

**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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ST. MARY'S COUNTY DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION
RURAL PUBLIC ROAD STANDARDS

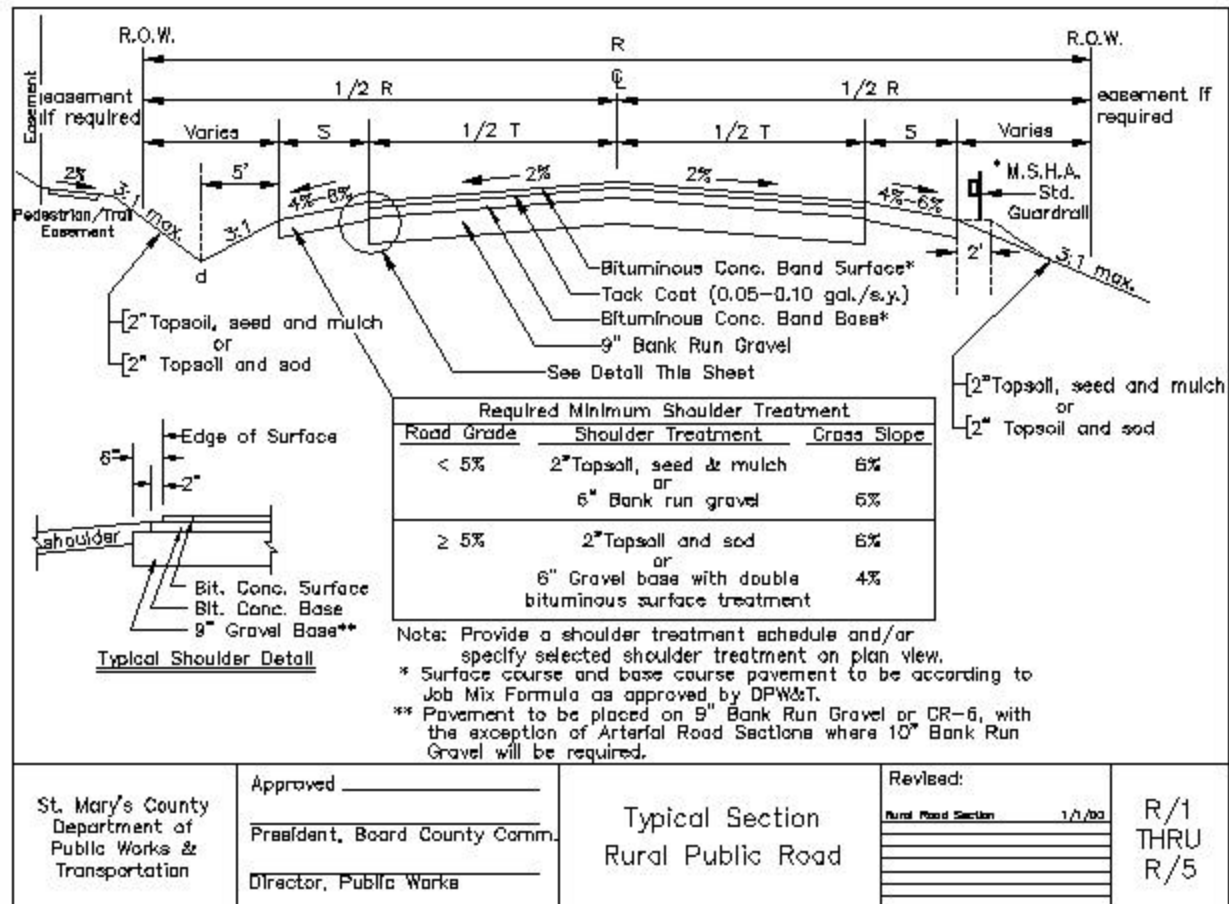
Road Classification	Road Type	Travel Width (T)	R/W Width (R)	Min. Posted Speed/Max. Design Speed	Minimum Horizontal Radius	Min. - Max. Longitudinal Grade	Pavement Section (See Note #1)	Shoulder Width (S)	Number of Lots	Min. Sight Distance Stop/Int.	Remarks (See Below)
Cul-De-Sac (R/1)	Place	18'	40'	25/25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

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

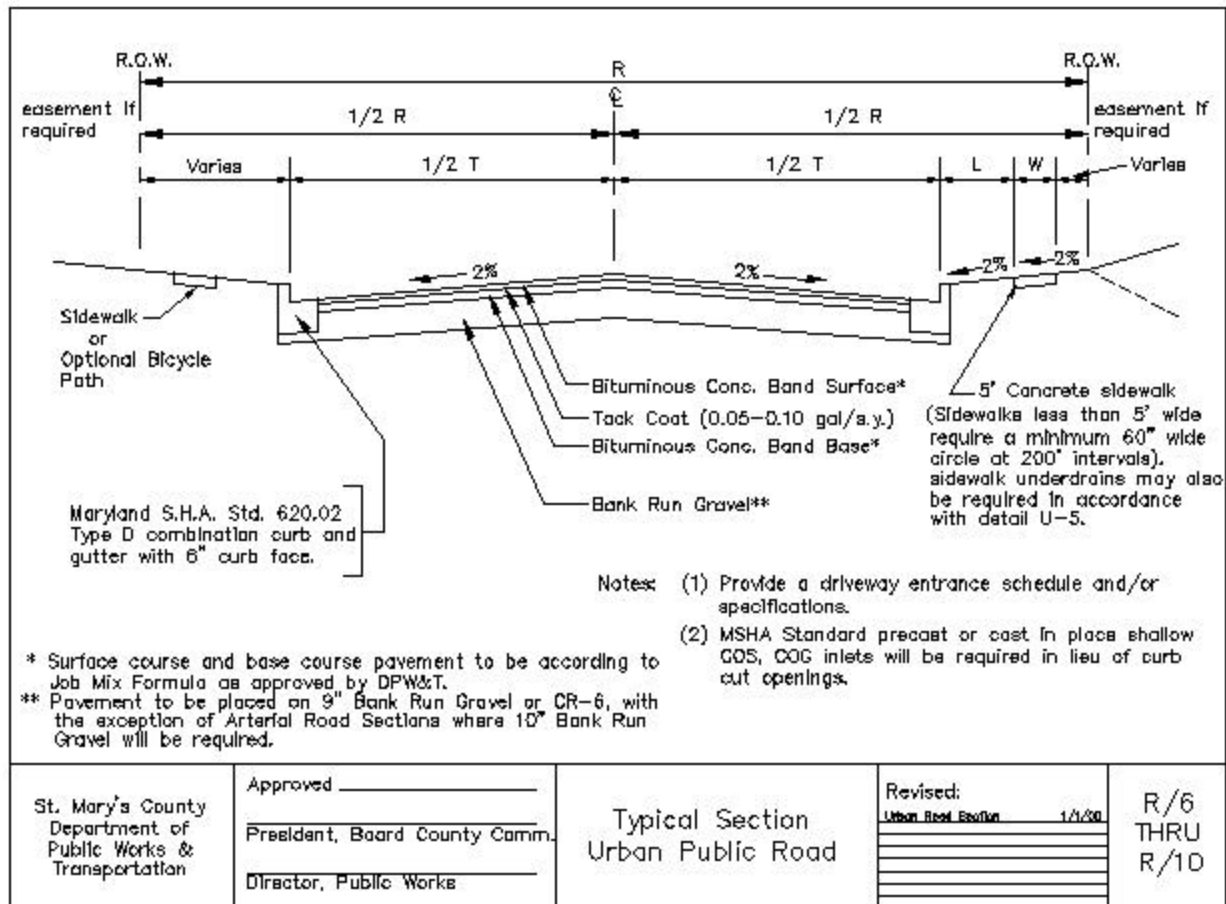
Road Classification	Road Type	Travel Width (T)	R/W Width (R)	Min. Posted Speed/Max. Design Speed	Minimum Horizontal Radius	Min. - Max Longitudinal Grade	Pavement Section (See Note #1)	Sidewalk Width (W) # of Sides	Landscape Width (L)	Number of Lots/ ADT	Min. Sight Distance Stop/Int.	Remarks (See Below)
Cul-De-Sac (R/6)	Place	20'	40'	25/25	165'	0.75-10%	1 1/2" Surface 2 1/2" Base	5' Two	4'	1-5 Lots	150/260	(A)
Local Road (R/7)	Court	24'	45'	25/25	200'	0.75-10%	1 1/2" Surface 2 1/2" Base	5' Two	4.5'	6-30 Lots	150/260	(B)
	Street	26'	45'	30/30	275'	0.75-10%	1 1/2" Surface 2 1/2" Base	5' Two	4.5'	6-60 Lots	200/310	(C)
Minor Collector (R/8)	Drive	30'	50'	35/35	375'	0.75-8%	1 1/2" Surface 2 1/2" Base	5' Two	4'	250-1,500 ADT	250/360	(D)
Major Collector (R/9)	Road	36'	60'	45/45	625'	0.75-8%	1 1/2" Surface 4" Base	5' Two	6'	1,501-6,000 ADT	400/460	(E)
Arterial (R/10)	Boulevard	48'	80-100'	45/55	AASHTO	0.5-8%	1 1/2" Surface 5" Base	5' Two	Varies	6,001-12,000 ADT	550/560	(F)

