BOARD OF COUNTY COMMISSIONERS
FOR ST. MARY’S COUNTY, MARYLAND

MANUAL OF DESIGN
AND CONSTRUCTION STANDARDS

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION

P. O. BOX 508
CALIFORNIA, MARYLAND 20619

Adopted: May 7, 2002
Effective: May 13, 2002
ST. MARY’S COUNTY
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION

PURPOSE

This Manual of Design and Construction Standards is established to supersede and replace the “Specifications and Standards for Highway and Street Construction” dated April 7, 1976, adopted as Resolution No. 76-7, and amended from time to time by the Order of the St. Mary’s County Board of County Commissioners. This manual has been developed by and for the Department of Public Works & Transportation (DPW&T) to provide practical, safe and economical access to the land in St. Mary’s County. An attempt was made to achieve a balance between the sometimes-conflicting concerns for safety, economy and scenic beauty.

The DPW&T is responsible for promulgating standards for construction activities within the public rights-of-way and easements maintained by St. Mary’s County. Safety must be the highest priority to establish safe roadways for our residents, school buses, service vehicles and farm equipment. Among DPW&T’s major objectives are to insure public safety, minimize inconvenience to the general public and to ensure that all construction is performed in accordance with standard specifications and approved plans. The County will conduct periodic reviews of the Manual and invites constructive input in order to make this document an effective and unified guidance tool.

For informational purposes and to achieve policy objectives, certain requirements may be altered in limited instances based on in-field conditions. Variances from the specifications may only be granted, in writing, by the Director of Public Works & Transportation, or his designated representative(s).

Parties seeking access to the public right-of-way are expected to be familiar with all applicable standards as promulgated by the Department, and to employ qualified contractors to utilize these standards for activities conducted in the rights-of-way. By establishing uniform placements for utilities and other users of the rights-of-way, conflicts between parties may be minimized, thereby benefiting all users.

AUTHORITY

Under the Provisions of Article 25 of the Annotated Code of Maryland, Section 10:

The Board of County Commissioners of St. Mary’s County may regulate any public road, street, avenue, lane, alley or bridge, sidewalk, curb, gutter, and storm drainage facilities within St. Mary’s County, which is not within the corporate limits of any incorporated city or town; and which is designated or maintained as a part of the State or Federal Highway System or any extension with respect to:

- Use by private and public utilities in the construction and maintenance necessitated by the performance of their purpose; and
- The construction and maintenance of driveway connections where those connections are provided.

The Board of County Commissioners of St. Mary’s County shall enact by ordinance, rules and regulations governing the grading, construction, improving, maintaining, and repairing of roads now used by the public or intended for public use, including roads proposed for subdivisions, whether now recorded or hereafter proposed, including sidewalks, curbs and gutters, driveway entrances and storm drainage facilities and appurtenances to be located within the subdivision. The Board of County Commissioners of St. Mary’s County shall also provide appropriate traffic control devices when mandated and may regulate the engineering, constructing, and accepting of any new public road, street, avenue, lane, alley, bridge, sidewalk, curb, gutter and storm drain facilities into the County Road Maintenance System.

All construction, maintenance, repair, use, or occupation of public streets, sidewalks or other public ways, bridges, storm sewers, and anything within the public right-of-way shall be under the supervision of the Director of Public Works & Transportation who is charged with the administration and enforcement of the standards within this Manual. Any use of these standards and specifications and associated drawings should be under the supervision of a professional engineer accepting the responsibility for their use. The standards shall serve to supplement and support existing practices and regulations and are intended to assist, but not substitute for competent work by design professionals.
ST. MARY’S COUNTY  
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
MANUAL OF DESIGN AND CONSTRUCTION STANDARDS

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<td>R/24</td>
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<tr>
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<th>Road Type</th>
<th>Travel Width (T)</th>
<th>R/W Width (R)</th>
<th>Min. Posted Speed/Max. Design Speed</th>
<th>Minimum Horizontal Radius</th>
<th>Min. - Max. Longitudinal Grade</th>
<th>Pavement Section (See Note #1)</th>
<th>Shoulder Width (S)</th>
<th>Number of Lots</th>
<th>Min. Sight Distance Stop/Int.</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cul-De-Sac (R/1)</td>
<td>Place</td>
<td>18'</td>
<td>40'</td>
<td>25/25</td>
<td>165'</td>
<td>0.5-10%</td>
<td>1 1/2&quot; Surface 2 1/2&quot; Base</td>
<td>2'</td>
<td>1-5 Lots</td>
<td>150/260</td>
<td>(A)</td>
</tr>
<tr>
<td>Local Road (R/2)</td>
<td>Court</td>
<td>18'</td>
<td>45'</td>
<td>25/25</td>
<td>200'</td>
<td>0.5-10%</td>
<td>1 1/2&quot; Surface 2 1/2&quot; Base</td>
<td>4'</td>
<td>6-50 Lots</td>
<td>150/260</td>
<td>(B)</td>
</tr>
<tr>
<td></td>
<td>Street</td>
<td>20'</td>
<td>45'</td>
<td>30/30</td>
<td>275'</td>
<td>0.5-10%</td>
<td>1 1/2&quot; Surface 2 1/2&quot; Base</td>
<td>4'</td>
<td>6-100 Lots</td>
<td>200/310</td>
<td>(C)</td>
</tr>
<tr>
<td>Minor Collector (R/3)</td>
<td>Drive</td>
<td>20'</td>
<td>50'</td>
<td>35/35</td>
<td>375'</td>
<td>0.5-8%</td>
<td>1 1/2&quot; Surface 2 1/2&quot; Base</td>
<td>6'</td>
<td>501-2,000 ADT</td>
<td>250/360</td>
<td>(D)</td>
</tr>
<tr>
<td>Major Collector (R/4)</td>
<td>Road</td>
<td>22'</td>
<td>60'</td>
<td>35/45</td>
<td>625'</td>
<td>0.5-8%</td>
<td>1 1/2&quot; Surface 4&quot; Base</td>
<td>8'</td>
<td>2,001-6,000 ADT</td>
<td>400/460</td>
<td>(E)</td>
</tr>
<tr>
<td>Arterial (R/5)</td>
<td>Boulevard</td>
<td>12' Lanes</td>
<td>80-100'</td>
<td>45/55</td>
<td>AASHTO</td>
<td>0.5-8%</td>
<td>1 1/2&quot; Surface 5&quot; Base</td>
<td>8'-10'</td>
<td>6,001-12,000 ADT</td>
<td>500/560</td>
<td>(F)</td>
</tr>
</tbody>
</table>

