GUIDELINES FOR THE PREPARATION OF IMPROVEMENTS CONSTRUCTION PLANS

(3rd EDITION: November 1, 2009)

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DEPARTMENT OF PUBLIC WORKS
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NOTICE

THE WICOMICO COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS HAS PREPARED A BOOK OF GUIDELINES TO BE UTILIZED BY ALL ENGINEERS AND LAND SURVEYORS INVOLVED IN PREPARING CONSTRUCTION PLANS FOR ROADS, STREETS AND STORM WATER DRAINAGE SYSTEMS PROPOSED TO BE CONSTRUCTED WITHIN THE JURISDICTION OF WICOMICO COUNTY, MARYLAND.

THIS BOOK, ENTITLED “GUIDELINES FOR PREPARATION OF IMPROVEMENTS CONSTRUCTION PLANS” IS NOW AVAILABLE AT THE WICOMICO COUNTY GOVERNMENT WEBSITE (www.wicomicocounty.org) AND AT THE FOLLOWING LOCATION:

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DEPARTMENT OF PUBLIC WORKS
125 NORTH DIVISION STREET
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THIS DOCUMENT WILL BE PERIODICALLY UPDATED AS DEEMED NECESSARY FROM THE EFFECTIVE DATE OF NOVEMBER 1, 2009

A HARD COPY OF THIS DOCUMENT IS AVAILABLE FOR A FEE OF TWENTY FIVE DOLLARS ($25.00).

ANY REQUESTS FOR MAILING THIS DOCUMENT SHALL INCLUDE A FEE OF SEVEN DOLLARS & FIFTY CENTS ($ 7.50) FOR POSTAGE AND HANDLING.

ALL CHECKS SHALL BE MADE PAYABLE TO WICOMICO COUNTY, MARYLAND.

JOHN B. REDDEN, JR., P.E.
ACTING DIRECTOR
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DEPARTMENT OF PUBLIC WORKS
WICOMICO COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS
2009 GUIDELINES FOR PREPARATION OF CONSTRUCTION PLANS FOR SUBDIVISIONS AND SITE PLANS

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PREFACE

STATEMENT OF PURPOSE

These Guidelines have been prepared by the Wicomico County Department of Public Works, to establish a standard format for the preparation of construction plans for roads infrastructure, storm drain systems, and stormwater management that are proposed to be constructed within the jurisdiction of Wicomico County.

These Guidelines will assist developers, engineers and surveyors during the plan development stage and accelerate the review and approval process by the County.

The objective of the Guidelines is to produce neat and precise plans that can easily be interpreted and implemented by field construction and inspections personnel.
1.0. PRELIMINARY INFORMATION

The Wicomico County Subdivision Regulations require that a “Construction Plan” be submitted to and approved by the Director of Public Works before a “Final Subdivision Plat” may be submitted to the Planning and Zoning Commission for approval. These plans shall be accompanied with a site/subdivision development plan application, concept development plan checklist, and/or a preliminary site development plan checklist and all associated documents and review fees.

The developer and his/her engineer shall consult with the Wicomico County Department of Public Works during the Concept Plan phase to verify that all parties are in agreement as to the scope and design of the improvements and implementation of Environmental Site Design (ESD) to the Maximum Extent Possible (MEP).

These guidelines are intended as general guidelines for development and submission of plans, however, other methods and alternatives that produce the desired results may be considered. Any proposed variations or deviations from these guidelines should be discussed with and approved by the Director of Public Works prior to plan preparation.

2.0 GENERAL PLAN SHEET REQUIREMENTS

2.1 SHEET ORGANIZATION

A. Title Sheet
B. Typical Sections and Detail Sheets
C. Roadway Plan and Profile Sheets
D. Storm Drain System Plan and Profile Sheets
E. Stormwater Management Plan, Profiles and Details
F. Traffic Control Plan and Details

2.2 SMALL PLANS

For development projects or sections thereof which require only one plan and profile sheet, the typical sections and storm water drain profiles may be shown on the plan and profile sheet if adequate space is available to show all the required information clearly.