Remarks:

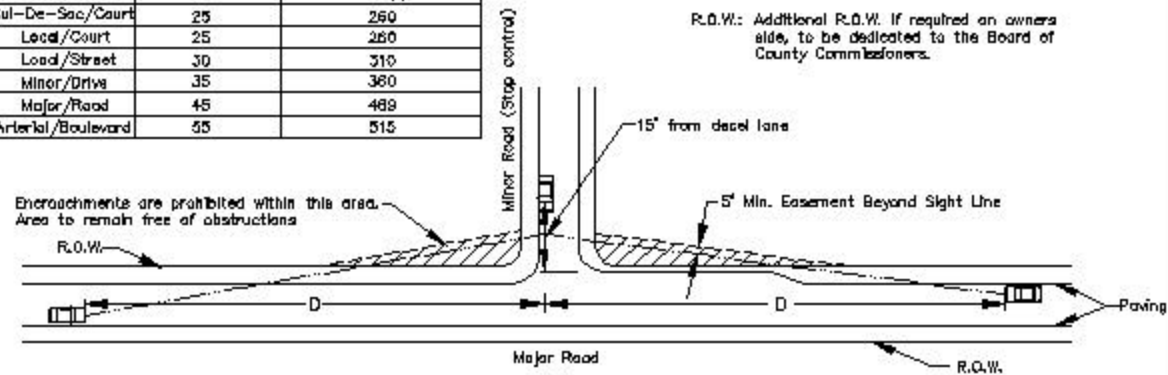
- (A) Minimum/maximum road length is 250'/600'. Two (2) off-street parking spaces/lot required. Parking on one side is allowed. Minor acceleration/deceleration lane may be required. Single or shared urban entrances may be required.
- (B) Applies only to dead-end roads that shall have a maximum length 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.



Road Class./ Road Type	Design Speed M.P.H.	Minimum Required Sight Distance Feet (1)*
Cul-De-Sac/Court	25	260
Local/Court	25	260
Local/Street	30	310
Minor/Drive	35	360
Major/Road	45	469
Arterial/Boulevard	55	515



* Sight distance values above are minimum 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 subdivision 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' vert.) of the existing County Road shall be shown a minimum of D+50' to either side of intersection.
- (2) Design shall be based on a height of eye of 3.50 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 flat roadway conditions and adjustments may be required based on grade of major road.

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

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

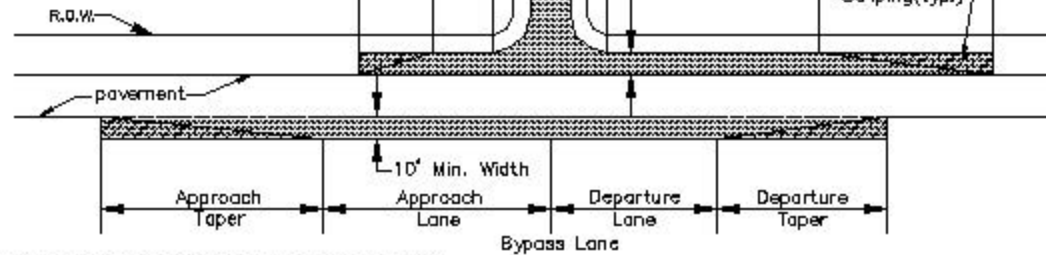
Minimum Standards
For
Sight Distance At
Street Intersections

Revised:
Sight Distance Easement 1/1/20

R
11

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.



Deceleration Lane Minimum Length		
Design Speed m.p.h.	Full Pavement Width 'fp'	Taper Width 't'
30	150'	100'
35	185'	125'
40	220'	150'
45	270'	165'
50	320'	180'
55	350'	200'

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.

