§104-31 Family Conveyance Lots Served by Private Roads

A. All family conveyance lots shall provide access to either state, county or privately owned roads. If access is on a state road, a permit is required from the MSHA.

B. A private access easement or right-of-way in width of 20 feet, a minimum surface width of 12 feet with shoulders of 4 feet in width, and a minimum depth of 4 inches compacted CR-6 or approved equal shall be provided when serving 1 to 5 building lots per Plate RD-1A of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures.

C. A private access easement or right-of-way with a minimum width of 24 feet, a surface width of 16 feet with a shoulder width of 4 feet, and a 4 inch depth of compacted CR-6 or approved equal shall be provided when serving 6 to 10 building lots per Plate RD-1A of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures.

D. Rights-of-way created within the property parcel being subdivided shall meet the current standards of the Calvert County Zoning Ordinance.

E. Unless a traffic hazard exists or the additional lot(s) shall create such, or unless the topography is such as to require storm drainage structures or easements or other surface requirements, no additional road improvements shall be required as part of the current ordinance.

F. The proposed road access shall be private, non-county owned or maintained. The developer shall be responsible for providing for road construction. Whereas road maintenance, including snow removal, repairs, and other improvements, as well as road services normally provided by the county, shall be the responsibility of all lot owners accessing the family conveyance road. A recorded access and maintenance agreement shall be required as part of the grading permit application submittal for the roadway.

G. At the applicant's expense, the private road shall be posted with a road name sign marked with a blue background with white letters to illustrate a non-county maintained road.

H. If the private road exists it shall be improved in accordance with an approved plan under a grading permit. Building permits will be issued for lots being served by the road once a public works agreement has been executed, however use and occupancy permits will be held until the base road is constructed, inspected, and approval is granted by the director.

I. If the private road is to be newly constructed it shall be constructed in accordance with an approved plan under a public works agreement. Building permits will be issued for lots being served by the road once a public works agreement has been executed, however use and occupancy permits will be held until the base road is constructed, inspected, and approval is granted by the director.

J. If there is a desire to make this right-of-way or easement a county road, it shall be upgraded to county road standards as set forth in the current ordinance and current subdivision regulations in effect at the time of said upgrading.

K. Family conveyance roadways in excess of 500 linear feet shall ~~provide~~ a 35 foot long turnout. Additional turnouts may be required based on the length of roadway. See Turnout Detail on Plate 1A of the Calvert County Construction Standards for Roads, Streets, and Incidental Structures.

§104-32 Private Roads in the Farm and Forest District

A. Access to the development shall be provided to a state or county road. If access is on a state road, a permit is required from the MSHA.

B. Private roads in the farm and forest district shall meet the standards on Plate RD-1A of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures.

C. The private road shall serve a maximum of 5 lots.

D. The proposed road access shall be private, non-county owned or maintained and shall not be petitionable to the county for maintenance. A notation of such restriction shall be placed on the plat and signed by the property owners, and shall remain in effect in perpetuity. The developer shall be responsible for providing for road construction. Whereas road maintenance, including snow removal, repairs, and other improvements, as well as road services normally provided by the county, shall be the responsibility of all lot owners accessing the private road. A recorded shared maintenance agreement shall be required as part of the public works agreement submittal.

E. At the applicant's expense, the private road shall be posted with a road name sign marked with a blue background with white letters to illustrate a non-county maintained road.

F. The private road shall be constructed in accordance with an approved plan under a public works agreement.

G. Building permits will be issued for lots being served by the road once a public works agreement has been executed, however use and occupancy permits will be held until the base road is constructed, inspected, and approval is granted by the director.

H. No lot or parcel in a subdivision, subject to these regulations, shall be transferred until a plat recording has been completed per the subdivision regulations, a public works agreement for the road improvements has been executed, and the base road approval of the platted roads has been completed by the developer and approved by Project Management & Inspections.

§104-33 Common Access Driveways

A. Common access driveways shall provide connection, like a family conveyance, to a state or county road. If access is on a state road, a permit is required from the MSHA. Common access driveways are not required where accessing an interior subdivision street, as classified by the department.

B. Construction standards are located on Plate RD-16 of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures.

C. The proposed private access shall serve a maximum of 5 lots.

D. The proposed road access shall be private, non-county owned or maintained, and shall not be petitionable in perpetuity to the county for maintenance. A notation of such restriction shall be placed on the plat and signed by the property owners. The developer shall be responsible for providing for road construction. Whereas road maintenance, including snow removal, repairs, and other improvements, as well as road services normally provided by the county, shall be the responsibility of all lot owners accessing the common access driveway. A recorded shared maintenance agreement shall be required as part of the public works agreement submittal.

E. At the applicant's expense, the private road shall be posted with a road name sign marked with a blue background with white letters to illustrate a non-county maintained road.

F. Common access driveways shall be constructed in accordance with an approved plan under a public works agreement.

G. Building permits will be issued for lots being served by the road once a public works agreement has been executed, however use and occupancy permits will be held until the base road is constructed, inspected, and approval is granted by the director.

H. No lot or parcel in a subdivision subject to these regulations shall be transferred until a plat recording has been completed per the subdivision regulations, a public works agreement for the road improvements has been executed, and the base course of the platted roads has been completed by the developer and approved by Project Management & Inspections.

§104-34 Private Roads for Industrial Subdivisions

A. Private road access to the development shall be provided to a state or county road. If access is on a state road, a permit is required from the MSHA.

B. Construction standards are located on Plate RD-8B of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures.

C. The proposed privately owned road shall serve a maximum of 5 lots.

D. The proposed road access shall be private, non-county owned and maintained and shall not be petitionable in perpetuity to the county for county maintenance. A notation of such restriction shall be placed on the plat and signed by the property owners. The developer shall be responsible for providing for road construction. Whereas road maintenance, including snow removal, repairs, and other improvements, as well as road services normally provided by the county, shall be the responsibility of all lot owners accessing the private road. A recorded shared maintenance agreement shall be required as part of the public works agreement submittal.

E. At the applicant's expense, the private road shall be posted with a road name sign marked with a blue background with white letters to illustrate a non-county maintained road.

F. The private road shall be constructed in accordance with an approved plan under a public works agreement.

G. Building permits will be issued for lots being served by the road once a public works agreement has been executed, however use and occupancy permits will be held until the base road is constructed, inspected, and approval is granted by the director.

H. No lot or parcel in a subdivision subject to these regulations shall be transferred until a plat recording has been completed per the subdivision regulations, a public works agreement for the road improvements has been executed, and the base course of the platted roads has been completed by the developer and approved by the director.

§104-35 Private Lanes

A. Private lane access shall be provided to meet the standards of this ordinance.

B The travel way shall be stabilized a minimum 16 feet wide with CR6 or bank run gravel, or an approved alternate material. Private lanes shall meet the standards on Plate RD-1B of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures.

C. Maximum grade for private lanes shall be 15%.

D. The proposed private lane shall serve a minimum of 3 lots and a maximum of 5 lots.

E. The proposed private lane shall have a 30 feet minimum right-of-way.

F. The proposed private lane shall be a maximum length of 400 feet.

G. Private lane access connection to an existing county or state road shall be in conjunction with a common access drive per Plate RD-16 of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures. If access is on a state road, a permit is required from the MSHA.

H. The proposed lane shall be private, non-county owned and maintained; and shall not be petitionable in perpetuity to the county for county ownership, or for county maintenance. A notation of such restriction shall be placed on the plat and signed by the property owners. The developer shall be responsible for providing for road construction; and the lot owners shall be responsible for maintenance including snow removal and repairs, as well as other improvements and road service normally provided by the county. A recorded shared maintenance agreement shall be required as part of the public works agreement submittal.

I. At the applicant's expense, the private road shall be posted with a road name sign marked with a blue background with white letters to illustrate a non-county maintained road.

J. The private lane shall be constructed in accordance with an approved plan under a public works agreement.

K. Building permits will be issued for lots being served by the road once a public works agreement has been executed, however use and occupancy permits will be held until the base road is constructed, inspected, and approval is granted by the director.

L. No lot or parcel in a subdivision subject to these regulations shall be transferred until a plat recording has been completed per the subdivision regulations, a public works agreement for the road improvements has been executed, and the base road approval of the platted roads has been completed by the developer and approved by Project Management & Inspections.

§104-36 Existing Serviceable Roads and Recorded Lots

A. Serviceable roads are defined as roads accessing existing homes and having a good history of maintenance as verified by the county representative.

B. Access to the development shall be provided to a state or county road. If access is on a state road, a permit is required from the MSHA.

C. An existing roadway with a minimum width of 12 feet and 4 inches of compacted CR-6 or approved equal is required for issuance of a building permit.

D. A grading permit may be required for improvements to the road.

E. At the applicant's expense, the private road shall be posted with a road name sign marked with a blue background with white letters to illustrate a non-county maintained road.

§104-37 Agri-Business Road

For commercial (retail sales) and/or agri-business developments on unsubdivided property requiring site plan approval, the applicant shall demonstrate adequate access to the site, and that this access is specifically adapted to the uses anticipated and take into account existing and proposed uses in the vicinity. The minimum adequate access shall be a 20' wide roadway surfaced with a minimum of 6 inches of graded aggregate base gravel (GAB).

§104-38 Existing Subdivisions Recorded Prior to the Adoption of the Calvert County Zoning Ordinance (July 29, 1967)

A. Private road construction or reconstruction in subdivisions created prior to the adoption of the ordinance on October 12, 1976 and platted before the adoption of the Calvert County Zoning Ordinance shall be in accordance with Plate RD-1A of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures.

B. Subdivisions meeting these criteria shall enter into road construction agreements with the Board which result in a variance set forth in the ordinance as noted above, provided that all of the following conditions have been met:

1. Said subdivision shall have been platted before the adoption of the initial Calvert County Zoning Ordinance.

2. Said subdivision contains interior private roads not contiguous to public county roads.

3. There exists a homeowners association in said subdivision with membership by a majority of the homeowners within the subdivision.

4. There is an exclusive escrow mechanism set up for the collection of fees for the maintenance and upkeep of infrastructure including but not limited to stormwater management facilities and other amenities. The funds in this escrow account shall only be used for the purpose stated herein.

5. Said subdivision has an established road maintenance program as well as a history of reasonable road maintenance.

C. Upon meeting the above conditions, the road construction agreement to be entered into shall serve as guidelines, and shall be binding on both the county and the homeowners association. The agreement shall provide:

1. The homeowners association shall be issued a grading permit for road construction after submitting and receiving approval of a written specification plan describing the work to be accomplished, or a road construction plan, both which should outline the sediment control practices to be applied and the road typical sections.

2. Under this grading permit, the homeowners association shall be allowed to construct the platted roadways specified in the description of work. In addition, the homeowners association shall be responsible for the maintenance of any of the platted roadways constructed by others.

3. The county shall provide inspection services under the grading permit.

4. Prior to issuance of use and occupancy permits, the roadway shall be constructed per Plate RD-1A, and inspected in accordance with the ordinance with the exception of surface paving.

5. The homeowners association shall agree that Calvert County shall not be required to accept the roads into the county maintenance system until such time as the roads meet county specifications, or are put into a road tax district.

6. The homeowners association shall agree to provide all maintenance including snow removal to the constructed roads within the subdivision.

§104-39 Road Tax Districts

Unless otherwise prohibited by a recorded land instrument, residents of existing, privately owned right-of-ways are eligible to petition the Board to become a publicly-owned and maintained roadway through the Road Tax District program. The Road Tax District Program and the process for petitioning is described in the annotated Code of Maryland, Article 25, Section 155a. If the petition is approved, the roadway must be constructed to the following minimum standards:

A. The minimum right-of-way width that must be provided is 30 feet.

B. The minimum constructed roadway width is 20 feet.

C. A vehicle turn-around must be provided at the terminus of the roadway as well as any additional right-of-way this requires.

§104-40 Abandonment of Right of Ways

All proposed plats that include abandonment of public or privately owned right of ways shall be reviewed by the department, and shall request a public hearing before the Board for the abandonment of said public or private right of ways, unless otherwise approved by the director. All proposed abandonments shall be accompanied by a metes and bounds description of the portion of right of way to be abandoned, as well as a plat exhibit to include bearings and distances. Requirements for the public hearing request are detailed in the Annotated Code of Maryland.

CALVERT COUNTY, MARYLAND

ROAD ORDINANCE

Part 4

STORM DRAINAGE DESIGN CRITERIA

PART 4

STORM DRAINAGE DESIGN CRITERIA

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ARTICLE IX
GENERAL PROVISIONS

§104-41 Introduction

A. Stormwater runoff is collected and conveyed in closed conduit systems (inlets and pipe culverts) and in open channel systems (ditches, channels, streams and rivers). Instructions and design criteria for the design of these systems are included herein. The information and data contained herein shall be supplemented by the use of acceptable nomographs, charts, tables, flood routing techniques, etc., published by the U.S. Department of Agriculture/Natural Resources Conservation Service, and MSHA.

B. The use of rural open storm drainage and open section roadways are encouraged for new development in the county. Preliminary study of possible problem areas, as well as pre-design consultation with the director shall lead to timely solutions of storm drainage problems.

C. Drainage plans with calculations, signed and sealed by an engineering professional representative, shall be submitted to the director for review and approval.