2.3 PLAN SHEET SIZE

All drawings in a set of construction plans shall be the same size sheet (24 inches high and 36 inches wide). Drawings shall have a one (1) inch margin on the left edge and shall have a half (0.5) inch margin along the top and bottom and a half (0.5) inch margin on the right side.

2.4 NORTH ARROW

The north arrow shall be shown on each map and each plan. All maps and plans shall be oriented so that north is towards the top or right of the sheet. The requirements of north arrow location may be waived on the plan and profile sheets if better continuity can be obtained.
2.5 ROAD STATIONING

Stationing on the plan and profile sheets shall increase from left to right across the drawing.

2.6 PLAN DRAFTING STANDARDS

Good drafting practices shall be exercised in the preparation of all drawings. Lettering shall be proportioned as to the importance of the item referred. Street names and similar designations shall be boldly lettered to stand out. Standard symbols to be used in preparation of the drawings shall be as shown on Exhibits 1 and 2. Profile scales shall be consistent with the plan view scale. (Example: Plan view is 1 inch = 50 feet, Profile view shall be 1 inch = 50 feet horizontal and 1 inch = 5 feet vertical)

2.7 PLAN SEALING REQUIREMENTS

All drawings must be signed and sealed by a Registered Professional Engineer and/or Professional Land Surveyor, as appropriate.

2.8 TITLE BLOCK REQUIREMENTS

All drawings except the title sheet shall contain a title block and shall be arranged in the general format and include the information as shown on Exhibit 3. The title block shall be located in the lower right corner of the sheet; however as an alternate the title block may be located in the upper right corner of the sheet.

2.9 REQUIREMENTS OF SECTION 3

The information listed and/or described in Section 3 shall be shown on the drawings and arranged in the general format shown on the referenced exhibits of sample plans.

2.10 AUTOCAD DRAWING FILES

Once the project plans and document are at the final approval stage, AutoCad drawing files of the final plans shall be submitted to Wicomico County DPW.

3.0 INFORMATION TO BE SHOWN ON DRAWINGS

3.1 TITLE SHEET (Exhibit 4)

3.1.1. Vicinity map – Scale 1” = 2000’ Minimum

Map is to show major roads or streets, major streams, towns, north arrow, etc., and the site location.

3.1.2. Subdivision Location Plan – Scale 1” = 200’ Minimum

Plan to show overall subdivision layout, section limits, adjacent subdivisions, street names, control bench mark location(s), north arrow and zoning Lines as applicable. The section to be constructed shall be clearly delineated.

3.1.3. Title Information

Show the name of the subdivision, section number, election district, county and state.
3.1.4. Owner’s certificate, name, address, telephone number, fax number, e-mail address, and the Company name (if applicable).

I/We hereby certify that the Improvements Construction Plan is being submitted with my full knowledge and consent and is in accordance with my/our desires as Owner/Owners.

_______________________________
Name (print)                      Title

_______________________________
Signature Date

3.1.5 Engineer’s and/or surveyor’s certification and seal:

The certification and seal is to comply with the requirements of the State of Maryland Professional Licensing Board.

3.1.6. Wicomico County Department of Public Works signature block with text: “Approved by Wicomico County Department of Public Works”

3.1.7. Sheet index to drawings.

3.1.8. Legend of specific graphic symbols applicable to project which differ from the county’s standard symbols.

The standard symbols should be used to the fullest extent possible.

3.1.9. List of abbreviations applicable to project.

3.1.10. General notes (Including zoning, area, tax map, parcel & grid).

3.1.11. Horizontal and vertical control references.

3.1.12. Stormwater management plan number (As applicable).

3.1.13. Special areas of concern, i.e. forest conservation areas, critical areas, floodplain, floodway, airport surfaces, historic districts, public drainage association watersheds, agricultural preservation districts, paleochannel, wetlands and cemeteries.

