, “KEEP RIGHT”, “NO PARKING”, Speed Limits, etc., as necessary, must be included in the plans in accordance with the Manual of Uniform Traffic Control Devices (MUTCD), or SHA Standards.
11. Pavement Markings: A pavement marking plan may be required by the Department if a project meets warrants for right turn lanes, bypass lanes, or other situations as determined by the Department. When required, such a plan shall be in accordance with the requirements found in the most current edition of the MUTCD, or SHA Standards.
12. Traffic Signals: The need for installation of new traffic control signals and/or the modification of existing traffic control signals to accommodate traffic from the proposed developments will be determined by the Department in accordance with the warrants prescribed by the most current edition of MUTCD. All costs, basic or incidental, to the construction and initial operation of the signal will be borne by the Developer.
13. Alignment: Roads on both sides of the intersecting roads shall be across from each other to form a fully aligned intersection.
14. Sight Distance: Adequate sight distance shall be made available for all turning maneuvers. The minimum sight distance required for various turning movements shall be determined from the figures given in the AASHTO Policy for sight distances required at intersections.
15. Existing roadways shall be reconstructed for a minimum of 100 feet on either side of the point of intersection (total distance of 200 feet). Roadways are to be built to current standards for the appropriate road classification. If the road is built to current standards, no improvements are required.
16. In addition to the Maintenance of Traffic plan required in Part 8 of this code, a sequence of construction shall also be provided.

3.08 RESIDENTIAL ACCESS

- A. The design of residential driveways shall be in accordance with the detail shown on Standard Details R-21 and 22. The minimum sight distance requirements, as specified in Section 3.07(A)(14), shall be applicable to residential driveways.

- B. Driveways shall be located as far away from intersections as possible, but in no case shall driveways be less than 75' from an intersection.
- C. All driveways must be paved at least to the County right-of-way.
- D. Driveways that slope to a County road at a slope of greater than 5% must be paved to the crest.

PART 4 PAVEMENTS, CURBS, SIDE PATH

4.01 ROADWAY PAVEMENT DESIGN

A. Design of a pavement is highly dependent upon the quality of the foundation or subgrade soils. The designer shall either assume that the subgrade soils are of poor quality or perform a detailed soil investigation as discussed in the following section to verify if subgrade soils are of good quality. The pavements can then be designed to meet the minimum structural number requirements as specified in Table 4.01.01. The design can be based on the criteria for good subgrade soils only upon approval of the Department.

B. Soil/Foundation Investigations

For a pavement design based on the subgrade soils of good quality, the designer shall propose a soil investigations program including boring locations, sampling procedures, and method of testing. The program will be prepared by a Professional Engineer, licensed in Maryland, specializing in geotechnical work. Upon approval of the program by the Department, soil investigations shall be performed onsite by the engineer or qualified soils technician to obtain information necessary to classify the soils in accordance with the "Guide to Classification for Soils and Soils-Aggregate Mixtures", included in the SHA Standards. Based on the soil classification, quality of the subgrade soils can then be determined in accordance with the SHA Standards for Soils and Soil Aggregate Mixtures, characteristic and performance. The soil types thus determined as excellent or good can be considered as good soils and all other soils shall be considered poor soils for the purposes of designing a pavement.

The results of the soil investigation program including qualifications of participating personnel, all bore logs, particle analysis, and other test results, along with classification of soils and determination about quality of subgrades shall be submitted to the Department for review and approval. Upon approval by the Department, design of the pavement can be based on good quality of the subgrade. The investigation and design must take place and be complete before construction begins.

C. Structural Number Requirements

All roadway pavements shall be designed to meet the following minimum requirements for the structural number (SN):

**Table 4.01.01
Required Structural Number**

Road Type	Minimum SN	
	Good Soils	Poor Soils
1. Townhouse Parking	2.10	2.90
2. Minor Roads		
a. Residential	2.40	3.20
b. Commercial/Industrial	N/A	N/A
3. Minor Collector Roads		
a. Residential	3.35	4.15
b. Commercial/Industrial	6.10	6.90
4. Major Collector Roads		
a. Residential	4.70	5.50
b. Commercial/Industrial	6.90	7.70

The structural number of a proposed section shall be calculated using the following equation:

$$SN = A_1D_1 + A_2D_2 + A_3D_3$$

Where A_1 , A_2 , A_3 = layer coefficients, representative of surface course, base course, and subbase respectively.

D_1 , D_2 , D_3 = actual thickness, in inches, of surface course, base course, and subbase respectively.

The layer coefficient to be used in the above equation shall have values given in the following table, and the proposed thickness of a lift in each layer shall be within the respective range given in the table:

**Table 4.01.02
Layer Coefficients and Thickness of Lift**

Layer Type	Layer Coefficient	Lift Thickness (inches)
1. Surface Course, HMA	0.40	1.0 to 2.0
2. Base Course, HMA	0.40	1.5 to 6.0
3. Subbase		

a. Graded Aggregate (GA)	0.14	4.0 to 8.0
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¹HMA = Hot Mix Asphalt

Notwithstanding the above calculations, the minimum and maximum lift thickness shall be consistent with the State Highway Administration's "Pavement Design Guide" for the HMA mixtures in Standard R-23.

D. Minimum Pavement Sections Standards

The pavement sections based on the design described in Standard Detail R-23 can be proposed without providing any backup design information to the Department. These designs are based on structural number requirements for subgrade soils of poor quality.

The paving for all mini roads shall be constructed in accordance with the detail shown on Standard Detail R-1.

E. Materials, Construction and Testing

Materials, construction and testing for embankments, subgrade, aggregate base courses and hot mix asphalt shall meet the applicable SHA Specification unless otherwise noted by this Code. Compaction for HMA shall be in accordance with Part 9 of this Code.