Typical Design Length for Bypass Lanes (ft.)			
Approach Taper	Approach Lane	Departure Lane	Departure Taper
50-100	100-200	50-100	50-100

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

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

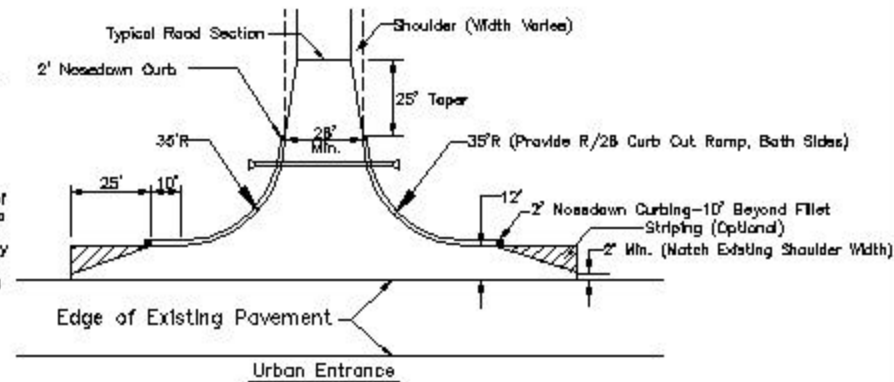
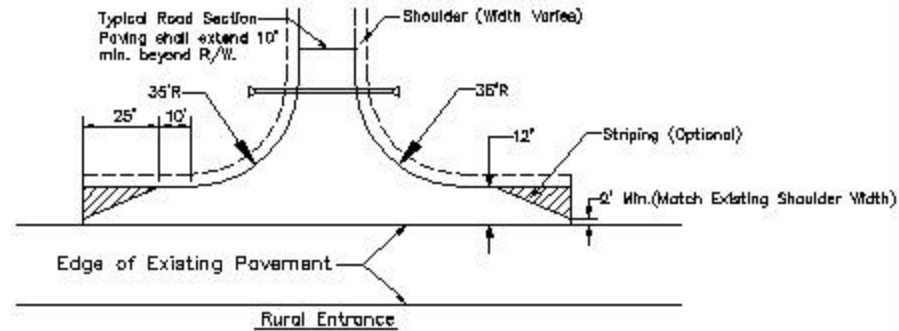
Standards for
Acceleration, Deceleration
and Bypass Lanes

Revised:
Revised 1/1/80

R
12

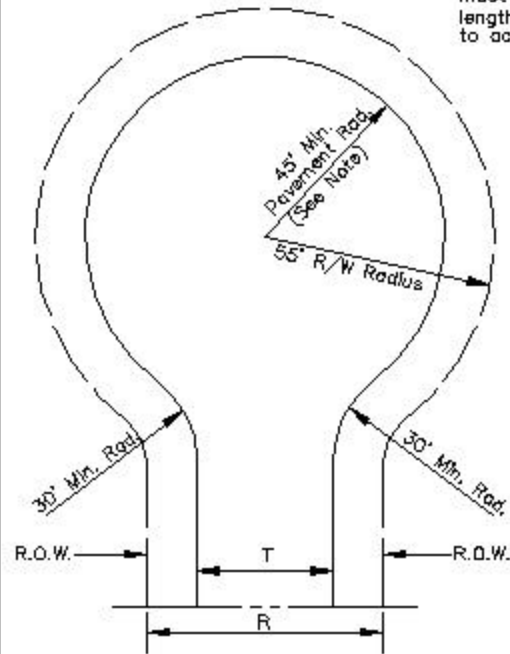
Notes:

1. Design and installation of entrance culverts, end sections and velocity dissipaters shall be in accordance with approved Standards and Specifications.
2. Street name signs shall be in accordance with standard details R/24 for Public and Private roads.
3. A Construction Permit for work within the County Right-of-way is required when an entrance is proposed onto an existing county road. Additional curb and gutter may be required for continuity with adjacent sites and/or drainage 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.
6. Contractor shall sawcut the edge of the existing roadway along the area of widening.
7. An overlay of the existing road may be required for proper construction of a standard roadway section thru the area of accel/decel lanes.

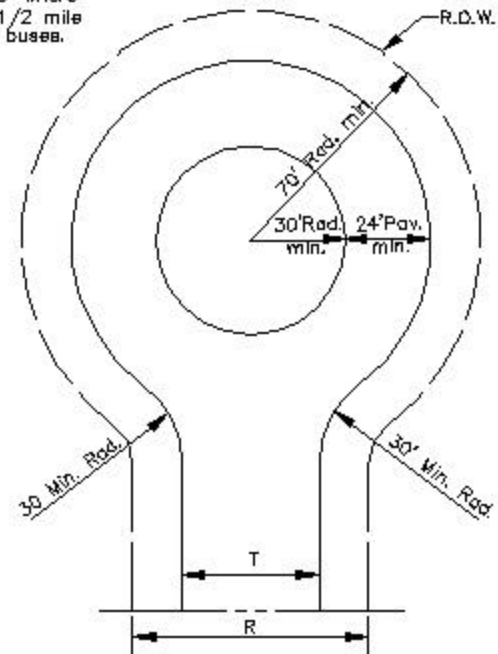


St. Mary's County Department of Public Works & Transportation	Approved _____	Minor Accel/Decel Entrances For Major Subdivisions And Commercial Sites	Revised:	R 13
	President, Board County Comm.		Add notes	
	Director, Public Works			

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



Standard



Landscaped

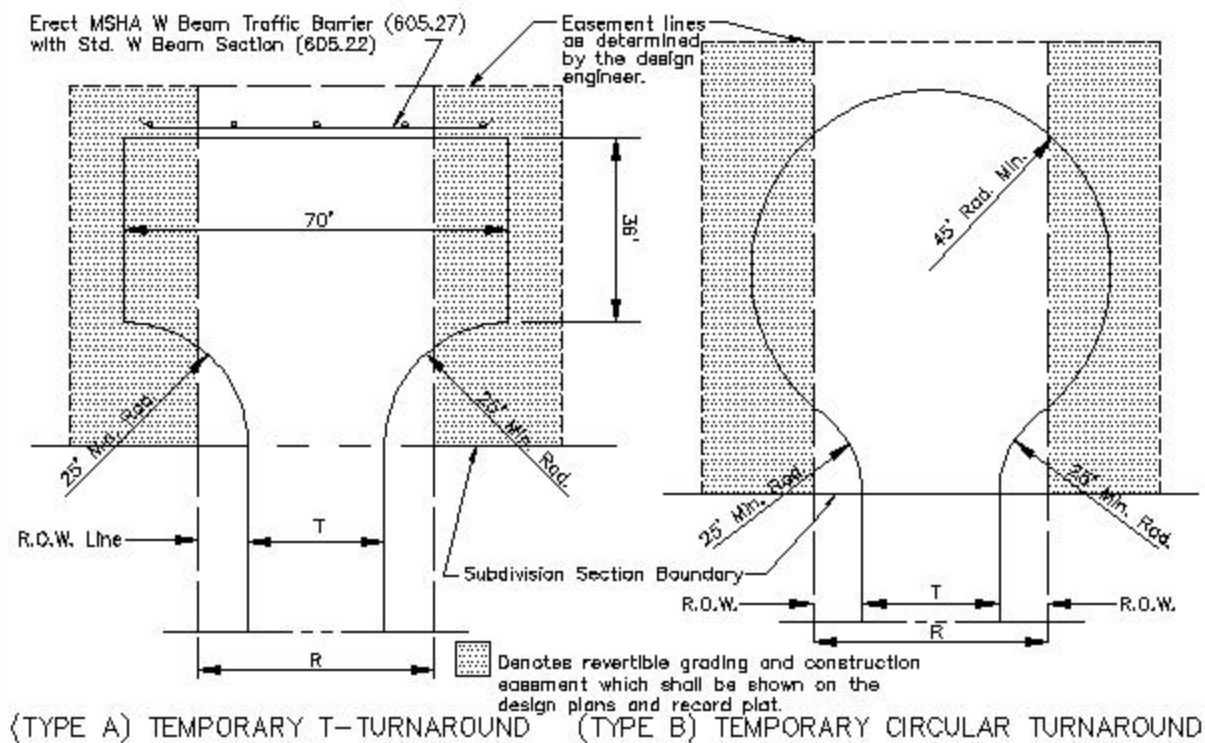
St. Mary's County
Department of
Public Works &
Transportation