3.1.14. All existing and proposed easements, i.e. access, drainage, utility, forest conservation and open space.

3.1.15. Maryland Department of the Environment ESD notes.

3.2 TYPICAL SECTIONS AND DETAIL SHEETS (See Exhibit 5)

3.2.1. Typical roadway sections, properly drawn, dimensioned and labeled.

3.2.2. Typical road entrance (minimum scale: 1 inch = 30 feet).

3.2.3. Typical cul-de-sac (minimum scale: 1 inch = 30 feet).

3.2.4. Typical drainage ditch section (minimum scale: 1 inch = 30 feet).

3.2.5. Special details, as required.

3.2.6. General notes (if not shown on Title Sheet)
3.2.7. Each intersection detailed with proposed spot elevations on curb returns and valley gutters (minimum scale: 1 inch = 30 feet). There must be a proposed spot elevation for the top of curb, curb flow line, edge of pavement, and the centerline road station.

3.2.8. Each cul-de-sac shown with spot elevations on curb and elevations shown for centerline of paving.

3.2.9. Acceleration/deceleration lane with necessary spot elevations.

3.2.10. Standard county construction notes as shown on Exhibit 9.

3.3 ROADWAY PLAN AND PROFILE SHEETS (See Exhibit 6)

3.3.1. Roadway Plan

3.3.1.1 Provide existing road or street details as required in order to determine the grades and drainage on each side of the centerline of the new road at tee and cross road intersections.

3.3.1.2 Existing road or street details beyond limit of work for road continuations, as may be needed to determine grades and drainage for future tie-ins.

3.3.1.3 Proposed road details for the limits stated above.

3.3.1.4 Existing structures, buildings and miscellaneous topographic features, including existing contours 100 feet beyond right-of-way lines of the street and 200 feet beyond limits of submission.

3.3.1.5 Existing utilities within and immediately adjacent to the proposed development.

3.3.1.6 Existing and proposed right-of-way, with dimensions (Do not label right-of-way widths as “right-of-way varies”).

3.3.1.7 Lot lines, lot numbers and block lettering that will agree with “Final” Record Plat.

3.3.1.8 Property lines where applicable.

3.3.1.9 Title block.

3.3.1.10 Street Names

3.3.1.11 Curb & gutter, valley gutters, handicap ramps, and sidewalks as applicable.

3.3.1.12 Proposed pavement (Shown and dimensioned).

3.3.1.13 Provide the centerline of roadway with complete bearing and stationing data that will agree with “Final” Record Plat. The stationing data shall include:

(a) 50 Foot Stations

(b) P.C. and P.T. Stations of proposed roadway including P.C. and P.T. Stations of curb at street returns.

(c) Equality stations at intersections, with proposed spot elevations.

(d) Stations for special alignment points.

(e) Stations for all structures to be constructed (Manholes, inlets, culvert pipes, etc.)
3.3.1.14. Complete curve data: Delta angle, radius, degree of curve, tangent length, and length of arc. (Middle ordinate offset, Chord bearing and chord distance are optional)

3.3.1.15. Radii of face of curb on intersection returns.

3.3.1.16. Complete Cul-de-sac information including:
   (a) Radii and curve data for face of curb.
   (b) Spot elevations along top of curb and the curb flow line.
   (c) Spot elevations along the centerline of paving.
   (d) The minimum cross slope shall be 1.5 percent.

3.3.1.17. Direction of flow arrows at curb returns with spot elevations

3.3.1.18. Open drainage systems
   (a) Location of ditches with type of lining indicated. (Reference to standard number or detail to be used)
   (b) Cross road pipe culverts.
      (1) Label size and type of pipe and show directions flow arrow on roadway plan.
      (2) Show headwalls or end sections and number headwalls with increasing numbers from downstream end to upstream end.
      (3) Show station at which the culvert crosses the roadway centerline with angle of crossing and the distance from the centerline to the headwalls or end sections. Station and offset to ends of culvert may be shown in lieu of angle and distances.
      (4) Provide in tabular form the following information:
         (a) Station of crossing at centerline.
         (b) Designation number, length, size, type, class of pipe, & percent slope.
         (c) Number, type, and standard numbers for headwalls and end sections.
         (d) Invert elevation at invert in and invert out and percentage of grade.