**Remarks:**

(A) Minimum/maximum road length is 250’/600’. Two (2) off-street parking spaces/lot required. Parking on one side and staggered parking on alternate sides is allowed. Minor acceleration/deceleration lanes may be required. Single or shared rural entrances may be required.

(B) Applies only to dead-end roads that shall have a maximum length of 600’.

(C) Applies only to loop streets with two (2) outlets onto a higher classification road, parking one side is allowed. Acceleration/deceleration lane may be required. For lengths less than 1/2 mile, travel width may be reduced by two (2) feet.

(D) On-street parking is not encouraged. Acceleration/deceleration lane is required.

(E) Individual lot access will be restricted. Acceleration/deceleration lane is required. On-street parking is not encouraged.

(F) AASHTO guidelines are to be followed. Specific design criteria shall be approved by DPW&T. On-street parking is prohibited.

**Notes:**

1) Surface course and base course pavement to be according to Job Mix Formula as approved by DPW&T. Pavement to be placed on 9” Bank Run Gravel or CR-6 with the exception of Arterial Road Sections where 10” Bank Run Gravel or CR-6 will be required.
## ST. MARY’S COUNTY DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION

### URBAN PUBLIC ROAD STANDARDS

<table>
<thead>
<tr>
<th>Road Classification</th>
<th>Road Type</th>
<th>Travel Width (T)</th>
<th>R/W Width (R)</th>
<th>Min. Posted Speed/Max. Design Speed</th>
<th>Minimum Horizontal Radius</th>
<th>Min. - Max. Longitudinal Grade</th>
<th>Pavement Section (See Note #1)</th>
<th>Sidewalk Width (W)</th>
<th># of Sides</th>
<th>Landscape Width (L)</th>
<th>Number of Lots/ADT</th>
<th>Min. Sight Distance Stop/Int.</th>
<th>Remarks</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Cui-De-Sac</td>
<td>Place</td>
<td>20’</td>
<td>40’</td>
<td>25/25</td>
<td>165’</td>
<td>0.75-10%</td>
<td>1 1/2” Surface 2 1/2” Base</td>
<td>5’</td>
<td>Two</td>
<td>4’</td>
<td>1-5 Lots</td>
<td>150/260</td>
<td>(A)</td>
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</tr>
<tr>
<td>Local Road</td>
<td>Court</td>
<td>24’</td>
<td>45’</td>
<td>25/25</td>
<td>200’</td>
<td>0.75-10%</td>
<td>1 1/2” Surface 2 1/2” Base</td>
<td>5’</td>
<td>Two</td>
<td>4.5’</td>
<td>6-30 Lots</td>
<td>150/260</td>
<td>(B)</td>
<td></td>
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<td></td>
<td>Street</td>
<td>26’</td>
<td>45’</td>
<td>30/30</td>
<td>275’</td>
<td>0.75-10%</td>
<td>1 1/2” Surface 2 1/2” Base</td>
<td>5’</td>
<td>Two</td>
<td>4.5’</td>
<td>6-60 Lots</td>
<td>200/310</td>
<td>(C)</td>
<td></td>
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</tr>
<tr>
<td>Minor Collector</td>
<td>Drive</td>
<td>30’</td>
<td>50’</td>
<td>35/35</td>
<td>375’</td>
<td>0.75-8%</td>
<td>1 1/2” Surface 2 1/2” Base</td>
<td>5’</td>
<td>Two</td>
<td>4’</td>
<td>250-1,500 ADT</td>
<td>250/360</td>
<td>(D)</td>
<td></td>
</tr>
<tr>
<td>Road</td>
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</tr>
<tr>
<td>Major Collector</td>
<td>Road</td>
<td>36’</td>
<td>60’</td>
<td>45/45</td>
<td>625’</td>
<td>0.75-8%</td>
<td>1 1/2” Surface 4” Base</td>
<td>5’</td>
<td>Two</td>
<td>6’</td>
<td>1,501-6,000 ADT</td>
<td>400/460</td>
<td>(E)</td>
<td></td>
</tr>
<tr>
<td>(R/9)</td>
<td></td>
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<tr>
<td>Arterial</td>
<td>Boulevard</td>
<td>48’</td>
<td>80-100’</td>
<td>45/55</td>
<td>AASHTO</td>
<td>0.5-8%</td>
<td>1 1/2” Surface 5” Base</td>
<td>5’</td>
<td>Two</td>
<td>Varies</td>
<td>6,001-12,000 ADT</td>
<td>550/560</td>
<td>(F)</td>
<td></td>
</tr>
<tr>
<td>(R/10)</td>
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</tr>
</tbody>
</table>