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

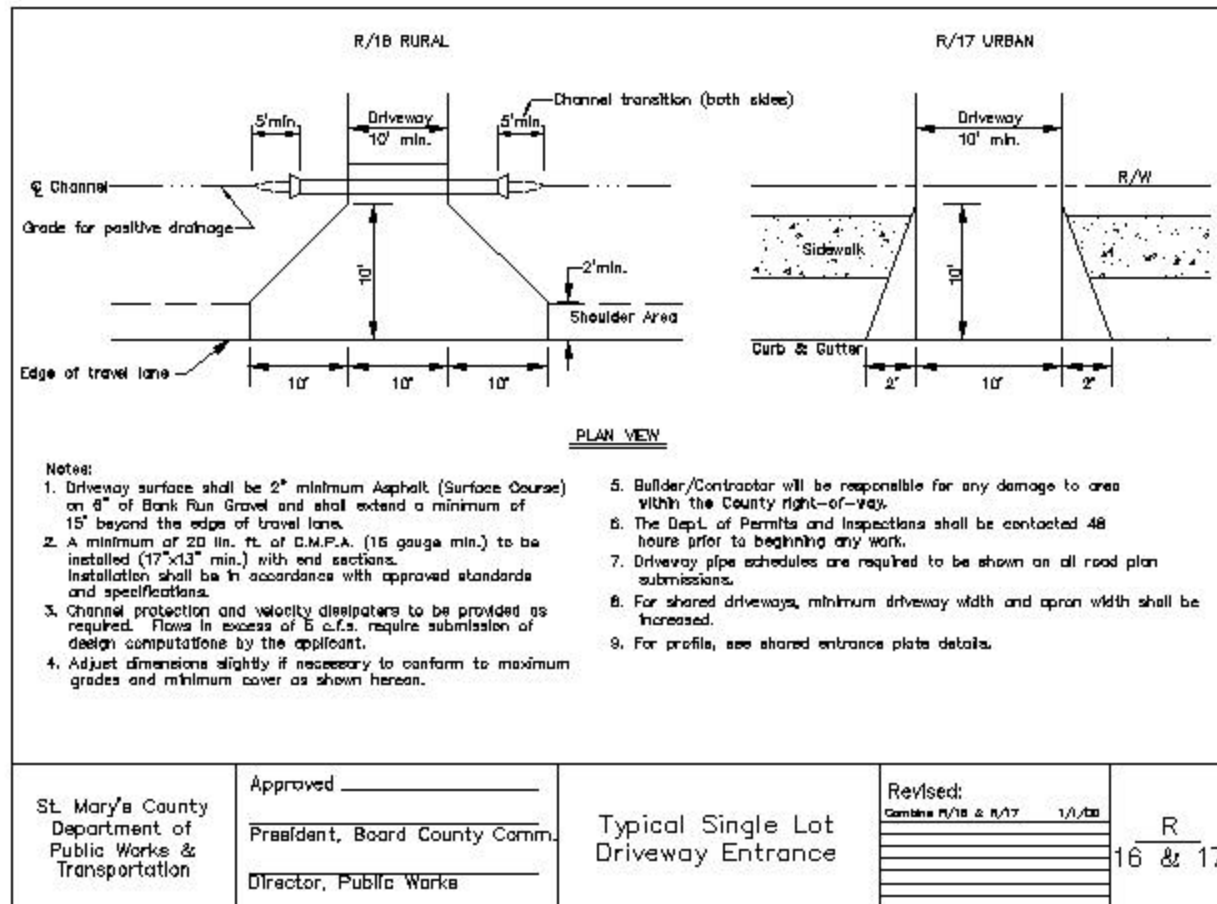
Standard Cul-De-Sacs

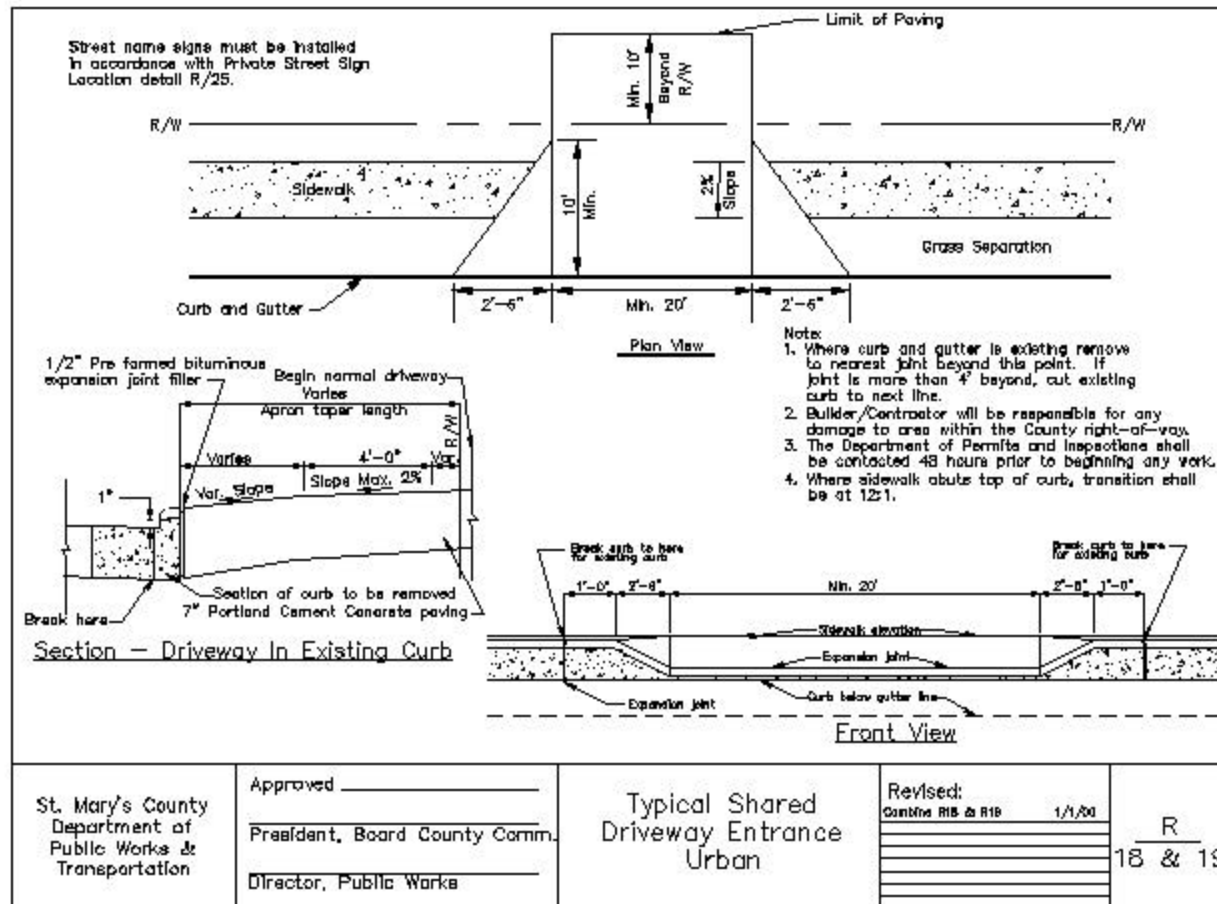
Revised:
New Detail 1.1.00

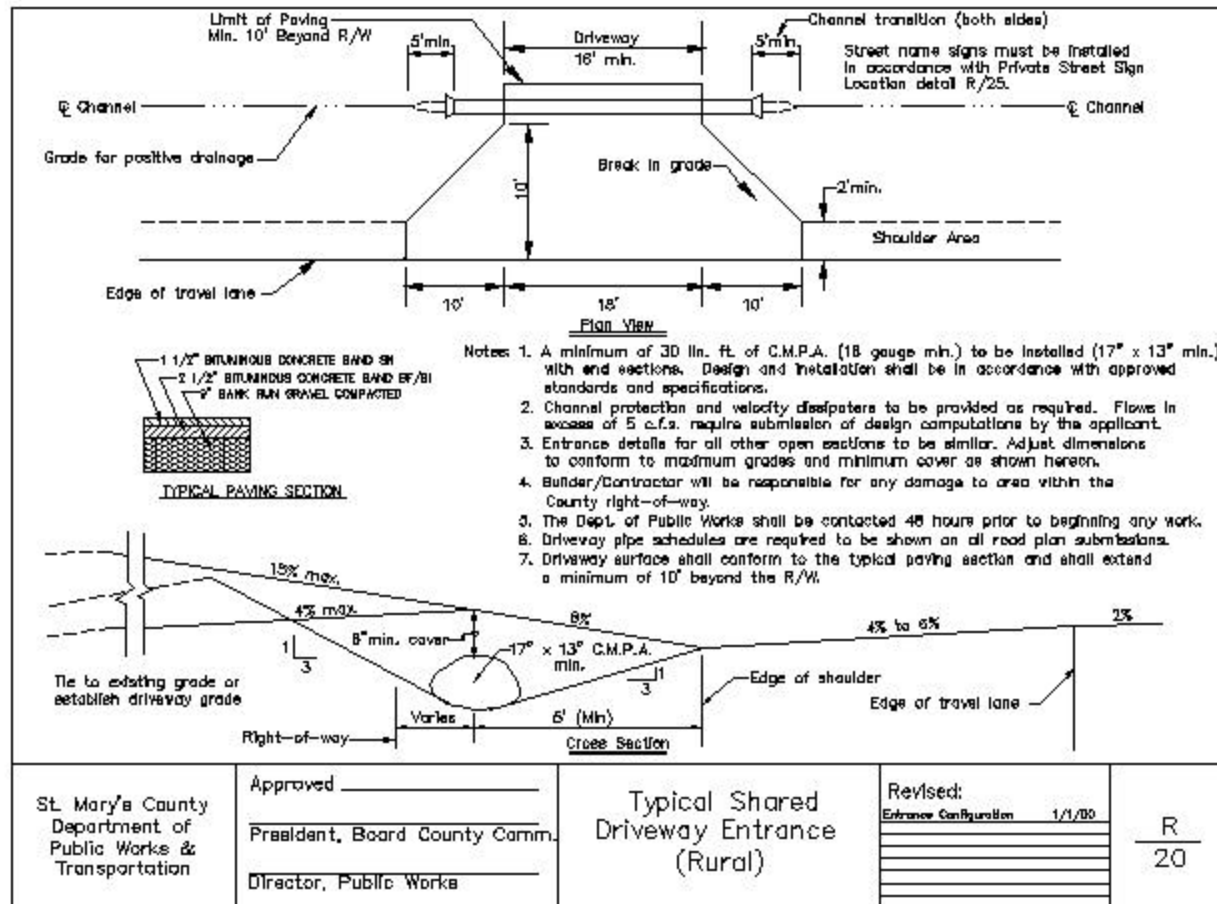