3.3.1.19. Closed Drainage Systems.
   (a) Show proposed drain at proper location with proper symbol, with location dimensioned from roadway centerline, right-of-way line or property line, whichever is more appropriate.
   (b) Designation number, length, size, type, class of pipe, & percent slope & show flow directional arrow.
(c) Show inlets, manholes, special structures in proper symbol and at correct location. Dimension location with respect to centerline and show on plan and include in structure schedule.

(d) Number inlets, manholes and structures starting from downstream end and proceeding upstream.

(e) Include a storm drain structure schedule which is to contain the following data:

1. Structure number.
2. Location of structure (road station).
3. Type of structure.
4. Top elevation of structure.
5. Pipe sizes and inverts in and out of the structure.
6. Standard detail number (Wicomico County or Maryland State Highway Administration) or cross reference to special detail.

If the above information is included on the plans and profiles, a separate storm water drain structure schedule will not be required. However, a structure schedule will help minimize congestion of information shown on the plans.

3.3.1.20. Guard rail: Show location and stationing in plan using proper symbol.

3.3.1.21. Shoulder treatment: Show type of treatment and station limits thereof on plan (or in chart form).

3.3.1.22. Clearly define limits of contract, work or submission.

3.3.1.23. Provide list of cross reference notes as required.

Example: For Storm Water Drain Profiles See Sheet No. 6.

3.3.1.24. Provide match lines to adjacent sheets based on road centerline stations.

3.3.1.25. Slope, drainage and utility easements: Show correct location (in conformance with Final Plat) with proper dimensions.

3.3.1.26. Proposed utilities (water, sewer, etc.) that are shown in detail on other sheets shall be shown in the correct location and the clearances with potential conflicts checked. The type and size of the utility shall be labeled (e.g., Prop. 8” San.).

3.3.1.27. Site Triangles, reference Wicomico County Zoning Code Chapter 225, Section 71 Building Limitations, Subsection E Visibility at Intersections.

3.3.2 Roadway Profiles

3.3.2.1. Existing ground profiles along the proposed centerline and ditch/swale centerlines.

3.3.2.2. Existing roadway profiles of intersecting and continued roadways with the location of the proposed intersection indicated. The profiles shall be of sufficient length to
ascertain if adequate stopping sight distance is available along the major roadway and the road continuation.

3.3.2.3. Proposed centerline, top of curb or curb flow line grade shown and labeled (in accordance with Wicomico County Standard “Typical Section”).

3.3.2.4. A legend for profile ground lines and proposed grade lines.

3.3.2.5. Tangent grades:
   (a) Percents of grade to a minimum of two (2) decimal places.
   Example: 7.24%
   (b) Profile elevations at 50 foot intervals.

3.3.2.6. Vertical Curves
   (a) Station and elevation of P.V.C., P.V.I. and P.V.T.
   (b) Station and elevation of crest and sag points.
   (c) Vertical Curve Data: P.V.I. station and elevation; vertical curve length; middle ordinate correction; and stopping sight distance.

3.3.2.7. Station and elevation of roadway intersections.

3.3.2.8. Profiles of special cut ditches and toe ditches shall be properly shown and labeled and invert elevations shown.

3.3.2.9. Linear profiles of the road edge or top of curb around cul-de-sacs if paving plan is not provided.

3.3.2.10. Profiles of special curb or edge of pavement transitions at intersections as required.

3.3.2.11. Location and invert elevations of existing and proposed utility crossings.

3.4 STORM DRAIN PROFILE SHEETS – (See Exhibit 7)

3.4.1. Existing ground and proposed grade at centerline of drain.

3.4.2. Name of road or street labeled including intersecting streets. If within an easement, refer to location.

3.4.3. Profiles of the proposed drains shall be accurately plotted and include the following information:
   (a) Number of Structure
   (b) Distances between centerline of structures and face of endwalls.
   (c) Length, size, type, class (or gauge) and grade of the proposed drain: e.g., 306 L.F. 24” R.C.C.P., Class 4 at 2.78%.
   (d) Quantity of flow for the design storm frequency (e.g., Q10 = 27 cfs) and velocity of flow (V = 4.0 fps)
   (e) Invert elevations, in and out, of all structures (Inlets, manholes, endwalls, etc.)
   (f) Locations and limits of concrete cradles and/or encasements when required.
(g) The 25-year hydraulic gradient profile for closed drainage systems, properly labeled.