**Remarks:**

- (A) Minimum/maximum road length is 250’/600’. Two (2) off-street parking spaces/lot required. Parking on one side is allowed. Minor acceleration/deceleration lane may be required. Single or shared urban entrances may be required.
- (B) Applies only to dead-end roads that shall have a maximum length of 600’. Parking on one side is allowed.
- (C) Applies only to loop streets with two (2) outlets onto a higher classification road. Parking on one side is allowed. Acceleration/deceleration lane may be required. For lengths less than 1/2 mile, travel width may be reduced by two (2) feet.
- (D) Acceleration/deceleration lane is required. Parking on one side is allowed.
- (E) Individual lot access will be restricted. Acceleration/deceleration lane is required. On-street parking is prohibited.
- (F) AASHTO guidelines to be followed. Specific design criteria shall be approved by DPW&T. On-street parking is prohibited.

**Notes:**

1) Surface course and base course pavement to be according to Job Mix Formula as approved by DPW&T. Pavement to be placed on 9” Bank Run Gravel or CR-6, with the exception of Arterial Road Sections where 10” Bank Run Gravel will be required.
Notes:
1. Provide a driveway entrance schedule and/or specifications.
2. MSHA Standard precast or cast in place shallow CDS, CCG inlets will be required in lieu of curb cut openings.

* Surface course and base course pavement to be according to Job Mix Formula as approved by DPW&T.
** Pavement to be placed on 9" Bank Run Gravel or CR-8, with the exception of Arterial Road Sections where 10" Bank Run Gravel will be required.
<table>
<thead>
<tr>
<th>Road Class / Road Type</th>
<th>Design Speed M.P.H.</th>
<th>Minimum Required Sight Distance Foot (L)*</th>
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<tbody>
<tr>
<td>Cul-De-Sac / Court</td>
<td>25</td>
<td>260</td>
</tr>
<tr>
<td>Local / Court</td>
<td>25</td>
<td>260</td>
</tr>
<tr>
<td>Local / Street</td>
<td>30</td>
<td>310</td>
</tr>
<tr>
<td>Minor / Drive</td>
<td>35</td>
<td>360</td>
</tr>
<tr>
<td>Major / Road</td>
<td>45</td>
<td>460</td>
</tr>
<tr>
<td>Arterial / Boulevard</td>
<td>55</td>
<td>510</td>
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</tbody>
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R.O.W.: Additional R.O.W. if required on owners side, to be dedicated to the Board of County Commissioners.

* Slight distance values above are minimums and should be used under constrained conditions only. The design engineer shall strive to achieve longer sight distances, especially under high volume and speed conditions.

**NOTES:**
1. A detailed plan and profile of the intersection of a proposed improvement street with an existing County Road shall be submitted with the plans and profiles. The detailed plan shall be to a scale of 1" = 50'. A profile (1" = 5') of the existing County Road shall be shown a minimum of 0'-60' to either side of intersection.
2. Design shall be based on a sight of eye of 2.50 feet to a top of object of 4.25 feet. These are suggested design guides and all sight distances shall be in accordance with AASHTO and subject to review and approval by the County.
3. Values shown represent roadway conditions and adjustments may be required based on grade of major road.

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**St. Mary's County Department of Public Works & Transportation**

Approved: 
President, Board County Comm. 
Director, Public Works

**Minimum Standards**

<table>
<thead>
<tr>
<th>For Sight Distance At Street Intersections</th>
<th>R</th>
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<tbody>
<tr>
<td></td>
<td>11</td>
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</tbody>
</table>
Notes:
1. Acceleration lanes minimum length
   25' full pavement width (widening)
   50' taper width
2. An overlay of the existing road may be
   required for proper construction of
   a standard roadway section thru the
   area of accel/decel lanes.
3. The minimum recommended width for a
   shoulder bypass lane is 10 feet with a
   width of 12 feet desirable.
4. Curb and Gutter is required
   in urban areas and may be
   requested by the design
   engineer for rural application.

<table>
<thead>
<tr>
<th>Design Speed</th>
<th>Full Pavement Width (ft)</th>
<th>Taper Width (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>150</td>
<td>100</td>
</tr>
<tr>
<td>35</td>
<td>185</td>
<td>125</td>
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<tr>
<td>40</td>
<td>220</td>
<td>150</td>
</tr>
<tr>
<td>45</td>
<td>270</td>
<td>180</td>
</tr>
<tr>
<td>50</td>
<td>320</td>
<td>200</td>
</tr>
</tbody>
</table>

5. All pavement striping and markings shall
   be in accordance with the Manual on Uniform
   Traffic Control Devices (MUTCD).
6. Contractor shall sawcut the edge of the existing
   roadway along the area of widening.

St. Mary’s County
Department of
Public Works &
Transportation

Approved ____________________________
President, Board County Comm.

Director, Public Works

Standards for
Acceleration, Deceleration
and Bypass Lanes

Revised: ____________________________

1/26

R

12

Typical Design Length for Bypass Lanes (ft)

<table>
<thead>
<tr>
<th>Approach</th>
<th>Approach</th>
<th>Departure</th>
<th>Departure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taper</td>
<td>Lane</td>
<td>Lane</td>
<td>Taper</td>
</tr>
</tbody>
</table>

50-100 | 100-200 | 50-100 | 50-100 |
Notes:
1. Design and installation of entrance culverts, and sections and widths shall be in accordance with approved Standards and Specifications.
2. Street name signs shall be in accordance with standard: R/24 for Public and Private roads.
3. A Construction Permit for work within the County Right-of-Way is required when an entrance or proposal on an existing county road. Additional curb and gutter may be required for new work with evaluations made of interior streets as determined by the Department of Public Works & Transportation.
4. Face of curb on urban entrances must align with the outer edge of shoulder, or existing curb.
5. Contractor shall provide the edge of the existing roadway along the area of widening.
6. No maintenance of the existing roadway may be required for proper construction of a standard roadway section than the area of roadway/lane taken.