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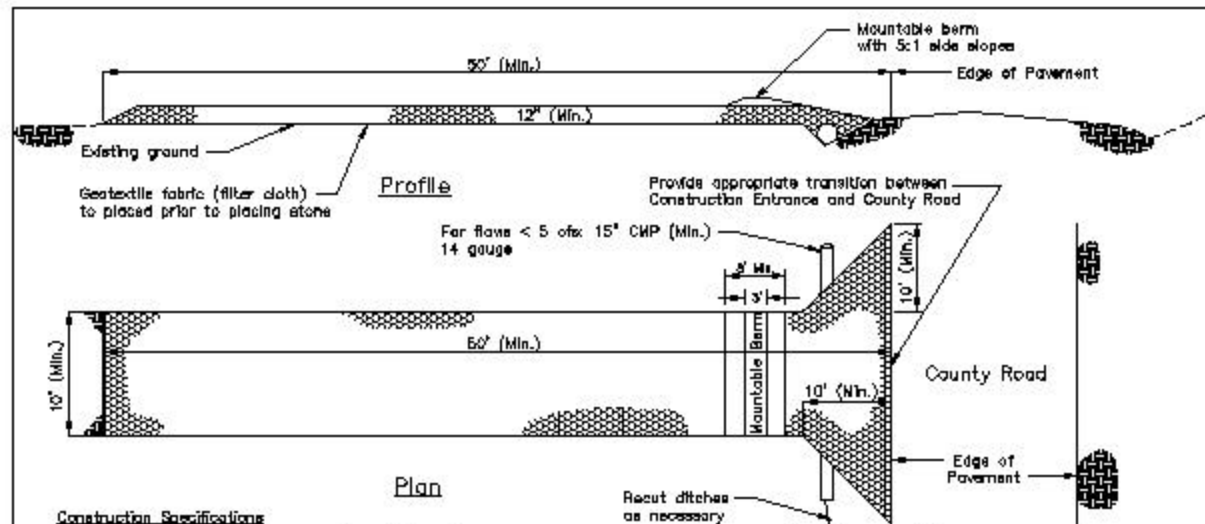


St. Mary's County Department of Public Works & Transportation	Approved _____ President, Board County Comm. Director, Public Works	Standard Temporary Turnarounds	Revised: Rev. Date: 1/1/00	R 15