F. Under Drains

Structural strength and life of a pavement structure is highly dependent on proper drainage of the pavement structure and the subgrade soils. Underdrains will therefore be required at the Department's discretion. Underdrains shall be constructed at a minimum slope of 1% and shall be a minimum of 6" diameter perforated PVC Schedule 80 pipe encased in at least 6 inches of #57 stone all around.

G. Structures Located Within Paved Section

Asphalt shall be placed one-quarter inch higher than the top of structures such as manholes, inlets, valve boxes, etc., located within paved sections.

4.02 CURBS

A. All curbs shall be of standard or modified type, as shown on Standard Detail R-26 and the type of the curbs proposed shall be in accordance with the street cross-sectional details, as shown in Standard Details R-1 through R-17. Expansion joints shall be constructed every 40 feet and at points of curves and tangents. Expansion joints shall also be constructed for the full depth when stationary structures are encountered, such as inlets, at the end of a taper and

25 feet beyond the end of the taper. Expansion joints are not required when adjacent to flexible pavement.

- B. Joints shall be sawcut and placed every 10 feet, except where shorter spacing is necessary for closures. No joint spacing shall be less than 4 feet.

4.03 SHOULDERS

All shoulders shall be stabilized shoulders, consisting of compacted gravel or crusher run covered with topsoil, stabilized by seed and mulch, as shown in the Standard Details R-1 through R-17.

4.04 SIDEWALKS

All sidewalks for pedestrians shall be constructed as shown in the Standard Detail R-24. Where sidewalks intersect driveways, Standard Detail R-22 shall apply.

4.05 BIKE PATHS/COMBINED SIDE PATHS

All bike paths or side paths for combined use by pedestrians and bike riders shall be 6 feet wide and shall be constructed to meet the requirements established for sidewalks in Section 4.04. Said width may be modified by the Planning Commission. The 4" thick concrete layer can, however, be replaced with 2" Hot Mix Asphalt Base-Course (BC) and 6" of gravel or crushed stone on compacted subgrade if desired. Such paths may be constructed inside or outside of the right-of-way. When constructed outside the right-of-way, said paths shall be maintained by a Homeowners' Association or other entity acceptable to the Department.

4.06 HOLD ON FINAL COURSE

The Developer will be required to pave all subdivision roads by placing the curb, gutter and base course blacktop as soon as is practicable, then using the base course paving during the construction period. The surface (final) course will only be placed when all other road construction is completed and a minimum of eighty percent of the houses have been issued certificates of occupancy. An inspection will be made by the Department to determine if any repairs are needed to the base course prior to the final course being placed. For private mini-roads, certificates of occupancy shall not be approved by the Department until the base coarse and black top (if applicable) have been completed to the satisfaction of the Department.

4.07 DRIVEWAY PAVING

Except where sidewalks are used, all driveways to individual lots must be paved within the limits of the County road right-of-way. The minimum paving section is eight inches (8") of crusher run or gravel base and two inches (2") of surface course bituminous concrete. When sidewalks are used, Standard Detail R-22 shall be used.

PART 5 DRAINAGE AND EROSION & SEDIMENT CONTROL

An adequate drainage system shall be provided to collect all runoff from the contributory drainage areas, and transport it to an existing watercourse or pipe system of adequate capacity to accommodate the peak rate of stormwater flow for the design storm of the drainage areas. The drainage system may be of closed type (a storm sewer system) or of open type (open channels, or a combination of the two) as appropriate.

5.01 DESIGN STANDARDS

All drainage systems shall be designed to handle peak flows from the design storm as defined in the SHA Highway Drainage Manual.

5.02 PEAK FLOW CALCULATIONS

Peak rate of flows for a designated design storm shall be calculated either using Rational Method as described in the SHA Drainage Design Manual (SHA Manual), or using TR-55 (Technical Release 55) Method, as described in the related publication of the Soil Conservation Service. The calculations shall make use of only those charts and nomographs which are included in the respective publications.

5.03 CAPACITY DESIGN METHODS

- A. The capacity design of open channels and pipes shall be completed using Mannings' Equation, as described in the SHA Drainage Design Manual.
- B. Capacity design of all culverts shall be completed considering both inlet and outlet controls in accordance with the methods included in the SHA Drainage Design Manual.
- C. Except as noted below, the capacity design of catch basins shall be in accordance with the SHA Highway Drainage Manual and otherwise completed in accordance with the methods included in the SHA Drainage Design Manual. The spread of water shall not be permitted as follows:
 - 1. Minor Road: Maximum five (5) foot spread on each side of road, leaving a minimum 12-foot dry travelway.
 - 2. Minor Collector Road: Maximum four (4) foot spread on each side of road, leaving a minimum 24-foot dry travelway.

3. Major Collector Road: Maximum four (4) foot spread on each side of road, leaving a minimum 28-foot dry travelway.
4. Commercial or Industrial Road, Minor Collector: Maximum six (6) foot spread on each side of road, leaving a minimum 20-foot dry travelway.
5. Commercial or Industrial Road, Major Collector: Maximum six (6) foot spread on each side of road, leaving a minimum 24-foot dry travelway.
6. Dual Lane Road, Minor Collector: Maximum four (4) foot spread on either side, leaving a minimum 8-foot dry travelway in each of the dual lanes.
7. Dual Lane Road, Major Collector: Maximum four (4) foot spread on either side, leaving a minimum 10-foot dry travelway in each of the dual lanes.
8. Up to 15% inlet bypass is allowed, provided it is captured at the next downstream inlet.