St. Mary's County Department of Public Works & Transportation

Approved: President, Board County
Director, Public Works

Minor Acceleration/Deceleration Entrances
For Major Subdivisions
And Commercial Sites

Revised:

1/1/20

13
Note: Standard cul-de-sac paving radii must be increased to 50' where length of road exceeds 1/2 mile to accommodate school buses.

<table>
<thead>
<tr>
<th>Standard Cul-De-Sacs</th>
<th>Stock R.</th>
<th>30° Rad.</th>
<th>24° Pav.</th>
</tr>
</thead>
<tbody>
<tr>
<td>R.O.W.</td>
<td>T</td>
<td>R.O.W.</td>
<td>R</td>
</tr>
</tbody>
</table>

St. Mary's County Department of Public Works & Transportation
Approved: ____________________
President, Board of County Comm:
Director, Public Works

Revised: ____________________

R

14
Erect MSHA W Beam Traffic Barrier (805.27) with Std. W Beam Section (805.22)

Easement lines as determined by the design engineer.

Subdivision Section Boundary

R.O.W. Line

R.

T

36" Easement Min.

R.O.W.

35" Min.

Right

36" Min.

R.

R.O.W.

T

Denotes revetment grading and construction easement which shall be shown on the design plans and records.

(TYPE A) TEMPORARY T-TURNAROUND

(TYPE B) TEMPORARY CIRCULAR TURNAROUND

St. Mary's County Department of Public Works & Transportation

Approved ____________________

President, Board County Comm.

Director, Public Works

Standard Temporary Turnarounds

Revised: ________________

10-08

R

15
Notes:
1. Driveway surface shall be 2" minimum Asphalt (Surface Course) on 6" of Bank Run Gravel and shall extend a minimum of 10' beyond the edge of travel lane.
2. A minimum of 20 ft. of C.N.P.A. (18 gauge min.) to be installed (17"x3'3") min. with end sections.
3. Installation shall be in accordance with approved standards and specifications.
4. Channel protection and safety devices to be provided as required. Where in excess of 5 c.f.s., require submission of design computations by the applicant.
5. Adjust dimensions slightly if necessary to conform to minimum grades and minimum cover as shown herein.

PLAN VIEW

5. Builder/Contractor will be responsible for any damage to areas within the County right-of-way.
6. The R.D. of Permits and Inspections shall be contacted 48 hours prior to beginning any work.
7. Driveway plans schedules are required to be shown on all road plan submissions.
8. For shared driveways, minimum driveway width and upon which shall be increased.
9. For profile, see shared entrance plate details.

St. Mary's County
Department of Public Works & Transportation
Approved ____________________________
President, Board County Comm.
Director, Public Works

Typical Single Lot Driveway Entrance

Revised: 16 & 17
Construction Specifications
1. Stone size: Use MSHA size No. 2 (2 1/2" to 1") or AASHO designation M43, size No. 2 (2 1/2" to 1 1/2"). Use crushed stone.
2. Length: Adequate, but not less than fifty (50) feet. Additional length to one hundred (100) feet may be required.
3. Thickness: Not less than twelve (12) inches. Mountable berm shall be a minimum of six (6) inches.
4. Width: Not less than ten (10) feet.
5. Washing: When necessary, washes shall be cleared to remove sediment prior to entrance to public right-of-way. Where washing is required,
   it shall be done on an area stabilized with crushed stone which drains into an approved sediment trap or sediment basin. All sediment
   shall be prevented from entering any storm drain, ditch, or watercourse through use of sand bags, gravel, boxes, or other approved methods.
6. Maintenance: The entrance shall be maintained in a condition which will prevent trapping and flowing of sediment onto public rights-of-way.
   This may require periodic top dressing with additional stone as conditions demand and repair and/or cleaning of any measures used to trap
   sediment. All sediment spilled, dropped, washed, or tracked onto public rights-of-way must be removed immediately.
7. Location: A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site.
   Vehicles entering the site must travel over the entire length of the stabilized construction entrance.

St. Mary's County
Department of Public Works & Transportation
Approved:__________________________
President, Board of County Comm.
Director, Public Works

Typical Construction Entrance

Revised:__________________________

R

21
Notes
1. Minimum storage length must be provided to accommodate peak hour queues.
2. Provide break/lanes as may be required. Min. width shall be 20'-0" for 1 lane of travel and 24'-0" for 2 lanes. Additional lanes, channelization and signalization shall be provided if warranted.
3. Raised medians 6'-0" in width shall be monolithic concrete.
4. The clear radius shall be sized to accommodate large vehicle turning movements. The design vehicle template shall conform to the prevailing truck size expected to access the facility with consideration for occasional use by WB-50 vehicles.
5. Design shall accommodate pedestrian movements.

Right-of-Way

Existing Roadway

St. Mary's County
Department of
Public Works &
Transportation
Approved
President, Board County Comm.
Director, Public Works

Standard
Monumental Entrance

Revised:
1/22

22
Urban Road Application

Location of signs must not obscure any potential traffic hazard. At any location where the typical placement of a sign interferes with a safe sight distance, an alternate location must be found.