Construction Specifications

1. Stone size: Use MSHA size No. 2 (2 1/2\" to 1\") or AASHTO designation M43, size No. 2 (2 1/2\" to 1 1/2\"). Use crushed stone.
2. Length: As effective, 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, wheels shall be cleaned to remove sediment prior to entrance to public right-of-way. When 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, boards, or other approved methods.
6. Maintenance: The entrance shall be maintained in a condition which will prevent tracking 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 cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed, or tracked onto public rights-of-way must be removed immediately.
7. A wash rack may be required by Inspector depending on varying field conditions.
8. Location: A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving 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 County Comm.
Director, Public Works

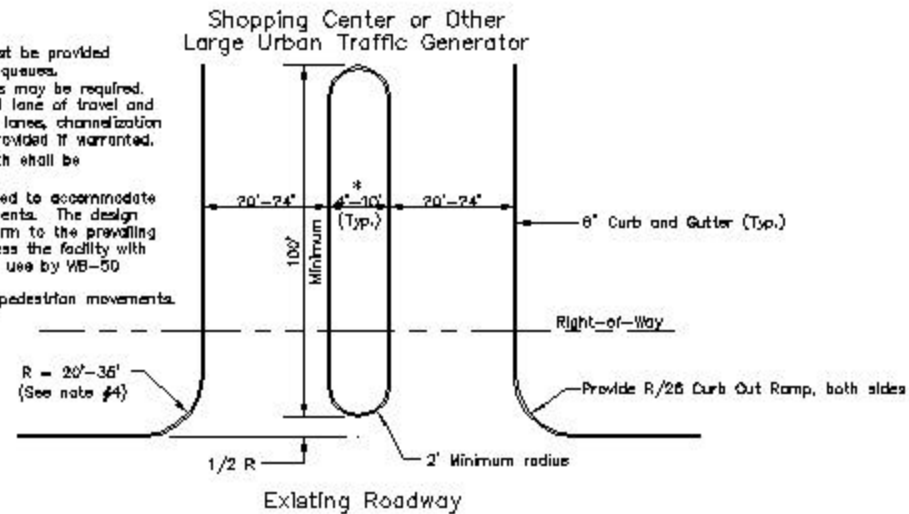
Typical
Construction Entrance

Revised:
Revised entrance size 1/1/00

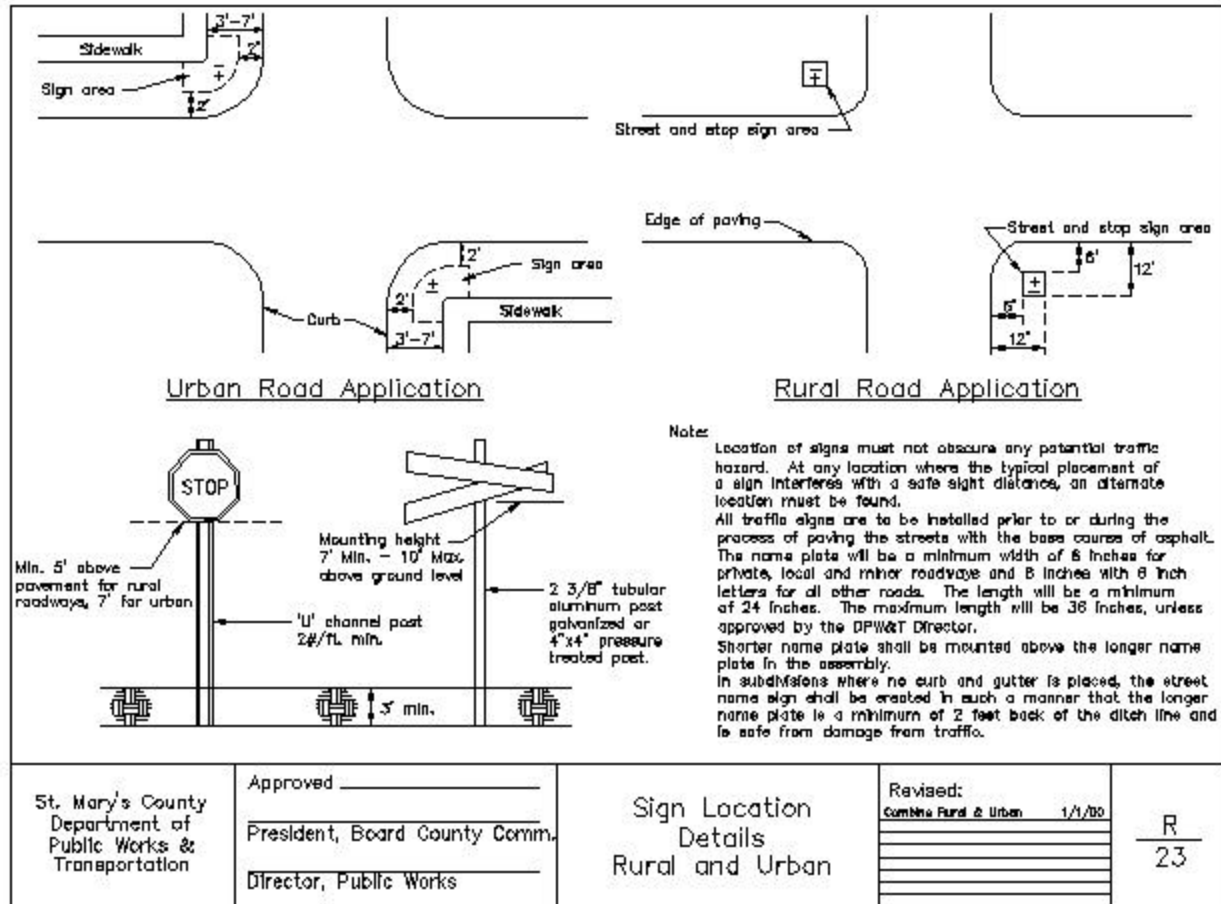
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Notes

1. Minimum storage length must be provided to accommodate peak hour queues.
2. Provide accel./decel lanes as may be required. Min. width shall be 20' for 1 lane of travel and 24' for 2 lanes. Additional lanes, channelization and signalization shall be provided if warranted.
3. Raised medians < 6" in width shall be monolithic concrete.
4. The fillet 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.