5.04 OTHER REQUIREMENTS

In addition to, or in lieu of, the requirements of the SHA Highway Drainage Manual, the proposed drainage system shall meet the following requirements:

1. Open channels
 - a. The seasonal high water table elevation shall be at least two feet below invert of the channel. A non-compliance with this condition may necessitate consideration of additional flows in the capacity design due to the groundwater contribution and/or the provision of an under drain system to avoid permanent soggy invert condition.
 - b. Channels shall be triangular, trapezoidal or parabolic in shape. In each case, accessibility for maintenance shall be considered in the design. Roadside swales shall be in accordance with the street cross sectional details given on Standard Details R-1 through R-17. Trapezoidal swales, as depicted in detail on Standard Detail R-27, shall be considered wherever possible in lieu of the triangular swales. These types of swales may also qualify the development for certain stormwater management credits.
 - c. The minimum bottom width and the maximum side slopes shall be in accordance with the cross-sectional details shown on the above mentioned standard sheets.
 - d. Minimum design velocity shall be in accordance with the SHA Highway Drainage Manual, unless the open channel is designed as a water quality feature in accordance with Cecil County Storm Water Management Requirements.

- e. The maximum design velocity in a grassed channel shall not exceed the permissible values stated in the Standards and Specifications for Grassed Waterways section of the MD E&S Manual except as provided with structural measures as detailed therein.
- f. If designed with a paved bottom, the bottoms shall be reinforced portland cement concrete with a minimum 6" thickness. This applies to valley gutters.
- g. A backwater analysis may be required by the Department if apparent constrictions or high tailwater conditions exist downstream.

2. Storm Sewer Systems

- a. Pipes shall either be reinforced concrete pipes (RCP), ~~corrugated metal pipes (CMP)~~, high-density polyethylene (HDPE) pipes or aluminum pipes. Aluminized steel corrugated metal pipe is also acceptable, but must be free of damage to the coating to the satisfaction of the Inspector at the time of installation and backfill. Galvanized and bituminous-coated galvanized corrugated metal pipe is prohibited.
- b. The manning's "n" value shall be based on the data published by the pipe manufacturers.
- c. Rock outlet protection, designed per MD E&S Manual.
- d. A backwater analysis may be required by the Department if apparent constrictions or high tailwater conditions exist downstream.
- e. Maximum full flow velocity in the pipe shall be 15 feet per second.
- f. Minimum pipe diameter shall be 15 inches, or an equivalent non-circular shape.
- g. Minimum pipe cover shall be per the manufacturer's specifications for the type of loading proposed and in no case shall the cover be less than one foot.
- h. Storm manholes or junction boxes shall be used for changes in the direction of flow when an inlet is not provided. The maximum deflection shall be 90 degrees.
- i. All pipe outlets shall be provided with either SHA Standard End Walls or Standard End Sections. The dimensions of the rock outlet

protection aprons shall be chosen accordingly, but shall not be less than those required by the design per MD E&S Manual.

- j. All inlets and storm manholes shall be backfilled with #57 stone two feet around the structures to the top of subgrade elevation. The stone envelope shall be drained into the structure at the top of the bench by use of a 6" perforated PVC pipe extended 12" into the stone, capped and wrapped in filter cloth.
- k. All backfill trenches shall be maintained in an acceptable condition by and at the expense of the Contractor for a period of twelve (12) months following the date of conditional acceptance of the work.
- l. If the Contractor fails to fill depressions in the backfilled trench within 24 hours after the receipt of notice from the County, the County may refill said depressions and the Contractor shall reimburse the County for all costs incurred. In case of emergency, the County may refill any dangerous depression or protect with lights wherever necessary without giving previous notice to the Contractor; and the Contractor shall reimburse the County for all costs incurred.

3. Culverts

- a. Culverts shall either be reinforced concrete pipes (RCP), high-density polyethylene (HDPE) pipes or aluminum pipes. Aluminized steel corrugated metal pipe is also acceptable, but must be free of damage to the coating to the satisfaction of the Inspector at the time of installation and backfill. Galvanized and bituminous-coated galvanized corrugated metal pipe is prohibited.
- b. Head walls/wing walls or flared sections, as applicable, shall be provided at both ends.
- c. Culverts shall be installed per manufacturer's recommendations. Provisions for anti-floatation shall be provided for HDPE pipe. Regardless of pipe material, all pipe shall be backfilled to the midpoint with #57 stone.
- d. Adequate erosion protection treatment shall be provided at both ends.

4. Inlets

- a. All precast inlets require knock outs installed at the factory during inlet construction.

5.05 STORM SEWER SYSTEM DETAILS

Storm drain inlets and other structural specifications shall conform to SHA Standards.

5.06 EROSION AND SEDIMENT CONTROL

- A. All erosion control plans shall be prepared in accordance with the requirements of the Soil Conservation District having jurisdiction, and in accordance with the standards included in the MD E&S Manual.
- B. The erosion and sediment control plans shall be submitted to the Soil Conservation District having jurisdiction for review and approval, and a copy of the plans bearing original approval stamps of SCS shall be furnished to the Department prior to requesting final approval of the road construction plan.

5.07 SUBMISSION AND APPROVAL

All drainage plans and calculations completed in accordance with the requirements of this Code shall be submitted to the Department for review and approval along with the rest of the road construction plans, as required by this Code. All drainage components shall be considered an integral part of the road construction plans.

PART 6 UTILITIES

Utilities can be installed in a public right-of-way or in an easement controlled by the Department only after a utility permit has been issued by the Department in accordance with the applicable policies and procedures. The preferred locations of the various utilities are shown in the Standard Details R-29 and R-30. The Department may approve different installation locations on an individual basis if suitable. The initial installation of the utilities and subsequent maintenance must be completed by applicable utility companies in accordance with the applicable policies and procedures of the Department, with special attention to signage and maintenance of traffic in accordance with SHA Standards, protection of survey controls, erosion and sediment control, restoration of the paving in accordance with the applicable standard details (See Standard Detail R-31), returning all disturbed areas to their original grades, and stabilizing unpaved areas with minimum 4" thick layers of topsoil, vegetatively stabilized with permanent seeding and mulch in accordance with

the requirements specified in the MD E&S Manual. Utilities shall be drawn on the approved Grading and Road Construction Plans and shall be approved by the Department prior to installation. These plans shall also include locations of utility crossing conduits under roads and electric telephone pedestal locations. Any contractor or subcontractor installing utilities shall have a copy of the approved Utility Plans on-site at all times, or a Stop Work Order will be issued.