All traffic signs are to be installed prior to or during the process of paving the streets with the base course of asphalt. The name plate will be a minimum width of 6 inches or private, local and minor roadways and 8 inches with 9 inch letters for all other roads. The length will be a minimum of 24 inches. The maximum length will be 36 inches, unless approved by the DPW/ET Director.

Shyler name signs shall be mounted above the name plate in the assembly. In subdivisions where no curbing is provided, the street name sign shall be mounted in such a manner that the longer name plate is a minimum of 2 feet back of the drain line and is safe from damage from traffic.

Rural Road Application

Notes:

St. Mary's County
Department of Public Works
Transportation

Approved: Director, Public Works

President, Board County Comm

Sign Location Details
Rural and Urban

Revised:

R 23
PRIVATE WAY
PRIVATE

COUNTY ROAD

Blue Background
White Lettering

Note: Street names signs shall be extruded aluminum with high intensity reflective sheeting, beaded leged and border, 4 inch characters (min.) with letters and background colors as specified. Std. cap and arrow brackets shall be used for cross street signage.

Green Background
White Lettering
Note: Street name signs shall be extruded aluminum with high intensity reflective sheathing, beveled legend and border, 4 inch characters (min.) with letters and background colors as specified. Stud cap and cross brackets shall be used for cross street signage.

Note: Location of signs must not obstruct any potential traffic hazard. At any location where the typical placement of a sign interferes with a safe sight distance, an alternate location must be found.

Street name sign to be extruded aluminum blades. The Department of Public Works should be consulted for supply sources. Installation and maintenance of private road signs is the responsibility of the property owner served by the private road. See See Typical Shared Driveway Entrance detail.

St. Mary's County Department of Public Works & Transportation
Approved: President, Board County Comm.
Director, Public Works

Sign Location
Private Roads

Revised: 1/25/20

25
Notes:

1. Sidewalk ramps shall usually be located at the midpoint of the street, but not more than five feet from the edge of the street.
2. The slope shall be determined by the height of the structure.
3. No ramp shall be more than 7 feet wide.
4. A 1/2-inch expansion joint shall be provided at the top of the ramp.
5. All pavement markings shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices published by the Federal Highway Administration.

St. Mary's County
Department of Public Works & Transportation

Approved: ____________________________
Director, Public Works

Typical Curb Cut Handicap Ramps

Revised: ____________________________

R 26
Notes:
1. All members are of extruded aluminum.
2. All seat and backrests to be capped or ends. There shall be no rough edges.
3. Finish of aluminum to be smooth.

St. Mary's County
Department of Public Works & Transportation

President, Board County Comm.
Director, Public Works

Standard Bus Shelter and Bench
BASIC CRITERIA
1. SPEED LIMIT ≤ 45 MPH.
2. ADEQUATE STOPPING SIGHT DISTANCE.
3. FOR MIDBLOCK PREFERRED BLOCK LENGTH ≥ 600'.
4. CROSSWALK ADEQUATELY ILLUMINATED.
5. MINIMAL CONFLICTING ATTENTION DEMANDS.

AVERAGE MONTHLY PEDESTRIAN VOLUME (PEAK FOUR HOURS)

100 VPH 200 300

≥ 4-LANE WITHOUT MEDIAN

2-LANE OR 4-LANE WITH MEDIAN
INSTALL CROSSWALK

DO NOT INSTALL CROSSWALK

= LOCATIONS WITH PREDOMINANTLY YOUNG, ELDERLY OR HANDICAPPED PEDESTRIANS
= OTHER LOCATIONS

25 PPH

10 PPH

PEAK HOUR VEHICLE VOLUME*

*FOR STREETS WITH A MEDIAN, USE ONE-WAY VOLUME.

GUIDELINES FOR CROSWALK INSTALLATION

REVISED:

St. Mary’s County
Department of
Public Works &
Transportation

Approved

President, Board County Comm.

Director, Public Works

R

30
Notes:

1. In areas where grass will grow, it is usually the most economical channel lining except on steep slopes where the velocity of flow exceeds the permissible velocities for grass protection.

2. The use of erosion control melting may be required.

3. Grade stabilization structures and/or additional measures may be required where runoff is directed to highly erodible soils.

Variable depth 'D' based on drainage design computations (1' Min.)

Variable depth 'D' of lining to be specified on plans (1' Min.) Depths should be limited to preclude saturation of the subgrade. The minimum desirable grade for unlined channels should be based upon a tolerable velocity for vegetation.

2" Topsoil, seed, and mulch
2" Topsoil and sod

Width 'W' varies based on drainage design computations, as specified in plans (1.5' Min.)
Notes:
1. Various materials including concrete, asphalt, stone, and gravel are used for linings where grass will not provide adequate protection. Smooth linings generate higher velocities than rough linings such as stone and gravel. Precipitation must be made to distribute the energy of the high-velocity flow before it is released to avoid erosion at the outlet and damage to the channel lining. If erosive velocities are developed, a special channel or energy dissipator may be required. Concrete lined channels shall be designed with a minimum 8" thickness.
2. The use of erosion control matting is preferred in lieu of rip-rap within County right-of-way.
3. Grade stabilization structures and/or additional measures may be required where runoff is directed to highly erodible soils.
Pipe Bedding

1. Permission must be granted by a PW inspector prior to backfilling areas to be tamped with approved materials. Soils having maximum dry density of less than 100 lb/ft^3 shall be considered unacceptable and shall not be used.

2. Material(s) shall be placed in horizontal layers not to exceed 5 inches in loose depth over the entire area and uniformly compacted in accordance with the Maryland DOT standards. Each layer shall be filled and compacted before the next layer is placed.