D. All drainage structures are to be built according to the current edition of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures, or as otherwise approved. A structure schedule specifying the Calvert County and/or MSHA detail number shall be provided on the plans.

E. Where a subdivision is traversed by a water course, stream, or other natural drainage course, the director shall require the developer to:

1. Dedicate an easement area of sufficient width to adequately dispose of the surface drainage water expected in a 50-year storm, and conforming substantially with the lines of such natural water course; or

2. Furnish by dedication sufficient easement or construction, or both, to safely dispose of such stormwater.

§104-42 Right-to-Discharge and Storm Drain Easements

A. It is the county's policy to require that all public or private storm drainage facilities, whether natural or improved, surface or subsurface, including stormwater management facilities, be within an easement or right-of-way. No structures other than those of the storm drainage system are allowed within the storm drain easements and access to these areas shall not be restricted.

1. Subsurface drainage facilities that convey drainage flow from a public right-of-way shall be located within a drainage easement. This easement shall be conveyed to the county unless the county stipulates other limits of maintenance responsibility.

2. Surface drainage facilities that convey drainage flow from a public right-of-way shall be located within a drainage easement. For flow into natural drainage courses or open ground, a right to discharge shall be established. These easements shall not be conveyed to the county unless the county stipulates other limits of maintenance responsibility.

3. On-site surface drainage facilities conveying stormwater shall have easements and stipulate limits of maintenance responsibility.

4. Stormwater management facilities shall be located within a drainage (private) or utility (public) easement. They shall include an access strip of a minimum of 10' leading to and surrounding the facility.

5. All existing or proposed surface drainage facilities such as swales, streams, unpaved and paved channels, etc., located within private drainage easements shall be the legal responsibility of the property owner or, if established by agreement, a homeowners association for operation and maintenance.

6. For natural drainage systems, the 100-year floodplain shall be delineated by a drainage and utility easement or, unless the county stipulates other limits of maintenance responsibility, conveyed to the county.

7. Improved channels within the 100-year floodplain shall be within a drainage and utility easement extending beyond the floodplain on both sides of the channel for purpose of access and maintenance. The limit of the easement shall be defined by bearings and distances and coordinate value, be tied to property lines, and show the flood plain elevations at all bearing changes and at intervals not exceeding 200 feet between bearing changes.

B. Right-to-discharge for drainage systems, excluding individual residential lots, shall be required from upstream property owners when one or more of the following conditions occur:

1. The point at which the flow crosses the property lines is altered in location or concentration. The developer shall also be required to construct all facilities to direct stormwater runoff to the new point of discharge.

2. There is an existing development upstream with a closed-conduit system and the hydraulic grade line or energy grade line at the next upstream structure is raised above its computed value prior to development of the site.

3. There is existing development upstream with an open-channel system and the hydraulic grade line in the open channel at the property line is raised above its computed value prior to development of the site.

4. There is undeveloped land upstream with a proposed project improvement, other than a bridge or culvert, which would raise the hydraulic grade line at the property line above the 100-year floodplain based on the existing natural upstream channel and the ultimate runoff of the fully developed watershed. An easement shall be required only if the backwater or headwater at the property line exceeds the previously defined 100-year floodplain for a bridge or a culvert. In no case shall this increase be allowed at the property line, if it causes flooding or increased flooding of existing structures.

5. Any other situations which might adversely impact the upstream or downstream property as determined by the director.

C. The standard storm drain easement width shall be a minimum of 20 feet.

ARTICLE X
STORM DRAINAGE IMPACT STATEMENT

§104-43 Study of Impact on Downstream Development

A. The developer shall conduct a local study of the impact on existing downstream development and/or conditions to be caused by proposed upstream development. This study shall be submitted to the Engineering Division prior to final plan approval. This study shall include a development impact statement to the county addressing the following:

1. Changes to runoff factors and discharge rates.

2. Existing open channel or closed conduit conditions compared to proposed designs.

3. The effect a 100-year flood plain has on existing development compared to the effect of a 100-year flood plain on proposed development.

4. Changes in downstream hydraulic condition, i.e., velocity, discharge and flood plain limits.

5. The necessity and practicality of stormwater detention for proposed development within the watershed.

6. Stormwater management facilities proposed.

7. The danger reach downstream as the result of failure or partial blockage of water detention and stormwater management facilities.

8. The effect that planned upstream development shall have on existing or proposed downstream development in accordance with the County Master Plan and/or the Zoning Ordinance.

9. The effect proposed development shall have on downstream property owners.

10. Any other comments as noted by the director.

B. This study is intended to give both the director and the developer a thorough insight into the problems that may result from new development as well as serve as a design guideline for proposed development.

C. The director may reduce the scope of this study based on the size, type and scope of the proposed development.

ARTICLE XI
100-YEAR FLOOD PLAIN

§104-44 General

A. At the developer's option, he may elect to designate the 100-year flood plain by either:

1. Specifying the contour limit below which no development construction shall take place.

2. Identifying streams or open channels for which the flow for a 10-year storm frequency equals or exceeds 100 cubic feet per second. Computations, plan view, cross sections at major stream changes, and profiles of affected water courses shall be submitted to the director for approval.

B. The 100-year flood plain easements shall be shown on record plats before approval of plat can be obtained. Please refer to the FEMA map (standards).

ARTICLE XII
OVERLAND FLOW OF A 100-YEAR FREQUENCY RAIN STORM

§104-45 General

A. The director may require a study showing the routing of a 100-year storm through a proposed development and proposed storm drainage system.

B. Factors to be considered in requiring a 100-year storm routing are size and type of development, proposed lot and road grading, proximity of streams, location of septic fields, possibility of property damage, etc. Proposed developments shall be examined individually based on the above criteria, the development impact statement, and other contributing factors.

ARTICLE XIII

ESTIMATION OF RUNOFF

A. For drainage areas of 100 acres or less, runoff may be estimated by the rational method. However, if stormwater management is to be provided, then the requirements of the Calvert County Stormwater Management Ordinance shall apply. For large drainage areas such as flood plains, runoff shall be estimated by using the Soil Conservation Service Method or another recognized method or procedure acceptable to the director.

B. The rational method is provided as follows:

1. Q=CIA where

Q = Quantity of runoff in cubic feet per second

C = Coefficient of runoff (ratio of runoff to rainfall)

I = Rainfall intensity in inches per hour for a given storm frequency and time of concentration.

A = Drainage area in acres

2. The runoff coefficient, C, is a percentage factor which represents the portion of the total quantity of water falling on the area that remains as runoff.

   a. The runoff coefficient used in computing flow to a point under consideration shall be a composite of the C factors for all the areas contributing to this point.

   b. In areas where the nature of future developments is uncertain, the engineering professional representative shall consider the future development in accordance with the plan for the county and the zoning maps of the county using the C factor that reflects the highest runoff coefficient. Runoff factors for various types of soil, ground cover and ground slopes are shown in Plate SD-1 of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures.

3. Rainfall Intensity, I, shall be determined from the rainfall intensity curves shown in Plate SD-2, "Rainfall Intensity Chart" of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures. These curves indicate maximum intensities for times of concentration from 5 minutes to 2 hours, occurring with a frequency of 2, 5, 10, 20, 50, and 100 years. Storm frequency used in design shall be as follows:

   a. A 10-year storm frequency shall be used for all drainage systems for which the 10-year design discharge is less than 100 cubic feet per second.

   b. A 20-year storm frequency shall be used for all sump areas.

c. A 50-year storm frequency shall be used for design of major cross drains, box culverts and channels for which the 10-year runoff exceeds 100 cubic feet per second. The design shall be checked for a 100-year storm frequency to establish the limits for a 100-year flood plain and review the effects of a 100-year design flow.

d. A 100-year storm frequency shall be used for the design of cross culverts that have a drainage area of over 400 acres or lie within a 100-year flood plain. Appropriate rainfall studies may be used at the director's discretion.

4. The time of concentration TC shall be the total time required for runoff to travel from the farthest point of the drainage area to the point of concentration.

a. Overland flow time shall be estimated using Plate SD-3 of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures, "Overland Sheet Flow Chart" in areas that are ultimately non-enclosed, and shall be the sum of the duration of flow for all applicable types such as overland flow, swale flow, ditch flow and pipe flow.

b. Overland flow through most undeveloped land shall become channel flow within 400 feet.

c. The length of overland flow within subdivisions shall vary depending on the lot size and grading, but it usually becomes swale flow within 75 feet to 100 feet.

d. Stream or channel flow time should be computed by estimating the average velocity in each type of course and dividing it into the total length of flow through that course.

e. The time for pipe flow can be established using pipe flow charts for partial or full depth flow, whichever is applicable.

f. In no instance shall a time of concentration of less than 5 minutes be used for any drainage computation.

g. In drainage areas where more than 60 percent of the land usage is, or shall be commercial, or any type of development where more than 50 percent of the area is impervious, a maximum time of concentration of 7 minutes shall be used to the first inlet or structure for a closed drainage system.

h. The maximum time of concentration to the first inlet or drainage structure of a closed drainage system for residential developments shall be as indicated on Plate SD-1 of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures.

5. All areas delivering runoff to the point under consideration shall be included in the drainage area, A. The extent of the drainage area should be determined using the highest order of information available from one or a combination of the following sources:

a. Photogrammetic Maps

b. U.S.G.S. Quadrangle Maps

c. Maryland Geological Survey Topographic Maps

d. Field observations in conjunction with above maps. The engineering professional representative shall certify that the topography has been field verified.

6. While the rational method for computing runoff is an accepted, trusted method, it should not be considered standard. When working with homogenous hydrological units, the rational method is acceptable, however, whenever hydrological units are to be non-homogenous, other methods of computing runoff should be used.

§104-46 Soil Conservation Service Method

A. For drainage areas greater than 100 acres but less than 2,000 acres, the runoff curve method as adopted by the U.S. Department of Agriculture/NRCS described in Chapter 2 of their Engineering Field Manual or TR-55 is to be used to estimate runoff.

B. Whenever it becomes necessary to make a transition from use of the rational method of computing runoff to the runoff curve or other approved method for drainage areas, the discharge, Q shall not be reduced as the result of computations made with the new method. The Q shall remain constant until it increases as the result of computations made with the new method. In computations involving fringe areas of 100 acres the rational and the runoff curve method shall be computed and the governing method shall be used. When proposed upstream development and existing downstream development share a common storm drain line, the approved discharge at the common point of the existing development shall be used as the maximum allowable discharge Q at the common point for the proposed upstream development.

ARTICLE XIV
PIPE SIZE DESIGN

§104-47 Size

A. Generally, storm drain pipes shall be sized in accordance with the following:

1. Closed pipe systems - Manning's Formula and the criteria for "Hydraulic Gradient" included within this article.

2. Cross culverts - Hydraulic Circular #5 prepared by the U.S. Department of Commerce, flood plain information or otherwise approved by the director.

B. Deviations from the above criteria shall require prior approval of the director. If, in the opinion of the director, it becomes necessary, these criteria may be reduced to cause detention or increased to prevent flooding.

C. The minimum diameter of storm drain pipe shall be 15 inches, or the equivalent elliptical or arch pipe.

§104-48 Detailed Material Requirements

A. Storm drain pipes, structural plate pipes, pipe arches and box culverts shall meet the requirements of the following referenced standards or specifications:

1. Corrugated polyethylene drainage tubing, type PS 20 - AASHTO M 252.

2. Corrugated polyethylene pipe 12 inches to 36 inches diameter - AASHTO M 294.

3. Class PS 50 polyvinyl chloride (PVC) pipe - AASHTO M 278.

4. Pre-cast reinforced concrete box sections for culverts, and storm drains, with less than 2 feet of cover subject to highway loadings - AASHTO M 273.

5. Pre-cast reinforced concrete box sections for culverts, and storm drains - AASHTO M 273.

6. Reinforced concrete culvert and storm drain pipe - AASHTO M 170.

7. Reinforced concrete arch culvert and storm drain pipe - AASHTO M 206.

8. Reinforced concrete elliptical culvert and storm drain pipe – AASHTO M 207.

9. Metallic (zinc or aluminum-zinc alloy) coated corrugated steel culverts and underdrains - AASHTO M 36.

10. Pre-coated galvanized corrugated metal driveway culverts and underdrains - AASHTO M 245. The minimum allowable gauge shall be 14 gauge.

11. Corrugated aluminum alloy culverts and underdrains - AASHTO M 196. The minimum allowable gauge shall be 14 gauge.

12. Structural plate for pipe arches, and arches - AASHTO M 167.

13. Aluminum alloy structural plate for field bolted conduits - AASHTO M 219.

B. Galvanized corrugated metal pipe shall not be accepted under proposed roadway fill areas or for stormwater management devices.

C. Prefabricated end sections shall be used in lieu of headwalls wherever possible.

D. In the design of roadway cross drains, the culverts shall operate under either inlet or outlet control conditions. The value of HW/D may be greater than 1.2 only with the approval of the director.

E. When outlet control is encountered applicable charts from the Hydraulic Charts for the selection of highway culverts should be used to compute pipe sizes and/or highway elevations.

F. The computed highwater created by either inlet or outlet control shall not cause damage to existing properties or proposed development and shall be at least 0.5 feet below the edge of the roadway shoulder at the low point in the roadway profile.