PART 7 SIGNS AND PAVEMENT MARKINGS

- A. Street name and other roadway signs and pavement markings shall be installed in accordance with the requirements of the most current edition of MUTCD, and in accordance with the SHA Standards at the expense of the Developer. Temporary street signs (including private, blue, street name signs) shall be required if buildings are proposed for occupancy prior to dedication of the internal roads. Permanent signs will not be installed until a maintenance bond is returned to the Department. Roadway signs and pavement markings, including striping, shall be included as part of the construction drawings, and must be approved by the Department.
- A. Except as approved by the Department, roadside parking shall be prohibited on County roads. A sign shall be posted at subdivision entrances by the Developer stating, "No parking on or along County roads."

PART 8 MAINTENANCE OF TRAFFIC

- A. A “maintenance of traffic” plan prepared in accordance with SHA Standards shall accompany all applications submitted to the Department for construction activities on existing roads. This plan will be considered an integral part of the permit, and no construction activities shall commence until this plan has been implemented for safety of the workers and drivers, to the satisfaction of the Department. Notices regarding road closures shall be placed in local newspapers and other media, as well as on the road to be closed at least 30 days prior to the date of starting the closure. All components of the traffic maintenance plan including signs shall be removed promptly after completion of the work.
- B. Approval of a maintenance of traffic plan, and/or additional suggestions or requirements by an inspector, does not imply any liability on the part of the Department. The contractor is solely responsible for safety of its employees as well as the public-at-large.
- C. Where the maintenance of traffic plan includes a local road closure, the emergency management agency of the county shall be notified at least 5 working days in advance of said closure.

PART 9 TECHNICAL SPECIFICATIONS

A. All material, construction, and testing shall conform to applicable sections of the SHA Specifications, unless approved otherwise by the Department on an individual basis.

B. With regard to compaction of Hot Mix Asphalt (HMA), compaction shall be required in accordance with Section 504.03.06 of the January 2001 version of the SHA Specifications. The Inspector may modify the in-place density requirement of 92.0 to 97.0 percent of the maximum density, if the Inspector determines that the Contractor has achieved maximum compaction and any further attempt at compaction will result in damage to the HMA.

PART 10 CONSTRUCTION PLANS

10.01 PLAN APPROVAL PROCESS

A. Construction of private mini-roads or public roads and/or their appurtenances shall not commence until the Cecil County Department of Public Works has approved engineered plans for the work. Said approval shall be evidenced by the signature of the Director of the Department of Public Works upon the Construction Drawings, thereafter known as the Approved Construction Drawings or Approved Plans. The Standards contained in this Code shall govern except where specifically noted otherwise on the Approved Plans.

B. Design and construction drawings and specifications shall be prepared by a Professional Engineer licensed in the State of Maryland and submitted to the Department for review. Unless directed otherwise, only one copy of the submittal is required. The Department's Plans Reviewers will review the submittal and respond with required revisions, questions, and recommendations. Upon resolution of all Departmental questions and requirements, the Designer will be instructed to submit take-off quantity estimates to enable the preparation of a Public Works Agreement(s) between the Developer and the Board of County Commissioners of Cecil County. Upon execution of the Public Works Agreement(s), payment of all required fees, and posting of required financial assurances, the Designer will be instructed to submit final copies of the Construction Drawings, bearing the signature and seal of the licensed Professional Engineer, for signature by the Director. Upon distribution, the signed drawings will be considered the Approved Construction Drawings.

C. The preparation of the Construction Drawings and their submission to the Department for review and approval shall be in accordance with the applicable policies and procedures of the Department. The Department may require revision to the Approved Plans if required by field conditions.

D. The Contractor shall keep a set of the Approved Plans bearing an approval stamp of the Department at the site during all construction phases, and shall make them available to the Inspector when asked by him. Failure to maintain an approved set of Approved Plans on site, provide and maintain adequate site controls/stakeout and/or provide adequate supervisory personnel may result in a stop work order being issued by the Department.

E. As-built plans shall indicate red line confirmation of the horizontal and vertical alignment of all roads, the location and rim/invert elevations of all utility structures (inlets, manholes, storm drain pipes and vaults), sidewalks, and other pertinent features. Confirmation of width for all roads shall be noted every 100 linear feet, at the centers of all intersections, and all Points of Curvature.

10.02 DESIGNER'S RESPONSIBILITY FOR CORRECT SUBMITTAL

- A. The Department's Plans Reviewers' role is to verify the suitability of the proposed design to the satisfaction of the Department so that a positive recommendation for approval can be made to the Director. Review of submittals by the Department of Public Works does not constitute a "check" of the design; the accuracy of existing conditions and adequacy of design remain the responsibility of the Designer.
- B. If, in the course of review, the Plans Reviewer determines that substantial omissions, inconsistencies, inaccuracies, or non-compliance with the standards contained in this Code is evident in a submittal such that productive comments cannot be made, the submittal shall be returned as Administratively Incomplete. Because of the substantial delay that this may cause a project, Designers are strongly encouraged to ensure that their submittals are Administratively Complete.

10.03 FEES

- A. Fees for Plans Review and Inspection of proposed roads shall be established from time to time by resolution of the Board of County Commissioners of Cecil County. Said fees shall be intended to cover the cost of all plans review and inspection staff, together with administrative support, overhead costs, incidental costs, and supervision of the Director.
- B. A non-refundable Base Plans Review Fee shall be payable upon initial submittal of the proposed plans. This fee shall not be refunded if the project does not continue forward; however, it will be credited to the final Plans Review and Inspection Fee.
- C. Plans Review and Inspection Fees anticipate an initial review and one resubmittal. If additional resubmittals (does not include administrative requirements, such as Public Works Agreements or minor corrections) are required, an additional submittal review fee will be required.