3. When a trench is located within the paving section of the shoulder area, it is to be backfilled in compliance with the above to within one foot of the top of the sub-grade; the remaining depth of the trench shall be backfilled with thoroughly compacted crusher run stone or gravel to be at the option and approval by the Director of Public Works.

4. The minimum width (90° of the trench) shall be 200 or 80+3 whichever is less, unless otherwise approved by the Director of Public Works.

Pipe Bedding Alternative

Composted to not less than 95% of the maximum density.

Select backfill — Hand placed to SSD composition in accordance with MDOT space.

 Crushed stone MDOT size 37 in accordance with MDOT space.

Composted to not less than 95% of the maximum density.

St. Mary's County
Department of
Public Works &
Transportation

<table>
<thead>
<tr>
<th>Approved</th>
<th>Storm Sewer Bedding Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>President, Board County Comm.</td>
<td></td>
</tr>
<tr>
<td>Director, Public Works</td>
<td></td>
</tr>
</tbody>
</table>
Note: Backfill in trenches shall be in accordance with MSHA specifications and shall be thoroughly compacted in 6" layers for the full depth of the trenches by tamping or by some other approved method to within 1' of the top of subgrade. The remaining depth of the trench shall be filled with thoroughly compacted crushed stone, slag or gravel. Whenever sheeting or shoring is required to prevent cave-ins or bulging due to the depth of the trench or type of material encountered, the sheeting, wherever found necessary, shall remain in place but cut off 1' below the bottom of the replaced surfacing. All backfill replaced shall be compacted to at least 95% of maximum density in accordance with MSHA specifications and certified by an approved geotechnical testing contractor. In lieu of controlled fill, flexible fill in accordance with MSHA specifications may be utilized.
Notes:
1. SNEDCO requests, prior to the start of construction of the road, a final record plot (with bearings and distances for all lots) be submitted to the St. Mary's District Office for design of the electrical system. If possible, please submit on disk (autocad Release 10) to expedite the process. Installation shall conform to SNEDCO's proposed underground cable distribution design and specifications, and is subject to SNEDCO inspection.
2. If a final record plot cannot be provided by the developer, conduit will be required at all intersections and at 100 feet intervals along the transmission line. Intervals between conduit crossings may be changed by SNEDCO discretion and at written request from the developer.
3. Conduit, plugs and placement will be at the expense of the developer.
4. SNEDCO will provide the marking material, but must be notified of placement. (no markers will be placed, no placement)
5. Conduit is to be 4 inch Schedule 40 PVC
6. Conduit is to be placed a minimum 36 inches and a maximum 42 inches below final grade and its to extend the complete right-of-way width (see profile above)
7. If any conduit road crossings are not placed, SNEDCO will place the conduit and charge the developer all uncompleted costs, including restoration.

St. Mary's County Department of Public Works & Transportation

Approved:
President, Board County Comm.
Director, Public Works

Typical Utility Conduit Road Crossings

Revised:

U 2
## Installation Pattern

<table>
<thead>
<tr>
<th>Pattern Type</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same Side of Road</td>
<td>A</td>
</tr>
<tr>
<td>Both Sides of Road and Opposite Each Other</td>
<td>B</td>
</tr>
<tr>
<td>Staggered Along Both Sides of Road</td>
<td>C</td>
</tr>
<tr>
<td>Opposite Each Other Across Median</td>
<td>D</td>
</tr>
</tbody>
</table>

### Example

<table>
<thead>
<tr>
<th>Area Classification</th>
<th>Roadway Classification</th>
<th>Luminaire Category/ Traffic Count (VPD)</th>
<th>Maximum Pole Spacing (Feet)</th>
<th>Placement (Feet)</th>
<th>Bracket Length (Feet)</th>
<th>Mounting Height (Feet)</th>
<th>Installation Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCAL</td>
<td>0-250</td>
<td>5,000</td>
<td>245</td>
<td>10.5</td>
<td>12</td>
<td>28</td>
<td>A</td>
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<tr>
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<td>251-500</td>
<td>5,000</td>
<td>245</td>
<td>10.5</td>
<td>12</td>
<td>28</td>
<td>A</td>
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<td></td>
<td>251-400</td>
<td>5,000</td>
<td>245</td>
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<td>10</td>
<td>28</td>
<td>A</td>
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<td></td>
<td>401-3000</td>
<td>5,000</td>
<td>250</td>
<td>8</td>
<td>10</td>
<td>28</td>
<td>A</td>
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<td></td>
<td>3001-5500</td>
<td>8,000</td>
<td>200</td>
<td>8.5</td>
<td>10</td>
<td>35</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>OVER 5500</td>
<td>8,000</td>
<td>225</td>
<td>11.5</td>
<td>12</td>
<td>35</td>
<td>D</td>
</tr>
</tbody>
</table>

**Notes:**
- **(VPD)** Vehicles Per Day
- **(1)** Measured from face of pole to face of curb.
- **(2)** When luminaire is proposed at a section of curb and gutter roadway where no sidewalk is provided, pole shall be placed six feet behind face of curb. Bracket length shall be eight feet.
- **(3)** Specified mounting height exceeds normal street light fixture height above the roadway. Special street light design may be submitted by the engineer to reduce the specified mounting height. Approval of this special design by the Department of Public Works is required.