G. When a change in direction or slope of pipe is required, an inlet, manhole, or accessible bend structure shall be placed at the point of change of direction.

H. The minimum slope of pipe shall not be less than 0.50 percent and the velocity in the pipe shall not be less than 2 fps unless otherwise approved by the director. The maximum allowable slope for storm drain pipe shall be 15 percent, beyond which designed anchors shall be provided at a maximum 15 feet spacing.

I. The crown of all pipes shall be at least 6 inches below the subbase elevation of the pavements or 1.5 feet from finished grade, whichever is greater.

J. A minimum of 1 foot of clearance shall be provided between storm drain pipe and water and sewer lines.

K. Generally, pipe sizes shall not be reduced in the direction of the flow.

L. At inlets, manholes, etc., the invert of the pipes upstream shall be a minimum of 0.1 foot above the invert of the pipes downstream.

ARTICLE XV
ROADSIDE DITCHES

§104-49 Hydraulic Design

The hydraulic design of ditches shall establish that the proposed ditch is sufficient to carry the design 10-year peak flow, and the type of lining necessary to prevent scour or undesirable sedimentation in the ditch.

§104-50 Location and Alignment

Drainage ditches, swales, and channels shall be located and aligned in order to alter the original drainage course as little as possible. However, it shall generally be considered desirable; to eliminate bends, to cross existing and/or future roads normal to the road, and to eliminate channels running through the center of a property where relocation near or on a property line is feasible. The shape and size of all ditches shall be so designed as to create the most economically efficient and scour resistant channel possible. The use of ditches and swales with 3:1 or flatter slopes is encouraged, however the maximum side slope permissible is 2:1 in existing ground and 1:1 in rock. The minimum centerline slope of roadside ditches shall be 1 percent.

§104-51 Limiting Velocities

The maximum ditch design velocity shall be taken from Plate SD-7 of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures containing ditch design velocities, per the 10-year design storm.

§104-52 Outfall Erosion Control

Particular attention should be given to outfall situations for all storm drainage systems including single culverts. Outfall velocities shall be reduced sufficiently to avoid erosion in the downstream channel, stream or ground. Storm water should be conveyed structurally to the lowest point possible prior to release at an outfall. Reduction of outfall velocities can be accomplished by the use of ungrouted rip rap or other approved methods. An outfall analysis complete with cross-sections shall be submitted for all outfalls. The engineering professional representative shall certify on the plans that there shall be no adverse impact on downstream properties.

ARTICLE XVI
STORM SEWERS

§104-53 Design

A. Storm drains and all closed systems passing longitudinally or transversely to the roadway shall be designed so that the hydraulic gradient for the 10-year storm shall be 1.0 foot below the bottom of the manhole covers and inlet grates. In determining the hydraulic gradient, Manning's Formula, or charts derived from Manning's Formula, with proper "n" value as selected from "Manning's Formula – Value of 'n,'" as found on Plate SD-6 of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures shall be used. The hydraulic gradient shall be determined in total length. Inlets may be spaced to pick up only a portion of the gutter flow for the 10-year storm, but storm drains shall be designed for the total flow from the design storm at any location.

B. Details for all proposed drainage structures, and structure and pipe schedules shall be provided on the plans.

C. Pipe profiles are required for all storm drain systems including public and private roads, commercial sites, and residential lots.

§104-54 Inlets

A. Inlets shall be spaced to collect runoff from the 10-year storm and the 20-year storm at sump areas. The allowable spread of water in a curb or curb and gutter section shall be 8 feet on residential/local roads, and 8 feet on collector roadways. Inlets shall be located on the upgrade side of all public road intersections, at median breaks, and in superelevation transitions approximately 50 feet ahead of the section where the cross slope is level. Inlets shall be spaced to intercept at least 85 percent of the total gutter flow where practicable. Bypass flow shall be included in the total gutter flow contributing to the next inlet downstream, unless it is otherwise intercepted.

B. Maximum allowable flow through an intersection with concrete curb and gutter shall be 3 cubic feet per second or 4 cubic feet per second for an extreme uphill intersection. Maximum depth of inlets shall not exceed 20 feet unless otherwise approved by the director.

C. Structures proposed in the county road pavement area shall not be permitted unless prior approval is granted by the director.

D. All grated inlets within county right-of-ways shall have traffic bearing, bicycle proof grates.

E. Where curbs are used, runoff from cut slopes and areas off the right-of-way shall be intercepted by ditches in order to prevent mud and debris from being carried onto the pavement, particularly on the high side of superelevated highways.

§104-55 Other Structures

A. Bend structures shall be provided on all storm drains, when deflection requirements exceed manufactured recommendations. Bend structures shall include pipe bends and elbows, manholes, inlets, horizontal pipe curves, or special design structures. The minimum centerline radius of the flow line within the bend structure shall be 2 times the diameter of the pipe. If the length of the curve shall not fit within a standard structure, a special structure shall be designed.

B. Manholes shall be provided when the length of pipe exceeds 300 feet, and at all junctions and bend structures for access.

C. The maximum depth of all storm drain structures shall not exceed 20 feet unless approved by the director.

ARTICLE XVII
HYDRAULIC DESIGN

§104-56 Manning's Formula

Manning's Formula $\{v=(1.486/n)\ r^{2/3}\ \ s^{1/2}\}$ shall be used for the design of storm drains, ditches, channels, and other waterways. The values of "n" to be used for various types of conduits and channels are given in Plate SD-6 of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures.

§104-57 Hydraulic Gradient

When the tailwater is not known or cannot be accurately estimated, the hydraulic gradient shall begin at the crown of the proposed drain, and shall not fall below the top of pipe. For structure loss coefficients (Kb), see "Factors For Computation Of Losses Within Storm Drainage Structures" on Plate SD-6 of The Calvert County Construction Standards for Roads, Streets, and Incidental Structures. The hydraulic gradient may be above the crown of the culvert, but shall be held 1 foot below the bottom of manhole covers and inlet grates. When the hydraulic gradient exceeds 1 foot above the crown of the pipe, special treatment of pipe joints, i.e., rubber gaskets or concrete collars, shall be required.

CALVERT COUNTY, MARYLAND

ROAD ORDINANCE

PART 5

PUBLIC WORKS AGREEMENT

PART 5

PUBLIC WORKS AGREEMENT

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ARTICLE XVIII

PUBLIC WORKS AGREEMENT

§104-58 Submission of Suitable Public Works Agreement

A. No person shall improve and/or construct any public road(s), or water and/or sewer facilities within the public road right of way, without first deeding the right(s)-of-way or any widening strips required for development of a subdivision to the Board. The department shall be the repository of all original road deeds and widening strips.

B. No person shall improve and/or construct any road(s), or water and/or sewer facilities within the road right of way, without first obtaining, and executing the applicable legal agreements with the county. Such agreements shall be assignable upon application to and approval by the Engineering Division.

C. No lot or parcel in a subdivision shall be transferred until a public works agreement for the road improvements has been executed, the base road construction is completed, inspected and approved by Project Management & Inspections and the director, in accordance with the current Calvert County Zoning Ordinance.

D. Public Works Agreement Application

1. Application for the public works agreement (public and private) for road construction shall be made on forms provided by the Engineering Division.

2. The two types of legal agreements required for road construction are:

a. Public Works Agreement (public) for public road development, which requires deeding the right-of-way to the county, including but not limited to:

1) New residential

2) Town house roads

3) Commercial and industrial subdivisions

4) Existing recorded rights-of-way where there is no established homeowners agreement.

b. Public Works Agreement (private) for private road development, which does not require deeding the rights-of-way to the county including but not limited to:

1) Industrial subdivision roads - five (5) or fewer lots

2) Town house roads

3) Private lanes

4) Common access drives

5) Farm and Forest Districts, 20+ acre lots

6) Shared driveways

7) Family Conveyance right of way

8) Reduced pipe stems

E. Public Works Agreement Submission

1. Before a public works agreement application is reviewed and approved, the following documents, when applicable, shall be submitted to the Engineering Division.

2. A public works agreement submittal checklist shall be submitted, and shall include a signed acknowledgement that the public works agreement and all attached documents are complete and in compliance with the checklist requirements.

3. A public works agreement (public and/or private), application, complete, with original signatures shall be submitted, and include the following as necessary:

   a. In the event that an intended contract purchase has not taken place, the owner and the contract purchaser shall sign the authorization to enter into public works agreement giving the contract purchaser the right to enter into the public works agreement.

   b. All persons having an interest in the property shall sign, and have notarized, the grant of temporary easement. This easement permits the county to enter upon the subdivision property and complete the bonded construction in the event the developer fails to comply as set forth in the public works agreement. Unless the developer is in default and the county has called the surety, the rights granted under the easement shall lapse upon release of the sureties posted to guarantee construction of the improvements and amenities. Schedule A is also required as a part of the temporary easement.

4. A current material and construction items cost estimate form(s) for the following improvements:

   a. Road Construction

   b. Stormwater Management

c. Water and/or Sewer

d. Road Signs and Pavement Markings

e. Amenities

5. Public works agreement surety for the following items:

a. Base road construction, base maintenance, and surface construction

b. Stormwater management

c. Water and/or sewer

d. Road signs and pavement markings

e. Amenities

6. Five sets of paper copies of the complete road construction plans with all final stamps, folded to approximately 9x12 with the title block showing, as required by the Engineering Division

7. Two sets of paper copies of the approved site plan, when applicable, with final stamps, folded to approximately 9x12 with the title block showing, as required by the Engineering Division

8. Stormwater management documents, executed by the applicant, including:

a. Inspection and maintenance of private on-site stormwater management facility

b. Grant of stormwater management and/or drainage easement and right-of-way to the Board of County Commissioners of Calvert County, Maryland

9. Preliminary approval letter, 1 copy

10. Deed & current title report dated not more than 15 days prior to the date of submission, to include documents referenced in the title report (only if the roads involved shall be public)

a. The developer shall deed to the county, and the county shall accept, by good and marketable title, the fee simple road bed(s) and/or easements shown for the said road(s) and/or drainage facilities in fee simple, free and clear of all liens and encumbrances.

b. The developer shall also furnish to the county, a current certificate of title issued by a recognized title insurance company or by an attorney-at-law. The title report is not to be submitted until the public works agreement has been reviewed and approved by the director, and is ready to submit to the county attorney.

c. The county shall accept title to the roads upon acceptance of the agreement.

11. Widening strip deed(s) recorded as required, 1 original and 1 copy. The original deed must be in possession by the department or the Public Works Agreement will not be executed.

12. Recorded subdivision plat(s), 1 copy

13. Roadway buffer receipt, from Planning & Zoning, 1 copy

14. Approved MSHA entrance permit and entrance plan, 1 copy of each

15. Declaration of Easement and Maintenance Site Amenities, (i.e., sidewalk, lighting, etc.), to be recorded upon execution of the agreement

16. Recorded access and maintenance agreement for shared access easements, 1 copy

17. Authorization of Signature letter

18. License Agreement for Ornamental Signs in the County Right of Way.

F. Public Works Agreement Review

1. The public works agreement package shall be submitted to the Engineering Division. Original documents are required unless otherwise directed.

2. It shall be reviewed in its entirety by the Engineering Division and the director, and in turn transmitted to the county attorney for legal review and execution.

3. If installation of utilities is a part of the public works agreement, the package shall also be transmitted to The Water & Sewerage Division for review.

4. If the package is denied by any agency, written comments shall be sent to the developer.

5. It shall be at the discretion of the Engineering Division whether comments shall be returned to the developer after each individual review or consolidated from all review agencies.

6. After comments have been addressed and the package is returned to the Engineering Division, the review process shall continue.

7. This process shall be repeated as needed until the package has been approved by all reviewing agencies.

8. Once the package has been approved, the developer shall schedule separate pre-construction meetings with Soil Conservation, and then immediately following with Public Works. The developer shall then pay the grading permit application fee to Inspections & Permits.

9. The grading permit for road construction shall be presented at the pre-construction meeting.

10. Construction may then commence.

G. Public Works Agreement Expiration

The public works agreement shall stay in effect for a minimum of 3 years from the original public works agreement submittal date.

H. Public Works Agreement Extension

1. In cases where the public works agreement is near expiration, and the job is not complete, it shall be the responsibility of the developer to request an extension of the public works agreement stating the reasons an extension should be granted.

2. An extension request, a most current schedule of costs, and an extension of bonding from the bank or bonding institution shall be included in the extension request submittal. Extensions shall be requested in 1 year intervals.

3. The county shall conduct a site inspection to assure the project status is suitable for extension. The director has the right to approve or deny any extension requests.

4. The developer shall be notified in writing of the status of the request.

5. If an extension is denied, a new public works agreement shall be required and all bonding costs and inspection fees shall be recalculated to reflect the current policy.

§104-59 Submission of Suitable Public Works Agreement Surety

A. Public Works Agreement Surety Submittal

1. Depending on the bonding method, the developer shall be required to post public works agreement sureties in amounts equal to the following:

a. The developer shall post two sureties: one guaranteeing base construction and base maintenance, and the other for surface construction.