10.04 INTERPRETATION OF APPROXIMATE QUANTITIES AND ESTIMATES

Developers and Contractors are cautioned any estimates of quantities on the approved construction plans or executed instruments with the County are for estimating purposes only and shall not relieve the Developer or Contractor from constructing the designed infrastructure in a complete and thorough manner, as detailed on the approved construction drawings and as directed by the Inspector.

10.05 EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE

It shall be the Developer and Contractor's responsibility, jointly and separately, to make personal examination of the location of the approved work and the surroundings thereof; to thoroughly acquaint themselves with the details of the work to be performed and all the conditions and obstacles likely to be encountered in the performance and completion of the work; to inform themselves as to the facilities for the transportation, handling, and storage of equipment and materials; and to carefully study the plans, specifications, and binding agreements. Contractors are encouraged to test pit areas where certified as-built representations are unavailable and it shall be understood that the County makes no warranty or guarantees as to the location, nature, or limits of infrastructure or conditions for construction.

10.06 MODIFICATIONS TO APPROVED PLANS

The Developer and Contractor are required to affect the construction in strict conformance with the Approved Plans. Minor field adjustments may be made with the approval of the Inspector, although documentation of any such approval, including the name of the Inspector who granted the change, shall be the responsibility of the Developer and Contractor. Any substantial changes to alignment, elevation, or materials shall only be approved in writing by the Director.

PART 11 IMPROVEMENTS GUARANTEE

11.01 IMPROVEMENTS PRIOR TO APPROVAL

- A. All Construction Plans for the improvements which a permittee will be required to construct or enter into agreement to construct shall be prepared in full compliance with the requirements, standards and specifications as contained in the Cecil County Road Code. In the case of major subdivisions, these plans shall be approved by the Department prior to final plat review by the Planning Commission. For Construction Plans associated with Site Plans required by the Cecil County Zoning Ordinance said plans shall be submitted along with the Site Plan submitted to the Department. In the case of minor subdivisions, the Construction Plans shall be submitted along with the minor subdivision plan submitted to the Department.
- B. All of the improvements required for a major subdivision shall be completed in accordance with the standards and specifications as contained in the Cecil County Road Code to the satisfaction of the Department prior to recordation. All improvements required for a Site Plan or minor subdivision shall be completed to the satisfaction of the Department prior to approval by the Department of the Site Plan or minor subdivisions.

11.02 IMPROVEMENTS AFTER APPROVAL

- A. If a Subdivider desires approval of a Final Plat for the recording thereof prior to the completion of, or acceptance by the County of the required improvements, a Public Works Agreement shall be executed by the Subdivider, as provided in the Cecil County Subdivision Regulations.
- B. In lieu of completing the improvements as required, the Subdivider may:
 - 1. Deliver to the County a corporate bond or acceptable letter of credit in such amount as is estimated to be 120% of the total cost of the project. Such corporate bond or acceptable letter of credit shall run to the County, and be conditioned as follows:
 - a. That the permittee, his agents and servants, will comply with all the applicable terms, conditions, provisions, requirements, standards, and specifications of this Code.
 - b. That the permittee, his agents and servants, will faithfully complete the work for which the permit is issued.
 - c. That the permittee, his agents and servants, will save harmless the County from any expense incurred through the failure of the permittee, his agents and servants, to complete the work as required by this Code, or from any damages growing out of the negligence of the permittee or his agents or servants.

2. Before acceptance, the bond or acceptable letter of credit shall be approved by the County Commissioners and the County Attorney. The bond or acceptable letter of credit shall be executed by a surety or guaranty company approved by the County and qualified to transact business in the State. All corporate bonds or acceptable letters of credit filed hereunder shall be released upon, but not before, acceptance of the completed roads and improvements by the County in accordance with Part 18.
 3. In the case of multi-phased projects, a corporate bond or acceptable letter of credit may be posted for each phase of the project consistent with the Final Plat approvals being sought from the Planning Commission; however, the corporate bond or acceptable letter of credit and accompanying Public Works Agreement shall provide for the base-course pavement and surface course pavement, at the discretion of the Department, for each individual phase.
 4. A corporate bond or acceptable financial surety may also be posted per the requirements of this part for improvements for a Site Plan or minor subdivision. Said corporate bond or acceptable financial surety shall be posted per the requirements of this part prior to the Department's approval of the Site Plan or minor subdivision.
- C. Before any road, sidewalk, curb and gutter, or drainage project may begin on a road or within the boundaries of a dedication to public use, the applicant for a permit to undertake any such project shall pay to the County a plans review, inspection, engineering and maintenance fee. The amount of said fee shall be determined from time to time by resolution of the Commissioners. In determining the fee, the Director will use either an estimated cost, or the cost as specified in the Public Works Agreement. If the fee is based on estimated project cost, the Director shall determine estimated cost by reviewing published data such as R.S. Means, and/or by using the average costs submitted on recent bids received by the County and State for comparable work. The method of fee determination shall be at the discretion of the Director.

PART 12 CONSTRUCTION PERMITS

- A. No person shall construct any road, sidewalks, curb and gutter or drainage structure, or begin any of such construction, without first obtaining a permit therefore. Applications for such permits shall be made to the Director on such forms as he shall prescribe, and shall be accomplished, in each case, by detailed plans and specifications and location and right-of-way plats bearing the tentative approval of the Planning Commission, and the Department of Public Works. Approval by the State Highway Administration shall also be required as to matters within its jurisdiction.
- B. No person, including any utility corporation or governmental agency, shall open cut any County road without first obtaining a permit from the Director, or his designee. All backfilling and repaving of such utility trenches shall be under the supervision of the Director according to Standard Detail R-31 and all applicable specifications.
- C. No person shall construct sidewalks, driveway entrances, retaining walls, or stops, or cut curbs or construct or place any temporary or permanent structure within a County right-of-way without first obtaining a permit therefore from the Director.
- D. In the case of a subdivision, the signature of the Director of Public Works on the approved construction plans shall constitute a permit to perform all items appearing on these plans.
- E. The routine maintenance of utilities and other facilities not involving construction, reconstruction or open cuts of a roadway shall be exempt from the requirements of the above Part A.