(h) Headwater elevations for culverts.

(i) Rip-rap – indicate size and/or class.

3.4.4. Profiles of inlet and outlet ditches shall be provided and include the following information:

(a) Proposed invert grade with stations and elevations.

(b) Ditch lining (e.g., 10 L.F. Class 1 riprap outlet ditch, d = 9 inches). (Refer to standard number or detail to be used.)

(c) Quantity of flow and velocity of flow.

3.4.5. Existing and proposed utilities (water mains, sanitary sewers, gas mains, etc.) shall be shown as accurately as possible and labeled at crossings and where running parallel. Critical clearances between the utility and proposed drain shall be indicated.

3.4.6. Special storm drain details and typical sections may be added to the storm drain profile sheets.

3.5 STORMWATER MANAGEMENT PLAN

3.5.1 “Improvements Construction Plan” in its entirety shall be considered a part of the Stormwater Management Plan.

3.5.2 This sheet shall contain the following information:

(a) Plan of the facility.

(b) Cross-sections of the facility (Including maintenance area).

(c) Control Structure Details to shall include:

(1) Control Structure – show the low flow orifice size and invert elevations.

(2) Principal spillways - show the length, size, type, slope, and invert elevation.

(3) Emergency spillway - show the length, width, and invert elevations

(4) Rip-Rap, size and/or class.

(5) Anti-Vortex Device

(6) Sub-base preparations

(d) Access road and maintenance provisions.

(e) Construction specifications

(f) Planting plan, if applicable.

3.5.3 Construction sequence

3.5.4 Soil Conservation Service Approval Block

3.6 TRAFFIC CONTROL PLAN AND DETAILS (See Exhibit 8)

3.6.1 Traffic Control Plan shall be at a scale of 1” = 200’ Minimum.

3.6.2 The entire work zone and detour route shall be shown with all major streets named.
3.6.3 The location and type of proposed traffic control devices shall be shown. All necessary MUTCD or SHA standards must be referenced and provided.

3.6.4 The County’s general notes regarding traffic control measures shall be included in this plan. (See Exhibit 10)

3.6.5 The preparer’s certification shall be included in this plan per the County’s Guidelines for Traffic Control Plan Preparation. (See Exhibit 10)

4.0 SUPPLEMENTAL INFORMATION

4.1 SUBMITTAL FORMS

4.1.1 Construction cost bonding estimate
4.1.2 Performance Bond, Letter of Credit, or Check in Lieu of Bond, based on the construction cost bonding estimate.
4.1.3 Maintenance and Inspection Agreement ($40 recording fee payable to Clerk of Circuit Court)
4.1.4 Non-Tidal Wetlands Disclaimer
4.1.5 Public Works Agreement
4.1.6 Performance Bond (with Public Works Agreement)
4.1.7 Performance Bond (without Public Works Agreement)
4.1.8 Review Checklist
4.1.9 Stormwater Management Data Summary Sheet

4.2 GUIDANCE INFORMATION

4.2.1. As-built Information
4.2.2 Construction Plan Notes
4.2.3 Construction Sequence
4.2.4 Guidelines for Traffic Control
4.2.5 Maintenance Schedule
4.2.6 Performance Bond Release Checklist
4.2.7 Pipe Installation Requirements

4.3 STORMWATER MANAGEMENT REPORT (Required Information)

4.3.1 “Narrative summary of stormwater management analysis and data summary” in its entirety shall be considered a part of the Stormwater Management Plan.