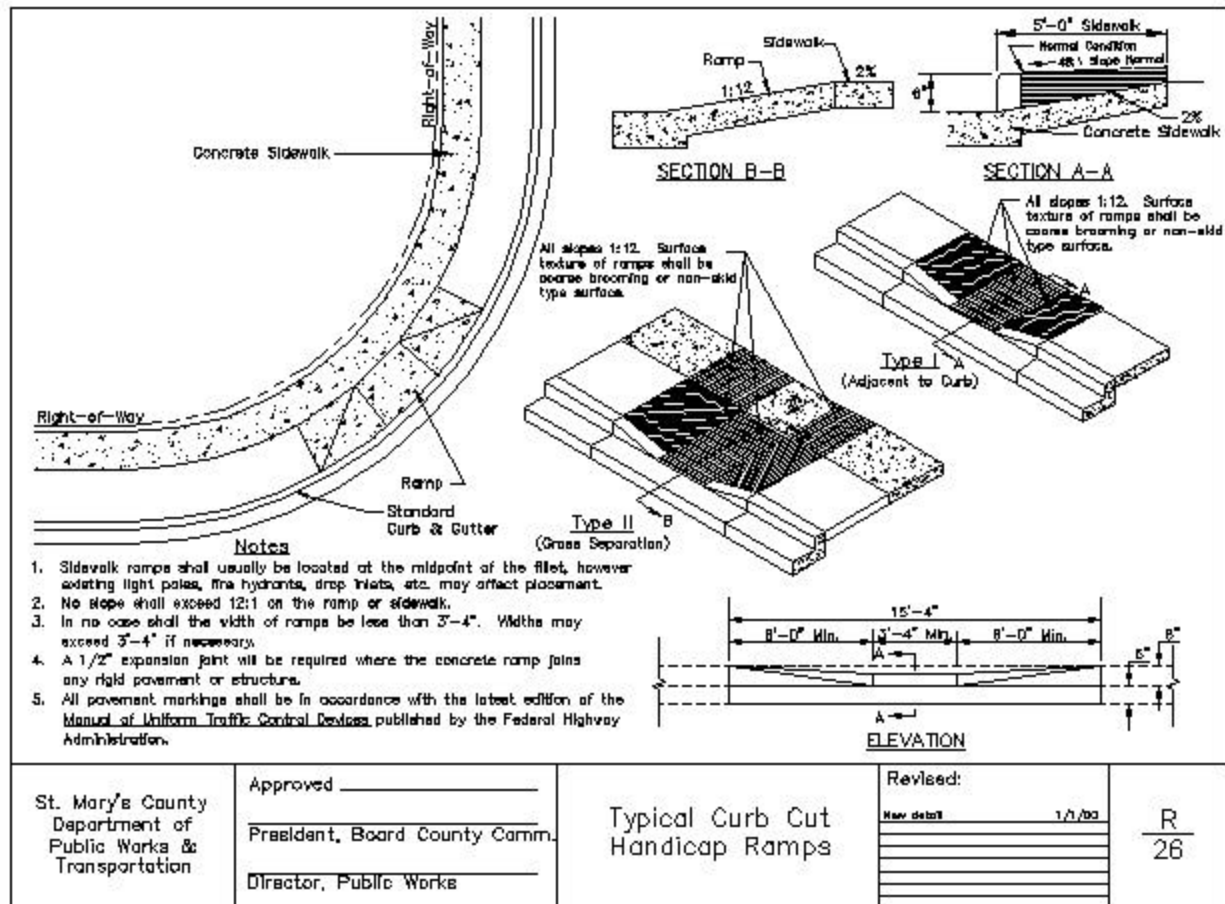


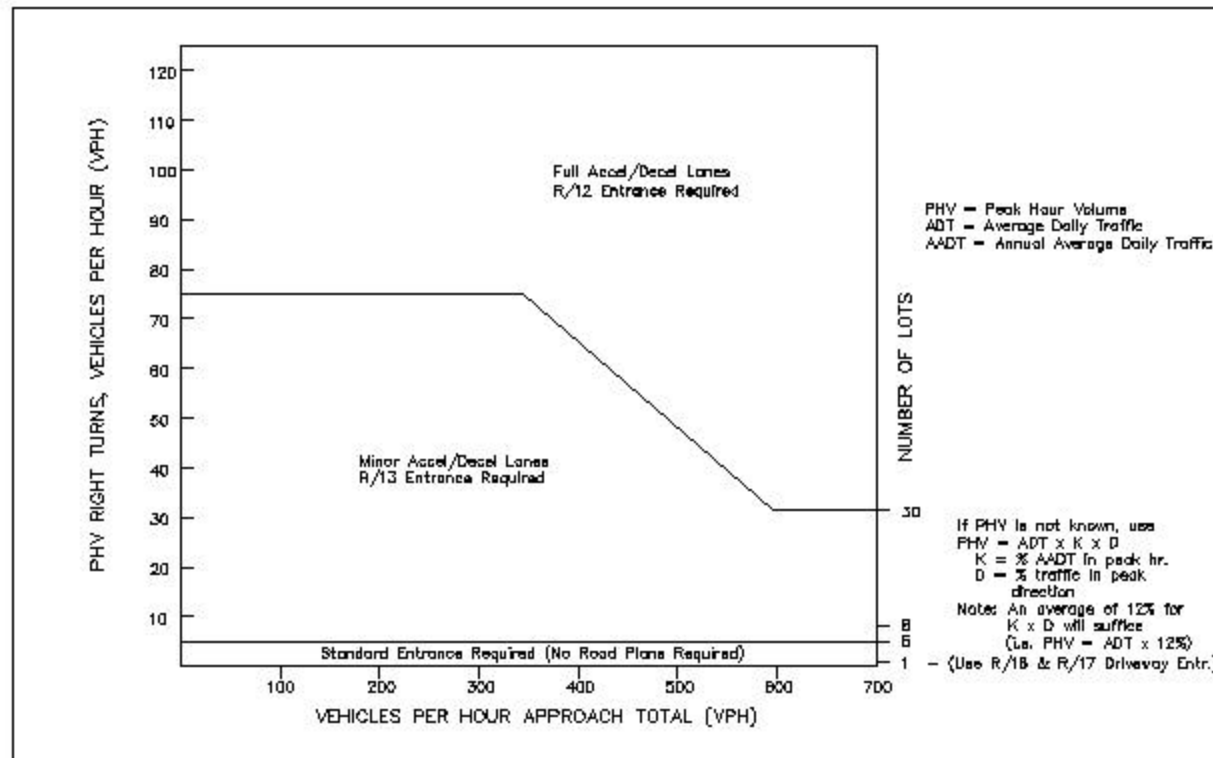
St. Mary's County Department of Public Works & Transportation	Approved _____	Standard Monumental Entrance	Revised:	R 22
	President, Board County Comm.		Next Detail 1/1/00	
	Director, Public Works		_____	



<p>Variable Length: 24", 30", 36"</p> <p>16"</p> <p>1/2"</p> <p>4"</p> <p>1 1/2"</p> <p>2"</p> <p>Blue Background</p> <p>White Lettering</p> <p>Note: Street name signs shall be extruded aluminum with high intensity reflective sheeting, beaded legend and border, 4 inch characters (min.) with letters and background colors as specified. Std. cap and cross brackets shall be used for cross street signage.</p> <p>All private road signs shall have this designation.</p>				
<p>Variable Length: 24", 30", 36"</p> <p>8"</p> <p>1/2"</p> <p>4"</p> <p>Green Background</p> <p>White Lettering</p>				
St. Mary's County Department of Public Works & Transportation	Approved _____ President, Board County Comm. Director, Public Works	Street Name Sign Details	Revised: Rev. date: 1/1/02 _____ _____ _____ _____	R 24