**Installation Pattern**

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<td>D</td>
</tr>
</tbody>
</table>

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**ST. MARY’S COUNTY**

DEPARTMENT OF PUBLIC WORKS

LIGHTING LEVELS FOR PROPOSED STREETS
### ST. MARY'S COUNTY
DEPARTMENT OF PUBLIC WORKS
LIGHTING LEVELS FOR EXISTING STREETS

<table>
<thead>
<tr>
<th>AREA CLASSIFICATION</th>
<th>ROADWAY SECTION TYPE</th>
<th>WIDTH OF ROADWAY (FT)</th>
<th>LUMINARIES SIZE (LUMENS)</th>
<th>MAXIMUM SPACING (FEET)</th>
<th>MOUNTING HEIGHT (FEET)</th>
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</thead>
<tbody>
<tr>
<td>Residential</td>
<td>Curb &amp; Gutter (Urban)</td>
<td>30</td>
<td>8,000</td>
<td>170 (A)</td>
<td>25</td>
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<tr>
<td></td>
<td></td>
<td>36</td>
<td>8,000</td>
<td>170 (B)</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>44</td>
<td>8,000</td>
<td>175 (B)</td>
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</tr>
<tr>
<td></td>
<td>Residential Ditch</td>
<td>24</td>
<td>8,000</td>
<td>170 (A)</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>(Rural)</td>
<td>36</td>
<td>8,000</td>
<td>170 (B)</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>48</td>
<td>8,000</td>
<td>225 (B)</td>
<td>25</td>
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<tr>
<td>Industrial/Commercial</td>
<td>Curb &amp; Gutter (Urban)</td>
<td>30</td>
<td>14,000</td>
<td>205 (A)</td>
<td>30</td>
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<td>36</td>
<td>8,000</td>
<td>220 (B)</td>
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<td>23,000</td>
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<td>Industrial Ditch</td>
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<tr>
<td></td>
<td>(Rural)</td>
<td>36</td>
<td>8,000</td>
<td>220 (B)</td>
<td>25</td>
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<tr>
<td></td>
<td></td>
<td>48</td>
<td>8,000</td>
<td>225 (B)</td>
<td>25</td>
</tr>
</tbody>
</table>

**NOTE:**

(A) All luminaries to be installed on one side of the road unless otherwise noted.

(B) Luminaries to be installed staggered along both sides of the road.

(C) Bracket lengths to provide a minimum of five feet overhang of the road surface.

Due to the many variables associated with the geometric of existing roads, brackets lengths shall be determined by the Smeco engineer and shown on the plans.

Source: Fairfax County 1988 Public Facilities Manual (as modified).
Notes:
1) Contact SMECO for lighting specifications, manufacturer, light placement guidelines.
2) DPW&T to approve locations proposed within public right-of-way.
3) Illumination to be specified in accordance with St. Mary's County DPW&T lighting levels

<table>
<thead>
<tr>
<th>Residential and Multi-Family</th>
<th>Commercial and Village Centers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>St. Mary's County Department of Public Works &amp; Transportation</td>
</tr>
<tr>
<td></td>
<td>Approved ____________________</td>
</tr>
<tr>
<td></td>
<td>President, Board County Comm.</td>
</tr>
<tr>
<td></td>
<td>Director, DPW&amp;T</td>
</tr>
</tbody>
</table>

Typical Street Light
Ornamental
Rural and Urban

Revised: ____________________

U 4
1. Sidewalk underdrain is to be used when the sidewalk longitudinal gradient is 3% or more and when the underlying soil has 32% or more passing the No. 200 sieve and has a PI of 0.12 or less.

2. Underdrain pipe must not exceed 1,000 feet in length without recharging into the storm drain system or into an eliminating manhole or storm drain or into an open ditch. The length of run may be increased up to an additional 1,000 feet if 8” diameter pipe is used in the downstream 3,000 feet section of the run.

3. All pipe to be 8” diameter unless otherwise noted on plans. Minimum grade of pipe shall be 3.0%. Gravel may be used to permit connection to discharge structures. Plastic pipes shall not be permitted under street pavement sections. Toe pipe used in the pavement section shall be adequate to support street pavement loadings.

4. When the street section has been rough graded and the class“A” tests are made for street pavement, design, stone and fill analysis will be included with the CBR tests. If these tests indicate that underdrains are required, additional base foundation tests will be made at the sidewalk subgrade to determine if sidewalk underdrains are required. These tests will then be prepared by the design consultant and submitted to PWMT for review and approval.

5. Construction tests on material subgrades must be made prior to the grading of sidewalks. Performance tests on the underdrains shall be used for all sidewalks which are to be maintained by PWMT.

6. Where required, sidewalk underdrain shall be used for all sidewalks which are to be maintained by PWMT.

7. All materials and construction of this design in a public right-of-way to be maintained by St. Mary’s PWMT shall conform to current PWMT standards.

**Alternate Underdrain Pipe**

<table>
<thead>
<tr>
<th>Pipe Size</th>
<th>6” Pipe</th>
<th>8” Pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perf. Heat</td>
<td>0.022</td>
<td>0.034</td>
</tr>
<tr>
<td>Corrugated Lock Seam Steel</td>
<td>0.022</td>
<td>0.034</td>
</tr>
<tr>
<td>Perf. Vertical Clay</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Perf. Wall Corrugated &amp; Clay</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Perf. Coppermized Drain</td>
<td>600</td>
<td>1200</td>
</tr>
<tr>
<td>Perf. Expanded Metal</td>
<td>1200</td>
<td>1200</td>
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<tr>
<td>Perf. Expanded Metal (2)</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>Perf. Expanded Metal (3)</td>
<td>1400</td>
<td>1700</td>
</tr>
</tbody>
</table>

*Sheet Thickness = inches*

**St. Mary’s County**

Department of Public Works & Transportation

Approved

President, Board of County Comm.