1) For bonding method A, the amount of the sureties posted shall equal 25% of the base construction cost plus 125% of the surface construction costs as submitted and approved on the materials and construction items cost estimate, and tabulated as directed using the most current unit price sheet provided by the Engineering Division at the time of submittal. The base construction and base maintenance surety shall remain in full force and effect until the base roads are completed by the developer, approved by the director, and in turn acceptance of a current surface construction surety is verified by the Engineering Division. The surface construction surety shall remain in full force and effect until the surface roads are completed by the developer, approved by the director, and in turn a warranty bond accepted and approved by the Engineering Division. Under this bonding method, upon submission and approval of a satisfactory surety, Public Works Agreement and other submittals deemed necessary by DPW, a grading permit shall be issued for road construction. Upon completion and approval of the base road construction, which shall include: the inspection of the bituminous base course, certification of materials and proof roll, submittal of the compaction reports, submittal of Engineering Certification, and the submittal of as-built plans, DPW shall recommend to the Inspections and Permits Division that building permits and use and occupancy permits be issued in the normal course.

2) For bonding method B, the amount of the sureties posted shall equal 110% of the base construction cost plus 125% of the surface construction costs as submitted and approved on the materials and construction items cost estimate, and tabulated as directed using the most current unit price sheet provided by the Engineering Division at the time of submittal. The base construction and base maintenance surety shall remain in full force and effect until the base roads are completed by the developer, approved by the director, and in turn acceptance of a current surface construction surety is verified by the Engineering Division. The surface construction surety shall remain in full force and effect until the surface roads are completed by the developer, approved by the director, and in turn a warranty bond accepted and approved by the Engineering Division. Under this bonding method, upon submission and approval of a satisfactory surety, Public Works Agreement and other submittals deemed necessary by the DPW, a grading permit shall be issued for road construction and DPW shall recommend to the Inspections and Permits Division that building permits be issued in the normal course. Upon completion and approval of the base road construction, which shall include: the inspection of the bituminous base course, certification of materials and proof roll, submittal of the compaction reports, submittal of Engineering Certification, and the submittal of as-built plans, DPW shall recommend to the Inspections and Permits Division that use and occupancy permits be issued in the normal course.

b. The developer shall post one surety guaranteeing stormwater management. The surety posted shall equal 125% of cost as submitted, and approved, on the materials and construction items cost estimate and tabulated as directed using the most current unit price sheet provided by the Engineering Division at the time of submittal. The surety shall remain in full force and effect until completed by the developer, and approved by the director.

c. The developer shall post one surety guaranteeing the construction of water and/or sewer facilities. The surety posted shall equal 125% of the cost as submitted, and approved, on the materials and construction items cost estimate and tabulated as directed using the most current unit price sheet provided by the Engineering Division at the time of submittal. The surety shall remain in full force and effect until completed by the developer, approved by the director and in turn a warranty bond accepted, if applicable.

d. The developer shall post one surety guaranteeing the installation of road signs and pavement markings. The surety posted shall equal 125% of the cost as submitted, and approved, on the materials and construction items cost estimate and tabulated as directed using the most current unit price sheet provided by the Engineering Division at the time of submittal. The surety shall remain in full force and effect until completed by the developer, and approved by the Transportation Division as part of the base and/or surface final approval.

e. The developer shall post a surety guaranteeing each amenity as required by the Planning Commission. Each surety posted shall equal 125% of the amenity cost as submitted, and approved, on the materials and construction items cost estimate and tabulated as directed using the most current unit price sheet provided by the Engineering Division at the time of submittal. Each surety shall remain in full force and effect until that amenity is

completed by the developer, approved by the appropriate county agencies, and in turn a warranty bond accepted, if applicable.

2. The surety shall accompany the public works agreement, and be held by the Engineering Division.

3. The surety shall be in the form of cash, a cashiers check, personal check, irrevocable letter of credit, and/or corporate bond using a bond form approved by the county attorney, or any other type of surety approved by the Board. Letters of credit and corporate bonds shall be from an institution with the authority to transact business in Maryland.

4. If cash, a cashiers check, and/or personal check is offered as surety, it shall be deposited with the treasurer, who shall give his/her official receipt thereof stipulating that said payment has been deposited in compliance with and subject to the provisions of this section. No interest shall be paid on said sureties.

5. Surety reductions shall be approved on a case by case basis, and approved by the director.

B. Public Works Agreement Surety Expiration

The public works agreement and sureties shall expire the same day, as required by this ordinance or as extended by Section §104-58.

C. Public Works Agreement Surety Release

1. No surety covering construction under a public works agreement shall be released until the construction has been completed, inspected, and approved by the director.

2. If cash, a cashiers check, and/or personal check are offered as surety, the refund payment shall be approved for release by the Engineering Division. Disbursement is made by the treasurer.

3. If a letter of credit or corporate bond is offered as surety, the original document shall be collected from the Engineering Division, and signed for by the developer or an authorized agent of said developer.

D. Public Works Agreement Surety Forfeiture

If construction is not completed per the approved plans in the time frame allotted by the public works agreement, and the developer has not taken any action to correct the issues, the surety shall be forfeited to the county at the discretion of the director. The bonding institution may choose to complete all of the construction according to such plans, specifications and design standards as approved for the public works agreement.

ARTICLE XIX
PUBLIC WORKS AGREEMENT WARRANTY

§104-60 Warranty

A. Road

1. The developer shall warrant the road(s) for a minimum of 1 year or longer, as determined by the director, against latent defects in the roadway, storm drainage facility, and damages resulting from construction equipment and vehicles. Bonding is 10% of the total cost estimate. Please refer to the schedule of costs for bond amount.

2. A surety shall secure the obligations of this warranty.

3. The warranty period shall begin after the final approval of the road construction, approval of all applicable amenities, and county acceptance of an approved warranty surety.

4. The warranty may be posted at the time of the execution of the public works agreement, but in no event later than the acceptance of the roadway construction and release of the public works agreement surety.

5. The surety shall be released at the end of the approved warranty period, provided the road has final inspection approval.

B. Water & Sewer

1. The developer shall warrant the water and/or sewer facility for a minimum of 1 year against latent defects in the system(s) during the operation and maintenance period and damages from operation of construction equipment and vehicles.

2. A water & sewer maintenance agreement and surety shall secure the obligations of this warranty.

3. The warranty period shall begin after final acceptance of ownership, operation and maintenance of the system(s), or the Water & Sewerage Division Chief can be assured the system(s) shall perform as designed at full capacity, and the after the county executes the maintenance agreement and surety.

4. The warranty may be posted at the time of the execution of the public works agreement, but in no event later than the acceptance of the roadway construction and release of the public works agreement surety.

5. The surety shall be released at the end of the approved warranty period, provided the road has final inspection approval.

§104-61 Submission of Suitable Warranty Surety

A. Warranty Surety Submittal

1. These sureties shall be in the form of cash, cashiers check, personal check, irrevocable letter of credit, and/or corporate bond using a bond form approved by the county attorney, or any other type of surety approved by the Board.

   a. Letters of credit and corporate bonds shall be from an institution with the authority to transact business in Maryland.

   b. If cash, a cashiers check, and/or personal check is offered as surety, it shall be deposited with the treasurer, who shall give his/her official receipt thereof stipulating that said payment has been deposited in compliance with and subject to the provisions of this section. No interest shall be paid on said sureties.

2. Surety reductions shall be approved on a case by case basis and approved by the director.

B. Warranty Surety Expiration

The Surety shall expire in a minimum of 1 year, as directed by the director, from the submission of the warranty as required by this ordinance.

C. Warranty Surety Release

1. The warranty surety covering the construction under a public works agreement shall not be released until the director has accepted the road construction after the warranty period. After acceptance of public road(s) the county shall acquire maintenance.

2. If cash, a cashiers check, and/or personal check is offered as surety, the refund payment shall be released by the Engineering Division directly through Finance & Budget and the treasurer.

3. If a letter of credit or corporate bond is offered as surety, the original document shall be collected from the Engineering Division, and signed for by the developer or an authorized agent of said developer.

D. Warranty Surety Forfeiture

If defects are not corrected per the approved plans in the time frame allotted by the warranty, and the developer has not taken any action to correct the issues, the surety shall be forfeited to the county at the discretion of the director. The bonding institution may choose to complete all of the construction according to such plans, specifications and design standards as approved for the public works agreement.

§104-62 Public Works Agreement Phasing

Upon written request by the developer, road plans previously approved by the department may be divided into sub-phases for the purposes of creating multiple public works agreements. Any such request may be approved by the director, provided that the application meets all of the following criteria:

A. The preliminary approval from the Planning Commission for the associated subdivision must be current at the time of application.

B. The proposed sub-phasing may not contradict or impair the functionality of any of the requirements set forth in the preliminary approval letter from the Planning Commission.

C. The overall road plan approval for the subdivision from the department must be current at the time of application.

D. The proposed sub-phases shall be designed and constructed on a completely standalone basis such that no sub-phase shall rely on future construction for fulfillment of design requirements. A temporary tee-turn-around may be proposed and constructed on certain roads per the requirements of §104-25, "Cul-De-Sacs and Tee-Turn-Arounds" of this ordinance. The developer is responsible for ensuring that all design requirements imposed by all departments and agencies having regulatory jurisdiction are met by the proposed sub-phasing.

E. Any improvements to existing public infrastructure that are proposed within the preliminary approval letter from the Planning Commission or on the road plans, shall be fully bonded with the first sub-phase that is presented for public works agreement, and the improvements to existing public infrastructure must occur along with the construction of the first sub-phase regardless of when other sub phases get developed unless authorized by the director otherwise.

F. Any other criteria deemed necessary by the director for the protection of the public health, safety and welfare.

CALVERT COUNTY, MARYLAND

ROAD ORDINANCE

PART 6

STRUCTURES

PART 6
STRUCTURES
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ARTICLE XX

General

A. All fixed objects such as street light poles, fire hydrants, and utility pedestals installed in the county right-of-way shall be of breakaway type, meeting AASHTO construction specifications. Dynamic performance for breakaway objects shall be evaluated in accordance with current AASHTO specifications.

B. A minimum 6' lateral clearance is required. If sufficient right-of-way or easement is not available for a 10' clear zone, all installations shall be placed "as near as practical" to the edge of the public right-of-way.

C. The county reserves the right to remove, without compensation, any unauthorized structures located within the public rights-of-way and/or easements.

D. The county shall not provide maintenance of these structures.

§104-63 Road Signs

Road name, regulatory, warning, and guide signs shall be erected on all county roads, as shown on the approved signing and marking plan. These signs shall comply with the current issue of the MUTCD.

A. New Subdivisions

1. Cost estimates for road signage shall be included on the materials and construction items cost estimate form and submitted with the signing and marking plan. This estimate shall include all costs associated with the acquisition, location, and installation by the developer. Costs shall be tabulated using the most current unit price sheet provided by the Engineering Division at the time of submittal. The approved estimate and appropriate bonding shall be a part of the public works agreement submittal for the project.

2. The developer shall install the signs prior to base road final approval. Once the base road final approval has been granted, the county shall maintain all road signs installed on public roads.

3. All private road name signs shall have a blue background with white letters to illustrate a non-county maintained road, and a permanent sign stating the road is not maintained by the county shall be erected.

B. Ornamental Signs

The use of ornamental or decorative road signs is discouraged by this ordinance. However, should a community or developer elect to install this type of signing, this can be done at their expense, and the signing shall be limited to road name signage. Size, shape, color, retro reflectivity, and installation shall conform to the requirements of the MUTCD. All ornamental signage shall be shown on the sign and marking plan. The developer shall submit a license agreement for ornamental signs in the county right of way with the public works agreement. The signage shall be subject to inspection prior to the base road final approval.

§104-64 Mailboxes and Newspaper Delivery Boxes

Mailboxes placed in the Calvert County right-of-way shall conform to U.S. Postal Service regulations and the following standards set forth by the Calvert County Government. All mailboxes in the Calvert County right-of-way shall meet these standards.

A. Location

1. Mailboxes shall be located on the right-hand side of the roadway in the direction of the delivery route. The mailbox shall be set at an elevation of 41 inches to 45 inches above ground level per U.S. Postal Service specifications. The roadside face of the box shall be offset a minimum of 6 to 8 inches from the edge of the shoulder (paved roads), edge of traveled way (gravel roads), or face of curb.

2. Where a mailbox is located at an intersecting road, it shall be located a minimum of 100 feet beyond the center of the intersecting road.

3. Where a mailbox is located at a driveway entrance, it shall be placed on the far side of the driveway in the direction of the delivery route.

4. Where a mailbox is located in a guardrail section, it shall be placed behind the guardrail, when possible, with the face of the box even with the back of the rail.

B. Structure

1. Mailboxes shall be constructed of light sheet metal, plastic or similar weight materials in accordance with local U.S. Postal Service regulations. Newspaper boxes shall be constructed of light sheet metal or plastic and shall be placed on the same side of the road as the mailbox. Newspaper boxes may also be mounted below the mailbox on the side of the mailbox support.

2. No more than two mailboxes may be mounted on a support structure.

3. A single 4x4 inch square, 4-inch diameter wooden post or a metal post with strength no greater than a 2-inch diameter standard strength steel pipe shall be acceptable as a mailbox support. The mailbox support shall not be embedded more than 24 inches into the ground and should safely break away if struck by a vehicle. A metal post shall not be fitted with an anchor plate, but it may have an anti-twist device that extends no more than 10 inches below the ground surface.

4. Mailbox supports shall not be set in concrete.

5. The post-to-box attachment details should be sufficient strength to prevent the box from separating from the post top if a vehicle strikes the installation.