4.3.2 Hydrologic calculations using SCS TR-55 methodology. Provide a tabular summary of pre- and post- development areas, curve numbers, times of concentration and flow rates.

4.3.3 Pre and Post Development Drainage Area Maps, min. scale 1 inch = 200 feet, showing:

        4.3.3.1 Sufficient topographic information to delineate watershed sub-areas. The major drainage areas and sub-areas shall be lettered or numbered for reference to and in
agreement with the design computations. Acreage shall be shown for each area.

4.3.3.2 Hydrologic soil groups.
4.3.3.3 Property boundaries.
4.3.3.4 Time of concentration flow paths separated into overland, shallow concentrated and open channel flow.
4.3.3.5 Land uses.
4.3.4 Hydrologic calculations using SCS methodologies based on only the area being developed, TR-55 or TR-20
4.3.5 Peak runoff rate calculations for impervious areas only, use for routing if higher peak.
4.3.6 Water quality and quantity calculations, both required and provided.
4.3.7 Planting plan and table.
4.3.8 Forebay, if the SWM facility is over 10,000 square feet.
4.3.9 Control structure and emergency spillway design, including anti-seep collars and anti-floatation.
4.3.10 Ponds with side slopes steeper than 4:1, fenced by 6’ high security fencing with 12’ wide gate.
4.3.11 Pond cross-sections showing bottom dimensions, side slopes and minimum 15’ wide accessible maintenance area.
4.3.12 Trashrack/anti-vortex device for the principal spillway.
4.3.13 Geotechnical analysis for infiltration facilities by Registered Professional Engineer, Geologist or Soil Scientist. The design infiltration rate shall be one-half of the average field infiltration rates.
4.3.14 Structural design of non-standard structures by Registered Professional Engineer (where applicable).

4.4 STORM DRAIN DESIGN (Required Information)
4.4.1 Drainage area map for drainage system showing similar information as stormwater management.
4.4.2 Hydrologic calculations using rational method provided in tabular form (min. 10yr. storm).
4.4.3 Hydraulic gradient (25 year storm) and gutter spread calculations (2 year storm).
4.4.4 Structural design of non-standard structures by Registered Professional Engineer.
4.4.5 Pipe/ditch capacity and velocity.

4.5 ROADWAY DESIGN AND CONSTRUCTION
4.5.1 Wicomico County, Maryland Construction Standards (4th Edition) must be used. Where there is no current Wicomico County Standard, Maryland SHA standards shall be used.
4.5.2 WI 101.00 (Roadway Construction Specifications): CBR test locations for proposed subdivision roads are to be determined by the Wicomico County DPW at the proposed design subgrade elevation in order to determine road base design.

4.5.3 Watertight joints are required for storm drain pipes and storm drain structures.

4.5.4 Resident inspection required for water and sewer utilities installations on Wicomico County roads and town roads within Wicomico County that are under Wicomico County Department of Public Works jurisdiction.

4.6 STORMWATER MANAGEMENT FACILITIES OUTLETING TO PUBLIC DRAINAGE ASSOCIATION (PDA) AND OR FARM DITCHES (FROM APRIL 26, 2006 MEMO)

4.6.1 Public Drainage Association (PDA) ditches and farm ditches are not designed for high volume of stormwater runoff without overtopping. Wicomico County DPW has therefore established requirements for stormwater management facilities draining to PDA or farm ditches.

4.6.2 The 10-year post-development peak rates held to 2-year pre-development peak rate with a tailwater condition of the ditch half full.

4.6.3 Road designed to have no flooding with 25-year hydrologic gradient.

4.6.4 Building areas a minimum of 1 foot above the 100-year storm elevation.

4.7 RESIDENT INSPECTION FOR THE INSTALLATION OF MUNICIPAL UTILITIES IN COUNTY ROADS (FROM MAY 26, 2004 MEMO)

4.7.1 Wicomico County DPW has established requirements for resident inspection for installation of city utilities in county roads.