Director, Public Works

**Sidewalk Underdrain**

Revised: U 6
Notes: 1. On stitch section streets, face of mailbox to be in line with back edge of shoulder
2. In stitch section streets in out, support for mailbox to be minimum 2 feet to the outside of the stitch line.
3. In cur and gutter section streets, face of mailbox to be in line with back edge of cur line.
4. Mailbox height shall be - Stitch Section: 36" to 42" from shoulder grade to bottom of box.
   Curb and Gutter Section: 36" from top of curb to bottom of box.
5. The face of the mailbox and post shall be set, as shown on this section detail.
Brass Right-of-Way Marker

Monument W/Brass Marker - Plan

Notes:
1) A minimum of two (2) monuments shall be placed in each site/subdivision. Location shall be shown on the recorded record plot with the corresponding roof elevations.
2) Monuments shall be located on street right-of-way lines at street intersections, single point of curve and block corners. They shall be spaced as far as possible but that both are within sight of a single point, the sight lines being contained mostly within the street limits.
3) Such permanent reference markers shall be set flush with the ground and in areas least likely to be disturbed by anticipated construction activity.

Concrete Monument
(Concrete mix No. 3, 3,000 psi)

Monument W/Brass Marker - Elevation

St. Mary's County
Department of
Public Works & Transportation

Approved

President, Board County Comm.

GPS Monument Detail

Revised:

U 8
<table>
<thead>
<tr>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acer rubrum “Armstrong”</td>
<td>Armstrong Red Maple</td>
</tr>
<tr>
<td>Acer rubrum “Autumn Flame”</td>
<td>Armstrong Flame Red Maple</td>
</tr>
<tr>
<td>Acer rubrum “Bowhall”</td>
<td>Bowhall Red Maple</td>
</tr>
<tr>
<td>Acer rubrum “October Glory”</td>
<td>October Glory Red Maple</td>
</tr>
<tr>
<td>Acer platanoides</td>
<td>Norway Maple</td>
</tr>
<tr>
<td>Carpinus betulus</td>
<td>European Hornbeam</td>
</tr>
<tr>
<td>Carpinus caroliniana</td>
<td>American Hornbeam</td>
</tr>
<tr>
<td>Cercidiphyllum japonica</td>
<td>Katsura Tree</td>
</tr>
<tr>
<td>Fraxinus americana</td>
<td>White Ash</td>
</tr>
<tr>
<td>Fraxinus pennsylvanica lanceolata</td>
<td>Green Ash (varieties)</td>
</tr>
<tr>
<td>“Marshall’s Seedless”, “Autumn Purple” or Roseball Ash”</td>
<td></td>
</tr>
<tr>
<td>Gingko biloba</td>
<td>Male Ginko – Male cultivars only</td>
</tr>
<tr>
<td>Gleditsia triacanthos inermis</td>
<td>Thornless Honeylocust</td>
</tr>
<tr>
<td>“Shademaster”, “Skyline”</td>
<td></td>
</tr>
<tr>
<td>Ilex “opaca tree form”</td>
<td>Tree Form American Holly</td>
</tr>
<tr>
<td>Liriodendron tulipifera</td>
<td>Tulip tree (Tulip or Yellow Poplar)</td>
</tr>
<tr>
<td>Liquidambar styraciflua</td>
<td>Sweetgum</td>
</tr>
<tr>
<td>Nyssa sylvatica</td>
<td>Black Gum</td>
</tr>
<tr>
<td>Ostrya virginiana</td>
<td>Hornbeam</td>
</tr>
<tr>
<td>Phellodendron amurense</td>
<td>Amur Corktree</td>
</tr>
<tr>
<td>Plantanus acerifolia</td>
<td>London Planetree</td>
</tr>
<tr>
<td>Plantanus acerifolia “Bloodgood Strain”</td>
<td>Bloodgood London Planetree</td>
</tr>
<tr>
<td>Pyrus calleryana “Bradford”</td>
<td>Bradford Callery Pear</td>
</tr>
<tr>
<td>Quercus rubra</td>
<td>Northern Red Oak</td>
</tr>
<tr>
<td>Quercus coccinea</td>
<td>Scarlet Oak</td>
</tr>
<tr>
<td>Quercus falcata</td>
<td>Southern Red Oak</td>
</tr>
<tr>
<td>Quercus palustris</td>
<td>Pin Oak</td>
</tr>
<tr>
<td>Quercus phellos</td>
<td>Willow Oak</td>
</tr>
<tr>
<td>Sophora japonica “Regent”</td>
<td>Japanese Pagoda Tree</td>
</tr>
<tr>
<td>Tilia cordata</td>
<td>Littleleaf Linden</td>
</tr>
<tr>
<td>Tilia cordata “Chancellor” or “Greenspire”</td>
<td>Chancellor Littleleaf Linden (Greenspire)</td>
</tr>
<tr>
<td>Tilia euchlora</td>
<td>Crimean Linden</td>
</tr>
<tr>
<td>Tilia tomentosa</td>
<td>Silver Linden</td>
</tr>
<tr>
<td>Ulmus parvifolia</td>
<td>Chinese Elm</td>
</tr>
<tr>
<td>Zelkova serrata</td>
<td>Japanese Zelkova</td>
</tr>
</tbody>
</table>

NOTE: All trees must be a minimum of 1-1/2” caliper when planted (diameter of trunk measured 6” from earth ball). All tree species must meet American Association of Nurserymen Standards for the types and sizes specified. Trees are to be staked or guyed and guaranteed for one full year.

*Any tree species not appearing on this list must receive approval by this Department.*