PART 13 CONDITIONS OF PERMITS

Construction permits shall be issued upon the following conditions which shall be specified therein:

- A. Irrespective of the plans and specifications accompanying the application, the actual construction shall conform to law and to the minimum requirements for a road of its class.
- B. Such permit shall be transferable upon application to the Department of Public Works by the successor in title.
- C. Such permit shall automatically expire one year after its issuance unless extended in writing by the Director stating the reasons for the extension. No extension shall be granted unless the bond filed with the permit by its term continues in full force and effect or a new bond is filed or the consent of the surety to the extension is obtained.
- D. The permittee and his agents, servants and subcontractors shall comply with all written requirements of the Department of Public Works directed to the permittee, which are deemed necessary in the interest of public safety or for the avoidance of unnecessary inconvenience to the public during such grading or construction, either before or during the course of grading or construction.
- E. The construction work, materials, plans and specifications shall at all times be open to and available for inspection by duly authorized officials and employees of the County. Permittees shall give notice to the Department of Public Works at least forty-eight hours in advance prior to commencing any construction for which the permit is issued. Failure to provide notice may result in a Stop Work Order by the Department.
- F. No permit for paving shall be issued unless there has been a final inspection including approval of grading by the Director.
- G. The permittee shall have available at all times on each project a copy of the permit for inspection by the representative of the Department of Public Works. If such permit is lost or destroyed, the permittee shall cause such permit to be replaced within twenty-four hours, excluding Saturdays and Sundays. The Department of Public Works shall issue new permits upon request to replace any which are damaged, lost or destroyed.
- H. No permit shall be issued for construction unless the right-of-way has been acquired by the County or shown on an approved plat.
- I. Whenever, in the opinion of the Director, the conditions of any permit are being violated, the Director may issue a Stop Work Order under the provisions of this Code. The willful refusal of any permittee to stop construction after receiving notice of a Stop Work Order shall be deemed a violation per Part 1.08 of this Code.

- J. Whenever, in the opinion of the Director, the work is being performed improperly or the work performed is faulty, he may cause the permit to be revoked, or order that portion of the work performed to be corrected.

PART 14 CONSTRUCTION IN EASEMENTS AND RIGHTS-OF-WAY

- A. Perpetual easements or rights-of-way shall be secured by the Developer without cost to the County. The Developer shall also obtain permission from any property to be occupied during construction or temporary construction easements outside the limits of these perpetual easements or rights-of-way.
- B. The Developer shall be responsible for confirming all necessary easements or rights-of-way and his Contractor's respect for their limits.
- C. The Contractor shall so conduct his work in the easements and rights-of-way that there will be a minimum of disturbance of the properties crossed. Fences shall be disturbed as little as possible and if damaged or removed shall be replaced or restored at least equal to their original condition at the expense of the Contractor.
- D. Upon completion of the work, the Contractor shall, at his own expense, clean up within the easements and rights-of-way and shall restore them at least to their original condition. Any damage to property outside the limits of the easements or rights-of-way shall be repaired or replaced by the Contractor at his own expense.
- E. No arrangements will be made for any means of access to the perpetual easements, rights-of-way or construction easements by the County; the Contractor shall therefore be required to make his own arrangements for access to the work within these points.
- F. Any damage alleged by an affected third party shall be considered a civil matter between the Developer, the Contractor, and the third party. The County shall bear no responsibility for the alleged damage, nor shall it be considered as adjudicator body therein.

15.0 CONTROL OF WORK AND MATERIALS

15.01 RELATIONSHIP BETWEEN THE COUNTY, THE PROJECT OWNER, AND THE CONTRACTOR

The Contractor (and his subcontractors) shall be contracted directly with the Developer and shall have no relationship with the County. The County, in the course of inspection or directing corrections to work, shall not be liable to the Contractor for any payments or other liabilities. The County shall view the Contractor as the Developer's agent, unless directed in writing to do otherwise, and direction given to the Contractor shall therefore be considered as having been given to the Developer.

15.02 SUPERVISION AND DIRECTION OF WORK

- A. The contractor shall supervise and direct the work efficiently using his best skill and attention. He shall be solely responsible for the techniques and sequences of construction. The work shall be prosecuted by the Contractor in such a manner, and with sufficient materials, equipment and labor, as is considered necessary to insure completion on or before the time specified.
- B. The contractor shall keep a competent supervisory staff on the work site at all times during its progress, to the satisfaction of the Director. The superintendent and his designers shall be identified to the Inspectors at the beginning of the work and as those persons may change.
- C. The Director shall not be responsible for the acts or omissions of the Contractor, or any subcontractor, or any of his or their superintendents, or employees.
- D. The Contractor shall maintain a local telephone at which a competent representative can be reached at all times, 7 days a week, 24 hours a day. This authorized representative shall have the capability of responding with positive corrective action to emergency calls from local officials (Sheriff's Dept., State Police and Department of Public Works personnel).

15.03 COMPETENCE OF LABOR

Only competent labor shall be used. Any employee of the Contractor who shall use profane or abusive language to the Inspector or other employees of the County, or is otherwise disorderly and interferes with him in the performance of his duties, or who is careless and incompetent, shall be discharged on the request of the Director and shall not again be employed at the work site except with the Director's consent.

15.04 NOTICES TO CONTRACTORS

All notices and instructions to the Contractor shall be given by the Director or his Designee.