6. Mailboxes and supports other than those listed above will not be allowed on County roads rated over 25 MPH. Calvert County accepts no liability for any physical harm or property damage caused by any mailbox placed along Calvert County roads.

C. Removal of Non-conforming or Unsafe Mailboxes

Mailbox/Newspaper Boxes that do not conform to the previously noted requirements will be considered unsafe. Calvert County will immediately notify the homeowner/business by mail who will be granted not less than twenty four (24) hours or more than thirty (30) days to remove the unsafe mailbox/newspaper box. If the owner does not comply, the Calvert County Highway Maintenance Division at the owner's expense shall remove the mailbox/paperbox.

D. Mailboxes Damaged by Calvert County Highway Maintenance Division

1. Service request for repair or replacement of damaged mailboxes due to snowplowing, mowing or other operations must be received within ***two weeks*** of maintenance activity on the road in which damage occurred. Damages are to be reported to the Calvert County Highway Maintenance Division at 410-535-0905.

2. Upon calling the Highway Maintenance Division the owner is to report their name, address, phone number and type of damage. A Highway Maintenance Division employee will inspect the damage to determine if it was done by an activity performed by the Highway Maintenance Division. Damage not done by Highway Maintenance Division or activity will not be repaired. Calvert County will not be responsible for mailboxes that are poorly mounted or which have rotted posts. Also the County will not be held responsible for mailboxes which are damaged due to weight of heavy snow whereby the snowplow or county vehicle does not make contact with the mail box.

3. Depending on weather conditions and work load it should be noted that the repair/replacement process may take time. It is suggested residents make arrangements with their local Post Office for mail delivery until the process is completed.

4. Mailbox damage caused by Highway Maintenance Division maintenance activities will result in either the repair of the existing mailbox if feasible, or replacement with a white or black U.S. Post Office approved standard mailbox, of the same size damaged, on a 4"x 4" wooden post (if original post is damaged), two inch address numbers will be provided on the mailbox. Custom or ornamental mailboxes within the road right of way are placed at the owner's risk, those that are damaged by Highway Maintenance Division maintenance activities will be replaced with a standard mailbox as listed above. If in-kind replacement is desired it will be the responsibility of the owner to replace. Replacement should be done with a standard "breakaway" installation as described above.

5. Paperbox damage should be reported to the servicing company.

E. Incidental Damage Policy

If any object is placed in the County right of way, it is done so at the persons own risk, as the object may be damaged in the course of Roads maintenance operations. Calvert County Government will not be responsible for sand, salt, snow or incidental damage to turf, driveways, irrigation systems or any landscaping improvements, including fencing and invisible dog fences, located within the public right-of-ways or easements. Any related repair will be the responsibility of the adjacent property owners and/or occupants. The removal of any snow deposits in driveways and mailbox areas that may result from plowing operations will be the responsibility of the adjacent property owner and/or occupant.

§104-65 Monumental Entrances

Monumental entrances may be permitted with the required approval from Planning & Zoning, where adequate rights-of-way or easements are provided as not to pose visual and/or physical obstructions. Sign permits shall be obtained as required by the current Calvert County Zoning Ordinance.

§104-66 Other Structures

A. Non-Breakaway Structures

Driveway enhancements, fences, basketball hoops, sports goals, skateboard ramps, wheel stops, boulders, wood landscaping ties, concrete bricks, private signs, sprinkler systems, and all other miscellaneous structures which create a fixed obstruction in the public right of way ARE PROHIBITED.

B. Removal of Nonconforming or Unsafe Structures

1. Owners of the properties discovered to have a prohibited structure(s) existing in the public right-of-way shall be notified by certified mail that the structure is to be removed by a designated date. Failure to comply shall result in the removal and disposal by county forces. All costs to perform the work shall be billed to the property owner.

2. Newly constructed roads, under a public works agreement, found to have prohibited structures within the county right-of-way shall not be approved for county acceptance. The surety shall not be released until the structure is removed.

§104-67 SIDEWALK REQUIREMENTS

A. General

1. The intent and purpose is to establish guidelines under which sidewalks are to be constructed and maintained within the Town Centers of Calvert County, Maryland. Sidewalks are to be constructed only within areas along roads and other public rights-of-way to such an extent to afford a safe walkway for pedestrians.

2. On existing streets, improved either by subdivision development or under the capital improvement program, and where sidewalks were not required during development of a subdivision, or were not included in a public works agreement, it shall be the responsibility of the Planning Commission to determine whether or not sidewalks are needed.

3. Sidewalk construction may be required outside of town centers by the Planning Commission in the interest of pedestrian safety.

4. All sidewalk ramps shall be constructed or installed in accordance with the current ADA requirements and the Maryland State Highway Administration Accessibility Policy & Guidelines for Pedestrian Facilities along State Highways (http://www.sha.state.md.us).

B. Construction

1. Upon approval of the Planning Commission, the owner of the property that abuts or is adjacent to the planned or existing sidewalk may be required to construct new sidewalks and pay the full cost of such construction as a part of the redevelopment of the property.

2. When the county is to finance sidewalk construction, the decision of the Planning Commission is to be considered as a recommendation to the Board, and the final decision as to where and when sidewalks are to be installed is to be made by the Board as negotiated.

3. Sidewalks required as part of development of a new commercial development or subdivision shall be paid for by the developer as part of their development costs.

C. Use

It shall be unlawful for any person to use any part of any sidewalk between the private property line and curb to:

1. Store goods, merchandise, or other material

2. Display goods or articles for sale or barter

3. Place any sign or device for advertising purposes

4. Rent or lease any portion of the sidewalk for the purpose of selling merchandise thereon.

D. Property Owner Responsibility

It shall be the responsibility of every owner of property within the Town Center that abuts or is adjacent to the sidewalk to keep sidewalks cleaned, maintained, and repaired for public passage.

1. Cleaning and Maintenance

Sidewalks shall be kept free from obstructions, substances, or material that may interfere with the free and safe use of such passageways by the public.

a. Trees upon or near sidewalks shall be trimmed so that the lower branches thereof are not less than 8' above the sidewalk.

b. Snow and ice shall be removed within 72 hours after it has fallen.

2. Repair

Sidewalks shall be repaired and, as necessary, replaced. Any repairs to or replacement of sidewalks within the County right-of-way shall require a permit prior to commencement of repair or replacement.

E. Notification

1. Whenever a determination is made by the director that a sidewalk should be cleaned, maintained, or repaired, the director shall give notice to the owner of such property.

2. Such notice shall be given by personal service to the owner, or the owner's duly authorized agent, or by certified letter addressed to the last known place of residence of such owner. Proof of the mailing of such certified letter coupled with evidence of its delivery by the director shall be in compliance with this section. The notice shall specify what is required of the owner of the property that abuts the sidewalk with respect to the sidewalk. The notice shall advise the owner of the property that abuts or is adjacent to the sidewalk that the requirement shall be carried out within 60 days for repair, and 3 days for the cleaning and/or maintenance from the date of notification receipt.

F. Failure to Comply

1. Failure to comply with the requirements of the notice of compliance from the director within the specified time shall be a violation of this ordinance, and enforcement action will be pursued as defined in Article V, Section §104-9.

2. Failure, refusal or neglect of any person to comply with the provisions of this article or the requirements of the official notice given pursuant to this article, the director is hereby authorized to effect the cleaning, repair, and/or maintenance for public passage. The cost of such work shall be a lien on the abutting or adjacent property.

§104-68 Retaining Walls Supporting Any Infrastructure and Embankments

A. General

1. A building permit is required for the construction or replacement of any retaining wall 3 feet or greater in height.

2. Retaining walls of any height are strongly discouraged within a right-of-way, unless otherwise approved in writing by the director.

3. Existing retaining walls of any height located within a right-of-way or associated easement may be subject to removal or modification if the director deems that the wall poses a potential safety hazard, obstructs vision, alters stormwater management or storm drainage function, or hinders maintenance work within a right-of-way and/or easement area.

B. Permit

1. Building permits shall be obtained from Inspections & Permits for all retaining walls as noted in §104-68 Section A.1.

2. The applicant shall submit design drawings prepared and certified by an engineering professional representative specializing in structural engineering.

3. In cases where the building permit for the retaining wall is not associated with the construction of a residence, a bond shall be required in an amount equal to 125% of the cost of construction, as approved by the director.

C. Design

1. Design of retaining walls that support public roadways shall meet minimum MSHA and FHA standards.

2. Retaining wall design submittals shall include design drawings, specifications, engineer report, and geotechnical report containing design calculations, signed and sealed by a licensed structural engineer, registered in the State of Maryland.

a. Design drawings shall include, at a minimum, the following information:

1) The beginning and ending stations of the wall

2) The wall layout

3) Elevations at the top of the wall at all joint locations and at any break points

4) Details of wall elements.

b. Engineering design report shall include, at a minimum, the following information:

1) Analysis of structural elements and design calculations

2) Factors of safety, estimated life, corrosion design procedure for soil reinforcement elements

3) Procedures for field and laboratory evaluation including instrumentation and special requirements, if any

4) Sample material and construction control specifications, showing material type, quality, certifications, field testing, acceptance and rejection criteria (tolerances) and placement procedures

5) Description of the step-by-step construction sequence.

D. Additional Restrictions

1. Retaining walls are strongly discouraged within a dedicated right-of-way or public utility easement, unless the retaining wall is required for supporting a public roadway. In such cases, both the retaining wall and the associated vehicular recovery zone shall be located within a dedicated right-of-way, and shall be approved in writing by the director.

2. Retaining walls located adjacent to a public roadway shall be a minimum 6' back from the edge of the travel way or paved shoulder. Additional clearance may be required to ensure that the vehicular recovery zone shall not encroach upon the travel way or paved shoulder.

3. Retaining walls are strongly discouraged in any designated easement unless otherwise approved in writing by the director.

4. Retaining walls within rights-of-way or associated easements shall incorporate fence and railing systems which meet minimum state and federal design and safety requirements.

5. The minimum required sight distance at intersecting rights-of-way or driveways intersecting with public or private roads shall not be obstructed by the construction or maintenance of a retaining wall.

6. Any retaining wall located within 12 feet of the curb line or edge of pavement shall be designed to resist corrosion from salt or chemical spraying along the adjacent roadway.

7. As-built plans are required for retaining walls associated with roadway construction.

CALVERT COUNTY, MARYLAND

ROAD ORDINANCE

PART 7

PERMITS

PART 7

PERMITS

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ARTICLE XXI
PERMITS

§104-69 Submission of Suitable Permits

A. No person shall construct any infrastructure including but not limited to road, sidewalk, curb, gutter, or drainage structure, or begin any such construction without first obtaining a permit.

B. All permit applications shall be made to Inspections & Permits or the Engineering Division, as specified in this ordinance. Permit applications shall be accompanied by the required construction plans.

C. All utility cut permit applications shall be made to Project Management & Inspections.

D. Types of permits required under this ordinance include:

1. Grading Permits

a. Commercial, industrial, and residential driveway entrance construction grading permits shall be required for all commercial, industrial, and residential driveway entrance connections to county roads.

1) Bonding is required for all commercial and industrial entrance construction. This surety shall be equal to 125% of an approved materials and construction items cost estimate form as provided by the Engineering Division. This form shall include all quantities for materials and construction items for the project as listed in the most current unit price sheet provided by the Engineering Division at the time of submittal.

2) Bonding for residential driveway entrance construction may be required in certain circumstances deemed necessary by the director.

3) All commercial, industrial, and residential driveway entrances onto a state right-of-way shall obtain a state highway access permit from the MSHA prior to final approval of the (county) grading permit.

b. Mass Grading, outside of the Right-of-Way

1) Any mass grading within a development that includes public road construction, outside of the right-of-way being deeded to the county, shall require a grading permit.

2) Mass grading inside the right-of-way being deeded to the county shall not be allowed, without an executed public works agreement. "Clearing Only" permits will still be considered on a case-by-case basis.

3) A grading surety shall be required in an amount set by Project Management & Inspections.

c. Stone Revetments, Bulkheads, and Jetties

1) Grading permits are required for stone revetments, bulkheads, jetties, etc.

2) Surety shall be required for the construction where material is trucked in via a county road at the discretion of the director. This surety shall be determined by the director based on the life cycle of the pavement, and when it was done. The permittee shall video tape the job site to show pre-existing conditions. This surety shall be equal to 125% of a 2" overlay for that county road as estimated by the director.

d. Water and/or Sewer Installation

1) All water and/or sewer installation shall require a grading permit.

2) In cases where this installation is concurrent with road construction, it shall be included with the road construction permit.

e. Miscellaneous Grading

1) Grading permits are required for any commercial or residential development or improvements which meet the following criteria:

a) Disturbing greater than 5000 s.f. area, and/or exceed 100 c.y. excavation or fill

b) Residential construction requiring a new or modified foundation

c) Residential construction requiring any installation or modification of septic

d) Any other requirements deemed necessary by the NRCS

e) Retaining walls – see §104-68

f) Code violations involving clearing or grading.

2) Bonding shall be required where the director deems that excessive excavation or fill shall impact county roads due to truck traffic. This surety shall be determined by the director based on the life cycle of the pavement, and when it was done. The permittee shall video tape the job site to show pre-existing conditions.