4.7.2 All projects with utility installation parallel to the road will require resident inspection. The entire width of road shall be resurfaced where more than one line or disturbs more than ½ the paved surface. Resurfacing and trench repairs will occur per County Standards. Replacement of permanent striping shall be the responsibility of the Developer.

4.7.3 The inspection will be by a qualified resident inspector approved by the Wicomico County DPW and paid for by the developer.

4.7.4 The construction will be coordinated with the county inspector who will attend preconstruction and progress meetings. Compaction testing shall be required for trench backfill and road stabilization. The resident inspector will verify all construction is per SHA Specifications and work with the county inspector who will dictate testing requirements.

4.7.5 A Performance Bond will be required for construction and a Maintenance Bond will be required for a 2-year warranty period after construction is completed. This bonding will be provided to Wicomico County or may be combined with the City of Salisbury bond requirements if applicable.

4.7.6 A Traffic Control Plan will be required before plan approval and a Schedule of Work provided before construction begins.

4.7.7 A Public Works Agreement must be executed between the County and Developer stating the
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responsibilities of each. This document will be approved by the County and recorded at the Developer’s expense.

APPENDIX: LIST OF EXHIBITS

Exhibit 1: STANDARD SYMBOLS
Exhibit 2: STANDARD SYMBOLS
Exhibit 3: STANDARD TITLE BLOCK
Exhibit 4: TITLE SHEET
Exhibit 5: ROADWAY PLAN AND PROFILE SHEET
Exhibit 6: ROADWAY INTERSECTION (ACCELERATION & DECELERATION)
Exhibit 7: PLAN VIEW DETAILS (ENTRANCE, INTERSECTION, & CUL-DE-SAC)
Exhibit 8: STORM DRAIN PROFILES
### TOPOGRAPHICAL FEATURES

- Woods
- Marsh
- Streams
- Ditches
- Gulleys
- Fences, Wood
- Fences, Iron
- Fences, Wire
- Fences, Hedge
- Fences, Stone, Brick
- Concrete Wall
- Utility Poles
- Electrical Transformer
- Telephone Pedestal
- CATV Junction Box
- Railroad Tracks
- High Points with Spot Elevations
- Low Points with Spot Elevations
- Cellar Floor Elevation: 55.0
- Finished Floor Elevation: 65.0
- Proposed Contour Lines
- Existing Contour Lines

### SURVEYOR'S SYMBOLS

- Benchmark (BM #1)
- Traverse Hub
- Stake with Tack Center
- Iron Pipe Found (IPF)
- Iron Pipe Set (IPS)
- Concrete Post Found (CPF)
- Concrete Post Set (CPS)
- Rebar Found (RBF)
- Rebar Set (RBS)

### ROADS & STREETS

#### PLAN

- Existing Curb
- Proposed Curb
- Concrete Sidewalk
- Concrete Valley Gutter
- Edge of Paved Road
- Edge of Dirt or Gravel Road
- Existing Right of Way Line
- Existing Property Line
- Guardrail
- Centerline Existing Road
- Centerline Proposed Road
- P.I. Transit Line
- Horizontal Curves:
  - Point of Curvature (P.C.)
  - Point of Tangent (P.T.)
  - Point of Intersection (P.I.)
  - Point of Reverse Curvature (P.R.C.)
  - Point of Compound Curvature (P.C.C.)

#### PROFILE

- Top of Curb Grade
- Curb Flowline Grade
- Existing Road
- Centerline Grade
- Proposed Road
- Centerline Grade

#### VERTICAL CURVES:

- Point of Vertical Curvature (P.V.C.)
- Point of Vertical Tangent (P.V.T.)
- Point of Vertical Intersection (P.V.I.)
- Point on Curve (P.O.C.)
- Point of Vertical (P.V.R.C.)
- Reverse Curvature
- Point of Vertical (P.V.C.C.)

### WICOMICO COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

GUIDELINES FOR PREPARATION OF IMPROVEMENTS CONSTRUCTION PLANS

---STANDARD SYMBOLS---

EXHIBIT NO. 1