15.05 DEFECTIVE WORK AND DEFECTIVE MATERIALS

- A. No inspection and no failure to inspect, nor the presence of any employees of the County during the execution of the work, and no approval or acceptance of any part of the work herein contracted for or of the materials and equipment used therein shall relieve the Contractor of any of his obligations to fulfill the requirements of the Approved Plans, or shall prevent the rejection of said work, materials and equipment, in whole or in part, at anytime thereafter, should said work, materials and equipment be subsequently found by the Director to be defective or not in accordance with the requirements of the contract documents.
- B. All materials not conforming to the requirements of the Approved Plans shall be considered as defective and all such materials, whether in place or not, shall be rejected and shall be removed immediately from the site of the work, unless otherwise permitted by the Director. No rejected material, the defects of which having been subsequently corrected, shall be used until approval has been given.

15.06 ALTERATIONS OF PLANS OR OF CHARACTER OF WORK

- A. The Director reserves the right to change the alignment, elevation, grade, form, length, dimensions or materials of the work under the contract, whenever any conditions or obstructions are met that render such changes necessary.
- B. Any changes and/or alteration to the approved contract documents shall be submitted and approved by the Director prior to beginning work on that item. Minor alterations may be noted on the as-built drawings if approved by the Director.

15.07 UNAUTHORIZED MODIFICATION OF THE WORK

Work done without lines and grades being given, work done without field stakeout and cut sheets, work done without required supervision, work done without required inspection, or work done beyond the lines and grades shown on the plans shall be considered as unauthorized and/or unapproved. Work so done may be ordered by the County to be removed and replaced at the Developer's expense.

15.08 SOURCE OF SUPPLY AND QUALITY OF MATERIALS

- A. The source of supply of each of the material shall be approved before the delivery is started. Representative preliminary samples of the character and quantity prescribed shall be submitted by the Contractor or producer, said samples being taken under the observation of the Director, for examination, and tested in accordance with the methods referred to herein. Only materials conforming to the requirements of standards contained in this Code and approved by the Director shall be used in the work. No materials which, after approval, have in any way become unfit for use, shall be used.

- B. Unless a material has a satisfactory record of performance, the Director reserves the right to withhold approval of a new source of supply, even though it meets the specification requirements, until its qualities have been verified and proved in actual service.
- C. Tests of all materials specified will be made in accordance with the latest official approved methods. When A.S.T.M., A.A.S.H.T.O., A.S.A., A.W.W.A., or Federal Specification standard specifications and serial numbers are stipulated, the reference shall be construed to be the latest effective specification. If material previously certified is subsequently declared substandard or unfit for the intended use by the certifying agency, the Director may declare the unused materials unsatisfactorily or unfit for use.
- D. The Contractor shall furnish every facility for the verification of all scales, measures and other devices which he operates.

15.09 STORAGE OF MATERIALS

Materials shall be stored so as to insure the preservation of their quality and fitness of the work.

15.10 CLEANING UP

- A. The Contractor shall, at his own expense, keep the site of his operations clean during the construction and remove all rubbish as it accumulates.
- B. On or before the completion of the work, the Contractor shall tear down and remove all temporary structures built by him, shall remove rubbish of any kind from any grounds which he has occupied, and shall restore the site to a clean and neat condition.

15.11 WATER SUPPLY

The Contractor shall provide, at his expense, such quantities of clean water as may be required for any and all purposes under the standards contained in this Code. He shall take particular care to furnish his employees with potable drinking water.

15.12 SANITARY ARRANGEMENTS

Approved sanitary conveniences for the use of laborers and others employed on the work, properly secluded from public observation, shall be constructed and maintained by the Contractor, at his own expense, in such manner and at such points as are appropriate for the work.

15.13 CARE AND PROTECTION OF WORK

From the commencement of the work until its completion and acceptance by the County, the Contractor shall be solely responsible for the care of the work, and all injury or damage to the same, from whatever cause, shall be repaired or replaced at the Contractor's expense. The County reserves the right to direct the Contractor to repair or replace said items. He shall provide suitable means of protection for all materials intended to be used in the work in progress, as well as for completed work.

15.14 PRESERVATION AND RESTORATION OF PROPERTY, TREES, MONUMENTS, ETC.

The Contractor shall not enter upon private property for any purpose without obtaining permission, and shall be responsible for the preservation of all public and private property, trees, monuments, etc., along and adjacent to the work and shall use every precaution necessary to prevent damage or injury there to. He shall use adequate precautions to prevent damage to tracks or pipes, conduits and other underground structures, and shall protect carefully from disturbance or damage all land monuments and property markers until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed, and replacement of same shall be borne by the Contractor. The Contractor shall not willfully or maliciously injure or destroy trees or shrubs and he shall not remove or cut them without proper authority. He shall be responsible for all damage or injury to property of any character, during the prosecution of the work, resulting from any act, omission or misconduct in his manner or method of executing said work or due to the non-execution thereof on the part of the Contractor; he shall restore, at his own expense, such property to a condition at least equal to that existing before such damage or injury was done, by repairing, rebuilding or otherwise restoring, as may be directed, or he shall make good such damage or injury, in an acceptable manner. Mail service shall be maintained at all times.

15.15 INDEMNIFICATION OF THE COUNTY

The Contractor shall indemnify and save harmless (including, but not limited to, compensation of attorney fees) the County and its officers, agents, and employees from all suits, actions, or claims of any character, name and description brought for or on behalf of persons or property due to any neglect in safeguarding the work, the use of unacceptable or defective material in the construction of the work, or on account of any act or omission, neglect, or misconduct of the Contractor, its agents, employees, or subcontractors.

PART 16 SURVEY CONTROLS

A. Any road constructed under the provisions of this Code shall require the Developer or Contractor to have a Maryland Registered Land Surveyor to establish the basic survey controls needed for the construction. These controls shall be maintained through all construction phases. All damaged or lost controls shall be restored promptly.