2. Building Permits

The director shall recommend to the Inspection & Permits Division the issuance of residential, commercial, institutional, and industrial building permits associated with public works agreements when all of the following conditions are completed:

a. Execution of a public works agreement

b. Completion and final approval of the gravel base road construction

c. Review and approval of certification requirements

d. Review and approval of as-builts.

3. Use and Occupancy Permits

a. The director shall recommend to Inspections & Permits the issuance of residential use and occupancy permits associated with public works agreements when all of the following conditions have been met:

1) Issuance of building permits as stipulated in #2

2) Installation of base asphalt layer

3) Final approval of the base road construction per approved road plans, which shall include, but not be limited to, the inspection of the bituminous base course, stabilization of earthen shoulders, storm drainage and appurtenances, review and approval of certification requirements and MSHA access completion and approval if applicable.

b. The director shall recommend to Inspections & Permits the issuance of commercial, institutional, and industrial use and occupancy permits when all of the following conditions are completed:

1) Issuance of building permits as stipulated in #2

2) Installation of base asphalt layer

3) Final approval of the base road construction per approved road plans, which shall include, but not be limited to, the inspection of the bituminous base course, stabilization of shoulders, storm drainage and appurtenances, review and approval of certification requirements, and MSHA access completion and approval if applicable

4) Final approval of the base road construction per approved road plans, and the approval of Project Management & Inspections and Planning & Zoning to accept a site completion surety for site items not complete equal to 125% of a cost estimate for uncompleted site work.

4. Utility Cut Permits are required as per section 104-78.

§104-70 Submission of Suitable Permit Surety

A. Permit Surety Submittal

1. Permittees shall be required, under certain grading permits, to post a surety in an amount deemed necessary by this road ordinance.

2. The surety shall accompany the grading permit and be held by Inspections & Permits or the Engineering Division.

3. This surety shall be in the form of cash, cashiers check, personal check, irrevocable letter of credit, and/or corporate bond using a bond form approved by the county attorney. Letters of credit and corporate bonds shall be from an institution with the authority to transact business in Maryland.

4. If cash, a cashiers check, and/or personal check is offered as surety, it shall be deposited with the treasurer, who shall give his/her official receipt thereof stipulating that said cash has been deposited in compliance with and subject to the provisions of this section. No interest shall be paid on cash sureties.

5. Surety reductions shall be approved on a case by case basis, and approved by the director.

B. Permit Surety Expiration

The surety shall not expire during the life of the grading permit and shall remain in effect at least 60 days past the expiration of the grading permit.

C. Permit Surety Release

1. No surety covering the construction under a grading permit shall be released until the construction has been completed, inspected and approved by Project Management & Inspections or the Engineering Division.

2. If cash, a cashiers check, and/or personal check are offered as surety, it shall be approved for release by Inspections & Permits or the Engineering Division. Disbursement is made by the treasurer.

3. If a letter of credit or corporate bond is offered as surety, the original document shall be hand collected from Inspections & Permits or the Engineering Division, and signed for by the developer or an authorized agent of said developer.

D. Permit Surety Forfeiture

If construction is not completed per the approved plans in the time frame allotted by the permit, and the developer has not taken any action to correct the issues, the surety shall be forfeited to the county at the discretion of the director. The bonding institution may choose to complete all of the construction according to such plans, specifications and design standards as approved for the grading permit.

CALVERT COUNTY, MARYLAND

ROAD ORDINANCE

PART 8

CONSTRUCTION AND MAINTENANCE REQUIREMENTS

PART 8

CONSTRUCTION AND MAINTENANCE REQUIREMENTS

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ARTICLE XXII
GENERAL REQUIREMENTS

§104-71 Construction and Inspection

A. Road construction or road re-construction shall be permitted only in the public right-of-way of any existing or proposed road when the road grade has been officially established in accordance with a road construction plan approved by the director and a public works agreement has been obtained, if applicable.

B. Utility work shall be permitted only in the public right-of-way of any existing or proposed road when the road grade has been officially established in accordance with a utility plan approved by Project Management & Inspections per §104-78, or when approved under a public works agreement.

C. No road, with the exception of a county maintained road or a road maintained by any other public agency shall be accepted by the Board, unless the connecting road to the existing road is brought to county standards.

D. Inspection services shall be provided by Public Works and Planning & Zoning to assure compliance with the permit and/or public works agreement.

E. The grading permit for the construction shall be posted on site in a highly visible area at all times during construction.

F. All conduit placements shall be visibly marked during the course of construction.

G. The construction site shall remain open during the county's normal hours of operation.

H. A complete set of the most current, approved plans and specifications shall be maintained on the job site at all times, and shall be available to duly authorized officials upon request.

I. All land within the prescribed right-of-way and all construction easements (slope, drainage, etc.,) shall be graded and stabilized using methods and materials, which shall insure stabilization and practicality of maintenance. Methods and materials shall be specified.

J. A written and/or oral notice of itemized deficiencies shall be given to the developer and/or contractors if, at any time during construction, the work is not satisfactory to the Department.

K. Erosion and sediment control inspections for subdivisions are the responsibility of the MDE and shall be arranged with them directly. Erosion and sediment control inspections for individual single family detached dwellings are the responsibility of the Department.

L. State highway entrance inspections for subdivision are the responsibility of the MSHA and shall be arranged with them directly.

M. In the event that the permittee and/or his contractors discover any discrepancies in the approved plans, he shall immediately notify the director. The engineering professional representative shall then make such corrections as deemed necessary for fulfilling the intent of the approved construction drawings and obtain approval from the director.

N. The county shall not be a party, nor made a party, to any contract administration, negotiation or enforcement of any bids, contracts, or disputes between the developer and their contractors.

O. The developer shall indemnify the county and hold it harmless from all claims arising from contractors who have performed work on the road and appurtenances being accepted, and their workmanship. If the developer is a corporation, the person signing the public works agreement on behalf of the corporation shall be personally liable for the indemnification extended by this paragraph.

§104-72 Construction Notification

A. For road construction under a public works agreement (public and private), the developer and/or contractor shall notify the Engineering Division and The Water & Sewerage Division when applicable, by phone, facsimile, electronic mail, or in person at least 2 working days in advance of the following:

1. Pre-Construction Meeting

   a. This is a required on-site meeting scheduled by the developer that shall take place prior to commencement of construction.

   b. This meeting shall be scheduled through the Engineering Division prior to the release of the grading permit application for payment.

   c. The county inspector, the developer, the permittee, the contractor, and a Maryland certified traffic manager representing the contractor shall attend this meeting. When applicable, a representative from the Water & Sewerage, MDE, MSHA, and any other representative deemed necessary shall also be requested to attend.

2. Installation of Traffic Maintenance & Protection

3. Traffic Maintenance & Protection Inspection, which is a required on-site inspection that shall take place prior to commencement of construction

4. Commencement of construction, clearing and grubbing - it is the responsibility of the permittee and/or contractor to contact MDE for the required erosion and sediment control inspections.

5. Commencement of the cut and fill operations

6. Installation of storm drainage facilities, water, sewer, and all other utilities

7. Inspection of storm drainage facilities, water, sewer, and all other utilities

8. Inspection of subgrade

9. Placement of subbase upon approval of subgrade

10. Inspection of subbase, including subbase material for sidewalks (if applicable)

11. Construction of curb & gutter, when applicable

12. Inspection of curb & gutter

13. Placement of base course upon approval of subbase, and curb & gutter

14. Inspection request for base road approval including, but not limited to, stabilization of shoulders, and MSHA entrance approval when applicable

15. Placement of surface course upon base road re-inspection approval

16. All roadway signage shall be installed and inspected prior to the director recommending the granting of use and occupancy permits.

17. The developer shall install markings after placement of the surface asphalt prior to final road approval. Once the final road approval has been granted, the county shall maintain all road markings installed on public roads.

18. All traffic maintenance and protection signage associated with the project shall be removed from all county roadways within thirty (30) days of completion of any roadway work. No final surface approvals will be issued unless this has been completed. Furthermore, the contractor is responsible for all signage maintenance throughout the duration of the public works agreement. Upon completion of the final warranty inspection, the county shall take over signage maintenance.

19. Inspection request for surface road approval, including but not limited to, stabilization of shoulders. The surface course of asphalt shall have final surface approval prior to November 1 to be eligible for county snow removal that winter season. The developer shall remain responsible for snow removal throughout that winter season without this approval.

20. Re-inspection of the surface road, after the approved maintenance period.

B. Within 2 working days of completion of each of the above stages, Project Management & Inspections shall present an approval or denial, in writing, to the permittee and/or contractor, or an authorized agent. If approved, the construction may proceed. If denied, the contractor shall make the appropriate corrections and give proper re-inspection notification when complete.

C. The Water & Sewerage Division shall determine water & sewer inspections and procedures. When road work also necessitates water and sewer infrastructure to be installed, the developer, at his expense, shall employ an independent inspection firm to certify that all water and sewer work has been installed pursuant to all requirements as stated or implied in the plans and specifications. Additionally, all work shall be certified by the inspection firm. Upon the satisfactory completion of the water and sewer work, 3 copies of certified as-built plans shall be submitted to The Water and Sewerage Division for acceptance.

§104-73 Certification Requirements:

A. The permittee and/or contractor shall submit certificates of compliance, certified tests, and reports of inspection for all construction to the Engineering Division for approval.

B. The following certificates, tests, and reports shall be submitted in the required form as described in this section and shall be received by the Engineering Division via mail, facsimile, or in person at each appropriate stage of construction to be approved and/or verified.

C. Within 2 working days after the receipt of each of the following required certifications the director shall provide a written approval or denial, in writing, to the developer or authorized agent. If approved, the construction may proceed. If denied, the contractor shall make the appropriate corrections and provide additional certification to the inspector when complete.

1. Certification of Material

   a. Manufacturers and/or suppliers/vendors; certificates of compliance, certified tests, and/or reports of inspection shall be submitted for all construction site materials used.

   b. This documentation shall certify that the materials supplied meet the design requirements and applicable specifications.

   c. Construction site materials shall not be incorporated into the work until the appropriate certification has been submitted and approved.

d. Material incorporated into the work without submission of certification and approval shall be deemed inadequate until required certification is submitted and approved.

2. Compaction Reports

a. Compaction reports for embankment, subgrade, and subbase within the public right-of-way shall be submitted to Project Management and Inspections.

b. Compaction reports shall be certified and sealed by a geotechnical representative.

c. The in-place density of compacted embankments shall be determined by the MSHA Maryland Standard Method of Tests. Other test methods may be used when approved by the director.

1) Embankment tests shall be in accordance with MSHA Construction Inspection Sampling and Testing Guide and a minimum of 2 tests be performed for each 2,000 cubic yards of fill.

a) The embankment material shall be compacted to not less than 92% of the maximum density, and within 2 percentage points of optimum moisture. See Figure 8-1.

b) The number of tests required and quantity of fills shall be shown on the road construction plans. The location of the tests shall be determined by the inspector.

c) Embankment test reports shall be submitted and approved prior to placement of subbase material.

2) Subgrade tests shall be in accordance with the current MSHA Construction Inspection Sampling and Testing Guide and a minimum of 2 tests per lane shall be performed for every 500 feet of road, with a minimum of 4 tests per road in cut or fill.

a) The top 1' of subgrade material shall be compacted to not less than 97% of the maximum density, and within 2 percentage points of optimum moisture. See Figure 8-1.

b) The number of tests required shall be shown on the road construction plans. The location of the tests shall be determined by the inspector.

c) Subgrade test reports shall be submitted and approved prior to placement of subbase material.

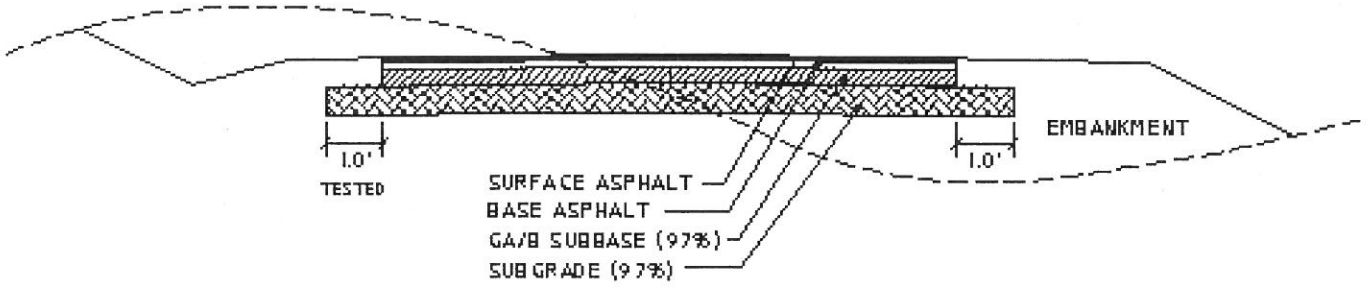
3) Subbase tests shall be in accordance with the current MSHA Construction Inspection Sampling and Testing Guide and performed at an interval of 2 tests per lane, per 500' of road with a minimum of 4 tests per road, and 2 tests per 500' of sidewalk.

a) The subbase material shall be compacted to not less than 97% of the maximum density, and within 2 percentage points of optimum moisture.

b) The number of tests required shall be shown on the road construction plans. The location of the tests shall be determined by the inspector.

c) Subbase test reports shall be submitted and approved prior to placement of the base course. See Figure 8-1.

Figure 8-1



3. Certification of Proof roll:

a. The subgrade and subbase shall be proof rolled in the presence of the inspector prior to the next stage progression. Approval shall be given when there appears to be no vertical deflection in the subgrade.

b. The director may accept a signed and sealed certification from a geotechnical representative.

1) The subgrade shall be proof rolled with a fully loaded, tandem axle vehicle a minimum 65,000 GVW, or other acceptable measure as approved by Project Management & Inspections, prior to placement of the subbase.

2) The subbase shall be proof rolled with a fully loaded, tandem axle vehicle a minimum 65,000 GVW, or other acceptable measure as approved by Project Management & Inspections, prior to placement of the base course.

c. The contractor may not proceed with proof rolls until the following requirements are met:

1) Appropriate compaction reports submitted to, and approved by the inspector

2) Installation and certification of utilities to include water and sewer

4. Sieve Analysis

   a. A sieve analysis for the subbase material shall be submitted. Standards shall meet MSHA specifications for materials specified.

   b. The sieve analysis shall be submitted and approved prior to placement of the subbase material.

5. Concrete Certification

   a. Concrete certification reports for all structures within the county right-of-way shall be submitted. The number of tests required shall be shown on the road construction plans. The location of the tests shall be determined by the inspector.

   b. All tests of aggregates, cement, and concrete shall be performed by a certified independent testing laboratory.

   c. Samples of concrete for test cylinders shall be taken at the mixer, or in the case of ready-mixed concrete, from the transportation vehicle during discharge in accordance with ASTM C172. Test cylinders shall be made and cured in accordance with ASTM C31. The test cylinders shall be molded immediately after the sample is taken and then placed in a protected spot and kept under curing conditions similar to the conditions under which the concrete they represent is being cured. The testing of cylinders shall be in accordance with ASTM C39.

d. A sample shall consist of a minimum of 4 test cylinders. All 4 test cylinders shall be taken at the same time; 1 cylinder to be used for a 7-day test, 2 for a 28-day test following standard lab curing, and 1 sample cylinder shall be field cured before lab testing at 7 days to determine if the structure can be placed into service. If the 7-day sample break does not meet specification, the contractor shall break both 28-day samples for acceptance. The remaining cylinder shall be kept for reference or additional testing if required by the director. The director may require additional random samples.

e. The permittee and/or contractor shall collect 1 sample of concrete for compressive strength testing for each daily placement of less than or equal to 50 CY per class of concrete placed, or fraction thereof. Any daily quantity greater 50 CY shall be sampled in accordance with MSHA's Materials Manual – Field Procedures – Volume 1.

f. Concrete that does not meet minimum strength requirements shall be removed, replaced, and re-tested at the expense of the permittee and/or contractor.

6. Bituminous mix designs for base and surface shall be submitted for every construction project under a public works agreement. Mix designs shall conform to MSHA Sec 904.

   a. The base mix design shall be submitted and approved prior to placement of the bituminous base course.

   b. The surface mix design shall be submitted and approved prior to placement of the bituminous surface course.

7. Asphalt Tickets

   a. Asphalt tickets for the base course asphalt and the surface course asphalt shall be submitted.

   b. The asphalt tickets shall specify, at a minimum, subdivision name, road name(s), load number, total daily quantity, material, date and time of load, and points of supply.

      1) Base asphalt tickets shall be submitted after the base course has been completed and shall be a requirement of the final base inspection.

      2) Surface asphalt tickets shall be submitted after the surface course has been completed and shall be a requirement of the final surface inspection.

8. Asphalt Depth

a. Asphalt cores for the base course of asphalt and the surface course of asphalt shall be submitted. Cores are to be cut full depth and shall meet the required depth with an average of all cores meeting the required depth. Cores for the base course shall be within ½ inch of the required depth.

b. Cores shall be cut by the contractor in the presence of the inspector.

c. The director may accept a signed and sealed certification from a geotechnical representative. In this case a transmittal showing location of the roadway(s), corresponding core locations by station labeled A-Z, and its depth shall accompany the certification.

d. With inspector approval, the contractor shall send said cores to a certified facility for asphalt density testing.

e. All holes shall be filled, full depth, with hot mix asphalt.

1) The base course of asphalt shall require 1 minimum 4 inches diameter core per 200 tons of material placed with 3 cores minimum per road. Submission and approval of the cores shall be a requirement of the final base road approval.

2) Required cores for surface course shall be 1, minimum 4 inches in diameter, core per 100 tons of material placed with 3 cores minimum per road. Submission and approval of the cores shall be a requirement of the final surface road approval. Cores for the surface course shall be within ¼" of the required depth.

f. If a deficiency is identified in any core as a result of testing, supplementary cores shall be required to define the area. Corrective action to address the deficiency shall be proposed by the contractor and submitted to the director for review and approval. These shall include but not be limited to pavement section structural equivalency certifications by geotechnical representatives and/or financial penalties.

9. Asphalt Density Certification

a. Asphalt density certification for the base course of asphalt and the surface course shall be submitted.

b. Unless otherwise directed by the inspector, cores taken for asphalt depth certification shall be used for asphalt density certification.

c. Core samples shall be submitted to a certified laboratory for testing. Core samples shall be tested in conformance with MSMT 452. The specific gravity of the samples shall be expressed as a percentage of the maximum specific gravity determined for each lot of material. The "in place" density of each mixture shall be within the range of 92% to 97% of the maximum density.

d. Nuclear density testing for "in place" density determination can be used in lieu of the core testing.

1) Base course core certification shall be submitted and approved prior to traffic or construction equipment on the "in place" base material and before placement of the surface course of asphalt. This certification shall be a requirement of the final base road inspection.

2) Surface course core certification shall be a requirement of the final surface road inspection.

PUBLIC/PRIVATE ROAD CONSTRUCTION			
The Permittee and/or Contractor shall notify the Engineering Division and Water & Sewerage when applicable, by phone, facsimile, electronic mail, or in person at least 2 working days in advance of the following:			
	NOTIFICATION	**REQUIRED SUBMISSIONS**	**NOTES**
1	Pre-Construction Meeting		This is a required on-site meeting scheduled by the developer that shall take place prior to commencement of construction. This meeting shall be scheduled through the Engineering Division prior to the release of the grading permit application for payment. The county inspector, the developer, the permittee, the contractor, and a Maryland certified traffic manager representing the contractor shall attend this meeting. When applicable, a representative from Water & Sewerage, MDE, MSHA, and any other representative deemed necessary shall also be requested to attend.
2	Installation of Traffic Maintenance & Protection		
3	Traffic & Maintenance Protection Inspection		This is a required on-site inspection that shall take place prior to commencement of construction.
4	Commencement of construction, clearing and grubbing		It is the responsibility of the permittee and/or contractor to contact MDE for sediment and erosion control inspections.
5	Commencement of the cut and fill operations	Certification of Materials	All materials shall be certified prior to placement.
6	Installation of storm drainage facilities, water, sewer, and all other utilities		
7	Inspection of storm drainage facilities, water, sewer, and all other utilities		
8	Inspection of subgrade	Compaction Reports for Embankment Compaction Reports for Subgrade Certification of Proof roll for Subgrade Sieve Analysis for Subbase Material	

9	Placement of subbase upon approval of subgrade		
10	Inspection of subbase	Compaction Reports for Subbase Certification of Proof roll for Subbase Bituminous Mix Designs for Base Course	
11	Construction of Curb & Gutter, when applicable	Concrete Certification	
12	Inspection of Curb & Gutter		
13	Placement of base course upon approval of subbase, and curb & gutter		Base core locations shall be marked by Project Management & Inspections
14	Inspection request for base road approval; including but not limited to, stabilization of shoulders and MSHA entrance approval, when applicable.	Asphalt Cores for Base Course Asphalt Density Certification for Base course Asphalt Tickets for Base Course Engineering Professional Representative Certification and As-built Plans	No lot or parcel in a subdivision subject to these regulations shall be transferred until a public works agreement for the road improvements has been executed and the base road construction completed and approved by Project Management & Inspections and the Engineering Division
15	Placement of surface course upon base road re-inspection approval		Surface core locations shall be marked by Project Management & Inspections
16	Inspection request for surface road approval; including but not limited to, stabilization of shoulders	Asphalt Cores for Surface Course	The surface course of asphalt shall have final surface approval prior to November 1 to be eligible for county snow removal that winter season. The developer shall remain responsible for snow removal throughout that winter season without this approval.
		Asphalt Density Certification for Surface course Asphalt Tickets for Surface Course	Release of the public works agreement is subject to the final approval of the road(s) and submission of a maintenance bond.
17	Re-inspection of Surface Road after the Maintenance period		
Stop Work Orders may be issued for non-compliance of any notification and/or construction procedures stated above in accordance with this road ordinance. Construction shall not be approved until the Engineering Division and Project Management & Inspections resolve all outstanding issues with the developer.			

This table has been extracted from §104.71 and §104.72for quick reference.

§ 104-74 Engineering Professional Representative Certification and As-Built Plans:

A. As-built plans for all public and private roads constructed under public works agreements shall be submitted to the director for review and approval.

1. As-Built Plans

a) One paper set of field verified as-built plans shall be submitted after placement of the base course of asphalt.

b) The as-built plans shall include horizontal road plans and vertical profiles including elevations at every 50 feet for centerline and linear profile of cul-de-sacs, edge of pavement or top of curb, hinge and toe of slope, shoulder and ditch; storm drain structures, pipes and ditches plans and profile; stormwater management plans and profile, and water & sewer locations and crossings. All modifications shall be identified in red ink. This as-built plan shall identify proposed surface pavement elevation, and shall be a requirement of the sub-base final approval.

2. As-built certification statements shall include the following verbiage:

a) Roads – "I certify that the referenced road has been completed, and that the construction is substantially in conformance with the approved design plans and specifications with respect to line and grade and/or as noted in red ink. This certification is based on a field run survey conducted by _____ with (or without) benefit of on-site inspections and materials testing during construction."

b) Stormwater Management – "I certify this as-built plan of the stormwater management system is correct, and that to the best of my knowledge and belief, the stormwater management system as constructed is substantially in conformance with the approved design plans and specifications, and meets or exceeds the stormwater management and hydraulic performance of the original approved design. This certification is based on a field run survey conducted by _____ with (or without) benefit of on-site inspections and materials testing during construction."

c) Engineering professional representative certifications shall be submitted as an inclusion on the as-built plans in the form of a note with a seal and signature for all roads constructed under a public works agreement.

d) Within 30 days from the date of submission, the inspector and the director shall approve, approve with modification, deny, or provide written comments requesting revisions.

e) Upon approval of the as-built mylar set, the engineering professional representative shall submit a digital copy of the as-built plan in a format required by the county accompanied by a signed and sealed transmittal letter referencing all county approvals. This submittal shall be a requirement of the surface road final approval.

B. The Water & Sewerage Division shall determine water & sewer certifications and procedures. When road work includes the installation of water and sewer infrastructure, the developer, at his expense, shall employ an independent inspection firm to certify that all water and sewer work has been installed pursuant to all requirements as stated or implied in the plans and specifications. Additionally, all work shall be certified by the inspection firm. Upon the satisfactory completion of the water and sewer work, 3 copies of certified as-built plans shall be submitted to The Water and Sewerage Division for acceptance.

§104-75 Interruption in Construction

In the event that the construction is interrupted for a period of more than 30 days, the permittee and/or contractor shall notify the director at the end of each interruption, and 2 working days in advance of his intent to actively resume operations.

§104-76 Maintenance of Existing Road Condition and Traffic

A. The permittee and/or contractor shall comply with all requirements of this ordinance to avoid unnecessary conflicts to the public during road construction. The permittee and/or contractor shall be responsible for:

1. Maintenance of vehicular and pedestrian traffic on the roadway and connections with any existing travel way per the approved traffic maintenance and protection plan included in the road construction plans, and providing materials, labor, and equipment as necessary to properly maintain traffic in accordance with acceptable federal and state standards.

2. Maintenance of the existing roadway surface and shoulders, including crossroads, ramps, approaches, crossovers, medians, detour roads, entrances, signing, and pavement markings within the limit of the project throughout the duration of the project. Any road damaged by vehicular loads may require total reconstruction at the permittee's expense. Equipment with metallic treads is prohibited from being driven or towed on any road surface or surfaced shoulder.

3. Maintenance of all hazards.

4. Construction and maintenance of proper connections to all driveways and walks at all residences.

5. Keeping the roadway in good condition. Poor or unsuitable subgrade areas shall be repaired with material to meet a standard acceptable by the director.

6. Erecting barricades with MUTCD and MSHA Standards.

7. The prompt removal of mud and debris tracked onto the existing road.

B. Until such time that the director approves the final surface, the permittee and/or contractor shall provide the following:

1. Maintenance of roads, shoulders and entrances within the limit of the project. Roads found to have damage shall be repaired, to the satisfaction of the director, at the developer's expense.

2. Maintenance of vehicular traffic.

3. Removal of accumulated snow of 2 inches or greater and/or accumulated ice of ¼ inch or greater from the roads covered by the public works agreement within 12 hours after snow or ice stops falling (county forces assume snow removal operations after the final surface inspection, approval, and acceptance if prior to November 1 of that winter season.)