B. Roads constructed under the provisions of this Ordinance shall be staked at 50-foot intervals on tangents and at 25-foot intervals on curves along with all points of curve, tangent and intersections.

C. When survey stakes have been disturbed and/or removed during the construction of a road, the road shall be restaked in accordance with the above prior to final grading or final paving.

PART 17 CONSTRUCTION INSPECTIONS

- A. All construction activities shall be coordinated with the Department for inspection of materials, construction, and testings by the Inspector, in accordance with the Department's applicable policies and procedures. The degree to which Inspectors must be on-site for various activities of a given project will be determined by the Department on a project-specific basis.
- B. Construction of residential, commercial, or industrial roads may not be carried out without inspection from the Department. Inspection will normally be available, with the 48-hour advance notice required by the code, Monday through Friday between 7:30 a.m. and 4:00 p.m. A contractor may request inspection beyond these hours in accordance with the following:
1. Contractor's request must be made in writing to the Supervisor of Construction Inspections at least five business days in advance. The written request must detail the additional times requested (including a one hour travel time for Saturdays or Holidays) and the activity to take place.
 2. The Contractor must agree to pay, in advance, if the overtime is approved by the Director, a fee reflective of the Inspector's salary, plus a fringe cost and an administrative fee (to be specified by the Director). Fee must be paid 3 working days prior to the overtime and shall be non-refundable.
 3. The Supervisor of Construction Inspections shall determine whether the work is being otherwise conducted in a manner that such overtime inspection is necessary.
 4. The Supervisor of Construction Inspections shall determine whether an Inspector is available for the time requested.
 5. Upon recommendation from the Supervisor of Construction Inspections, the Director may approve the overtime, at his/her sole discretion, considering such factors as the nature of the work, the availability of the inspection staff, and other Departmental demands. The Director shall render his/her decision in writing.
 6. In the event of Emergency Overtime Inspection, the advance arrangements noted above will be waived. Instead, the inspection staff shall notify the Director of the need as soon as possible. Payment of inspection fees will also apply to Emergency Overtime Inspection.
- C. No materials shall be stored at the site or used in construction until the tickets for those materials have been reviewed and approved by the Inspector for verifying their suitability. The inspector shall also be provided ample opportunity to observe all construction and testing procedures as required by the plans, SHA specifications or any other applicable specifications, Department's policies and procedure, and as found necessary by him to verify their proper execution. The reports of all tests shall also be furnished to the inspector in a timely manner.

- D. All compaction and testing shall be overseen by a professional engineer, licensed in Maryland, specializing in geotechnical work or a qualified soils technician. Reports shall be submitted to the Department on a weekly basis.
- E. Prior to issuance of the construction permit, the Developer shall pay to the County the fees specified in Part 11 of this Code. The estimated cost of construction for this calculation shall be the same as that used in calculating the amount of the performance bond.
- F. Testing technicians shall remain on site at all times during the work that they are monitoring.

PART 18 ACCEPTANCE BY COUNTY

- A. All permittees and their agents and servants shall comply with all applicable provisions of this Code, and until a road constructed under the provisions of this Code is accepted for maintenance by the County, the permittees, their agents and servants, and the bond given under this Code shall remain liable for the faithful performance of the provisions. After completion and upon receipt of a written request of the permittee a final inspection shall be made of the road within fifteen (15) days, and the County Commissioners shall either accept such road upon a finding that the construction of same has complied with this Code, and release the bond; or they shall reject the road by written notification to the permittee and his surety, where a corporate bond has been posted, specifying the reasons for such rejection by reference to the particular provision of this Code which has been violated, and allow a reasonable time, to be specified therein, for such permittee or his surety to comply with the provisions of this Code. If the permittee or his surety does not thereafter, within the time specified, complete the construction according to the provisions of this Code, then the County Commissioners shall forthwith proceed to do whatever is necessary to cause the construction to comply with this Code and the permittee and his bond shall thereupon be liable for any expense incurred thereby. When a road has been completed in accordance with approved plans and so certified by the Department of Public Works, the Developer shall be responsible for maintenance and repair of the road (excluding grass mowing and snow removal) for a period of one year. The Developer shall post an acceptable guarantee with the County to insure that this maintenance responsibility is fulfilled. Any acceptance of a road by the County Commissioners shall be on behalf of the County by their written order, fully identifying the road and shall only be done upon receipt of the previously mentioned maintenance guarantee.
- B. Prior to acceptance by the County, the Developer shall submit two (2) copies of as-built plans. The Department shall review these plans to assure that the road has been constructed in accordance with the previously approved plans.
- C. The Department shall not accept private right-of-ways and roads constructed therein for maintenance. All mini-roads shall be located in private right-of-ways and shall be the responsibility of the Developer or the Homeowner's Association without any help financially or otherwise from the Department.

PART 19

STANDARD DETAILS

- A. All construction shall be completed in accordance with the applicable Standard Details R-1 through R-34 included herein.
- B. Where the details and specifications herein do not address necessary design elements, the details and specifications contained in the Maryland State Highway Administration Book of Standards, Highway and Incidental Structures and the Maryland State Highway Administration Standard Specifications for Construction and Materials shall apply, except as noted below:
 - 1. NR Inlets shall not exceed four (4) feet in depth.

CECIL COUNTY

DEPARTMENT OF PUBLIC WORKS



ROAD CODE

AND

STANDARD SPECIFICATIONS

Board of County Commissioners of Cecil County
Nelson K. Bolender
Harry A. Hepbron
Phyllis Kilby

Director of Public Works
Matheu J. Carter, P.E.

Codes 2000 Roads and Utilities Subcommittee

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Carlton L. Felty, Jr.
Michael S. McAllister
Michael Winslow

Gary Page
Michael Evans
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David Dodge

April 25, 2002