4. Repair of any defects in the road within 24 hours of notification by the director.

5. Immediate removal of obstructions from the road upon notification by the director.

C. Until such time that the director approves the surface maintenance and the county assumes maintenance the permittee and/or contractor shall provide the following:

1. Maintenance of roads, shoulders and entrances within the limit of the project. Roads found to have damage shall be repaired, to the satisfaction of the director, at the developer's expense.

2. Maintenance of vehicular traffic.

3. Repair of any defects in the road within 24 hours of notification by director.

4. Immediate removal of obstructions from the road upon notification by the director.

D. Should the developer fail to maintain the roads as stated above, the director shall authorize a contractor to perform the required maintenance and charge the developer twice the cost of the service provided. The developer shall pay this cost within 30 days of receiving a statement from the county. If payment is not received the surety shall be forfeited to the county.

§104-77 Field Modifications

All discrepancies between the approved plans and field modifications shall be brought to the attention of the director and the engineering professional representative and resolved as follows.

A. Major Modifications

1. Major modifications, as determined by the director, shall be requested in writing. Modified plans shall be submitted to the Engineering Division for re-review by all appropriate county agencies. ***These modified plans shall be signed and sealed by the engineering professional representative.***

2. Within 30 calendar days from the date of receipt of the modified plans, the director shall approve, deny, approve with modification, or provide written comments requesting revisions to the plans. The director may modify any time limit established in this section for review if the director makes a finding; that the modification is necessary to ensure compliance with the provisions of this ordinance, unusual or extenuating circumstances make compliance within the time limits impossible, and/or the time limit imposed is less than what is necessary to ensure that the proposed construction shall comply with the provisions of this ordinance.

3. Once re-approval is given, 5 paper copies of the revised approved plans shall be submitted to the Engineering Division and the construction may proceed with coordination of the inspector.

4. All major modifications shall be shown on the as-built plans.

B. Minor Modifications

1. Minor modifications, as determined by the director, shall be brought to the attention of Project Management & Inspections prior to the work proceeding.

2. Within 2 working days the director shall approve or deny the minor modifications in the field through a meeting of understanding.

3. The approved modifications shall be documented on a field inspection report and the construction may proceed.

4. All minor modifications shall be shown on the as-built plan.

§104-78 Utility Construction and Maintenance in County Rights-of-Way

A. Applicability

This section applies to all persons, private utilities, and publicly owned utilities including governmental agencies.

B. Authority

1. The director exercises control over the utility occupancy of county owned rights-of-way.

2. Utilities shall not be constructed, maintained, and/or located within county rights-of-way without a utility permit for each location, including new rights-of-way to be constructed under a public works agreement except in emergency situations.

3. Except as permitted, a utility company/contractor may not:

   a. Make an opening within the publicly maintained county road

   b. Place structure on any publicly maintained county road

   c. Change or renew any structure placed on any publicly maintained county road

   d. Dig up any publicly maintained county road for any purposes, including the placement of pipes, sewers, poles, wires, or rails

e. Place any obstruction on any publicly maintained county road including vehicles and equipment, or

f. Use a trenchless boring device, such as a missile, except as specifically permitted by Project Management & Inspections.

C. General Provisions

The county shall not be a party in any negotiations between the utility and abutting property owners.

D. Permit Applications

1. Applications for permits shall be on forms provided by Project Management & Inspections and signed by a duly authorized representative of the utility making the request. All applications shall include construction details and a location map, and shall be submitted to Project Management & Inspections for review and approval.

a. Applications for utility construction and maintenance within existing rights-of-ways shall be submitted and approved prior to the beginning of work.

b. Applications for utility construction and maintenance within proposed rights-of-ways to be constructed under a public works agreement shall be submitted and approved prior to commencement of the development project.

2. It shall be the duty of the utility to obtain any additional permits required by other agencies or by the adjacent property owners.

3. Surety may be required as determined by the director. When surety is required, the surety amount shall be 125% of the cost estimate provided by the utility and approved by Project Management & Inspections.

   a. The work shall be secured by a surety in the form of cash, cashiers check, personal check, letter of credit, and/or corporate bond using a bond form approved by the county attorney, or as approved by the Board. Letters of credit and corporate bonds shall be from an institution with the authority to transact business in Maryland.

   b. If cash, a cashiers check, and/or personal check is offered as surety, it shall be deposited with the treasurer, who shall give his/her official receipt thereof stipulating that said cash has been deposited in compliance with and subject to the provisions of this section. No interest shall be paid on cash bonds.

   c. The surety shall accompany the permit application and be held by Project Management & Inspections.

   d. Surety reductions shall be approved on a case by case basis and approved by the director.

   e. The surety shall expire the same day as the utility permit, as required by this ordinance.

f. In cases where the utility permit is near expiration, and the job is not complete, it shall be the responsibility of the permittee to request an extension of the permit stating the reasons an extension should be granted. An extension request and a confirmation from the bank or bonding institution shall be included in the extension request submittal. Extensions shall be requested in 1-year intervals. The county shall conduct a site inspection to assure the project status is suitable for extension. Project Management & Inspections has the right to approve or deny any extension request. The developer shall be notified in writing of the status of the request. If an extension is denied, a new utility permit shall be required thereby potentially increasing the amount of bonding if applicable and inspection fees, if applicable, as set forth herein due to escalation of prices and construction standard changes.

g. No surety covering the construction under a permit and/or agreement shall be released until the construction has been completed, inspected and approved by Project Management & Inspections.

1) If cash, a cashiers check, and/or personal check is offered as surety, it shall be approved for release by Project Management & Inspections directly through Finance & Budget and the treasurer.

2) If a letter of credit or corporate bond is offered as surety, the original document shall be hand collected from Project Management & Inspections, and signed for by the developer or an authorized agent of said developer.

h. If construction is not completed per the approved plans in the time frame allotted by the permit, and the developer has not taken any action to correct the issues, the surety shall be forfeited to the county at the discretion of Project Management & Inspections. The bonding institution may choose to complete all of the construction according to such plans, specifications and design standards as approved for the utility permit.

E. Issuance of Permit

1. The director shall approve or deny the permit application at which time a letter shall be sent to the permittee.

2. Permitted work shall be performed to the satisfaction of the director.

3. A copy of the permit approval letter shall be made available on site at all times during construction.

4. The permittee is wholly responsible for all work.

5. In emergencies that threaten public safety, a permit shall not be required prior to work; however, traffic shall be maintained at all times. In the case of an emergency Project Management & Inspections shall be notified within 24 hours or on the first working day after the occurrence. A permit application shall be submitted within three (3) days.

6. All existing utilities shall be located at least 48 hours prior to commencement.

7. The permit shall be valid for 1 year after the date of issuance. If the work continues for more than 1 year, the permittee shall be required to submit a request to extend the permit to Project Management & Inspections.

F. Notification

1. The permittee shall notify Project Management & Inspections 48 hours prior to commencement of work.

2. The permittee shall contact Project Management & Inspections upon completion of the job for a final inspection approval.

G. Inspection

1. Project Management and Inspection is assigned the responsibility and the authority to conduct inspection of the utility work sites, and to obtain and record appropriate data.

2. The utility company/contractor shall provide the inspectors with an intended work schedule, and shall inform the inspector of any subsequent changes to the schedule.

H. Safety

1. Utilities shall take precautions to protect the traveling public. Mud and debris tracked or spilled on the roadway shall be removed promptly; and precautions shall be taken, especially in freezing temperatures, to keep water off of the traveled lanes.

2. Appropriate protective measures, including warning signs and barricades, shall be placed at all excavations. Temporary traffic control (TTC) shall be provided in accordance with the MUTCD at all times.

3. Excavations in the roadway, shoulders or sidewalk shall not be left open overnight, or at any time when work is not in progress in the immediate area. Steel plates, anchored and ramped, may be used over excavations at locations approved by the director and shall be signed as to warn for the presence of the plates.

4. Work performed in the county right-of-way is subject to all safety requirements as stated in the OSHA regulations.

5. All utility structures within the county right-of-way, subject to vehicular traffic, shall be traffic bearing as approved by the director.

I. Depth of Cover and Distance from Roadway

1. The minimum depth of cover for any utility within the right-of-way shall be measured from the finished grade to the top of the utility as identified on Table 8-1, unless a greater burial depth is required by federal or state regulations or industry codes.

2. The minimum distance for any trenched line shall be measured from the edge of pavement as identified on Table 8-1, unless approved by the director.

Table 8-1					
Minimum Depth of Cover or Distance from Edge of Pavement					
	Electric	Telephone	Cable TV	Water	Gas
Lateral Distance					
Poles	6 feet	6 feet			
Transformers	6 feet				
Pedestals or Cabinets	6 feet	6 feet	6 feet		
Pipes				3 feet	3 feet
Pipes – Depth				3.5 feet	3 feet
Hydrants				6 feet	
Depth					
Underground Wires	3 feet	3 feet	3 feet		
Gas					
Water					
Sewer					

J. Clearance - In Ground

Clearance shall be measured between the outside edges of pipes. Storm drains crossing water main and sanitary sewers shall be constructed with a minimum clearance of 12 inches (horizontal and vertical). 48 inches of clearance (horizontal and vertical) shall be maintained between storm drains and gas lines and between storm drains and electric lines or as approved by Project Management & Inspections.

K. Crossings

1. Road crossings in county rights-of-way shall be accomplished by directional bore or jack and bore under the roadway without disturbing the existing pavement, shoulder or drainage. Where unusual conditions require the use of another construction method, such method is subject to the director's approval. Permit requests to cut within the county right-of-way may not be approved if other less obstructive methods for utility installation are warranted.

2. Underground crossings are allowed but only through sleeves or conduits, except for gravity sewers. The sleeve or conduit shall extend from the ditch centerline to the ditch centerline on the other side.

3. All crossings shall be made as close to a right angle to the centerline of the roadway as possible. Crossings shall not be allowed through drainage pipes or culverts.

4. Crossing locations shall be selected for minimum interference with existing utility crossings in the same area.

L. Methods

1. Directional Bore

2. Jack and Bore

a. Jacking is the pushing of a sleeve or casting pipe under a roadway. When the pipe crossing under the roadway is to be jacked, the hole is not to exceed the outside diameter of the pipe. The pipe shall be pushed simultaneously with the auger so as to prevent cave-ins.

b. In case of a false start or damage to the over-burden, the void shall be filled by approved material.

3. Other Methods: The use of open cuts shall be permitted only when justified to the director.

a. The director can require resurfacing of the roadway up to a maximum of 200' on each side of the trench crossing the roadway. This distance is the maximum; the director may approve pavement restoration down to 2', the minimum, on each side of the crossing.

b. When open cut is permitted longitudinally in the roadway, resurfacing to the width of the travel lane disturbed can be required. Some roadways may have to be resurfaced the full width in order to restore the roadway to its original condition. The director will designate the length and width of the resurfacing to take place taking into consideration the existing condition of the roadway prior to the installation of the utility.

M. Backfilling

Backfill shall be in accordance with plate RD-24. Compaction tests may be required as determined by the director.

N. Restoration and Roadway Protection

1. All disturbed areas, due to the work done by the utility, shall be restored to its original condition, including applying top soil, seed, fertilizer, and mulch, as approved by the director.

2. All shoulder areas, curbs, sidewalks, driveway aprons, etc. shall be replaced with the same type of material that was present before the utility started work in that area. If the material is deemed unsuitable, the material shall be replaced at the direction of the director.

3. All drainage facilities shall function at all times. Storm drain facilities and concrete ditches damaged during construction shall be reconstructed "in kind." Disturbed, unpaved drainage ditches shall be restored to their original condition by resodding or seeding and mulching as determined by the director, and shall be left free of debris.

4. The permittee shall take all necessary steps during construction to minimize erosion and siltation onto the county right-of-way. Disturbed areas shall be stabilized to the satisfaction of the director. All trees, shrubs, and other plant materials shall be replaced "in kind".

5. Any signs, delineators, markers, and other structures that are disturbed during construction shall be replaced or restored to the satisfaction of the director. Road signs, delineators, and guide rails shall not be removed until immediately prior to the excavation, and shall be replaced immediately after the backfill operation. If damaged they shall be replaced "in kind."

6. No equipment with metallic treads shall be driven or towed on any paved road surface or surfaced shoulder.

7. All signing shall conform to the specifications of the current MUTCD.

8. If the use of steel plates has been approved by the director, the permittee shall place warning signs in accordance with the current MUTCD.

O. Abandonment

1. Obsolete underground utility facilities or sections may be abandoned in place upon approval of the director.

2. Manholes, valve boxes, splice boxes, and meter boxes shall be removed.

3. Any unused cast iron or concrete piping shall be sealed and blocked at both ends. Unused piping 8 inches in diameter or greater made of other material shall be completely filled with an approved material.

4. There shall be no abandonment of any aerial utility facilities within the right-of-way. Facilities no longer required shall be completely removed.

5. Abandoned poles shall be removed within 3 months of removal of all utilities from the pole.

P. Enforcement

The director has the authority to suspend utility work, issue stop work order and or citation as per section §104-9 of this ordinance on any project, wholly or in part, if

1. The utility fails to acquire a permit, or

2. The work is performed in such a way that it endangers public safety, or

3. The utility fails to comply with the terms of the permit.