<p style="text-align: center;">Variable Length: 24", 30", 36"</p> <p style="text-align: center;">Blue Background White Lettering</p> <p style="text-align: center;"> <small>Note: Street name signs shall be extruded aluminum with high intensity reflective sheeting, beaded legend and border, 4 inch characters (min.) with letters and background colors as specified. Std. cap and cross brackets shall be used for cross street signage.</small> </p>															
<p style="text-align: center;">County or State Road</p> <p style="text-align: center;">Edge of paving</p> <p style="text-align: center;">Street sign location</p>		<p style="text-align: center;">7' above surface</p> <p style="text-align: center;">Galvanized or aluminum tubular post</p> <p style="text-align: center;">3' min. depth</p> <p style="text-align: center;"> <small>Note: 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. Street name sign to be extruded aluminum blades. The Department of Public Works should be contacted for supply sources. Installation and maintenance of private road signs is the responsibility of the property owners served by the private road. See Typical Shared Driveway Entrance detail.</small> </p>													
St. Mary's County Department of Public Works & Transportation	Approved _____ President, Board County Comm. Director, Public Works	Sign Location Private Roads	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Revised:</td> <td style="text-align: center;">1/1/00</td> </tr> <tr> <td style="text-align: center;">Rev text</td> <td></td> </tr> <tr> <td style="text-align: center;"> </td> <td></td> </tr> <tr> <td style="text-align: center;"> </td> <td></td> </tr> <tr> <td style="text-align: center;"> </td> <td></td> </tr> <tr> <td style="text-align: center;"> </td> <td></td> </tr> </table> <div style="text-align: center; border: 1px solid black; padding: 5px; margin-top: 10px;"> R 25 </div>	Revised:	1/1/00	Rev text									
Revised:	1/1/00														
Rev text															





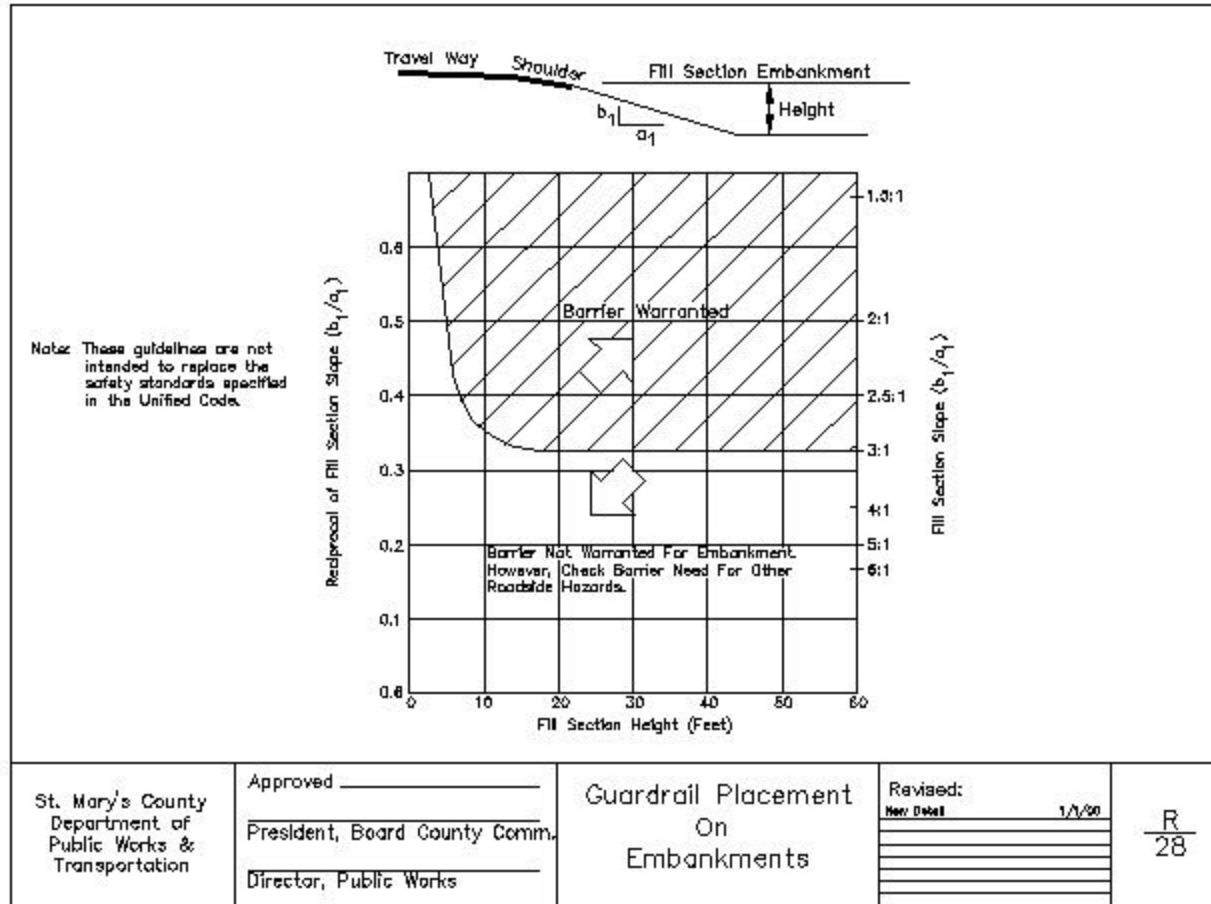
St. Mary's County
Department of
Public Works &
Transportation

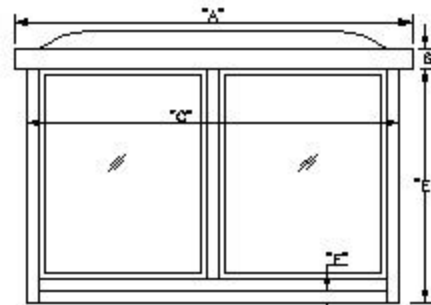
Approved _____
 President, Board County Comm.
 Director, Public Works

Guidelines For Determining Entrance Requirements on Two-Lane Roadways

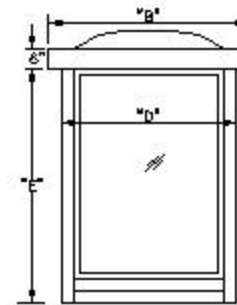
Revised:
 New date: 11.6.00

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27





Front Elevation - Shelter

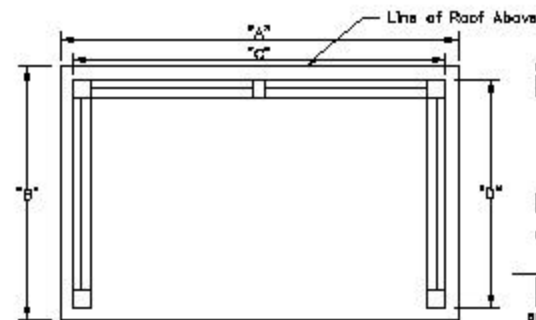


Side Elevation - Shelter

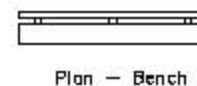
Dimensions	
A	8'-1 1/4"
B	4'-4 1/4"
C	7'-8 1/2"
D	4'-0 1/2"
E	7'-0"
F	8" ±

Notes:

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



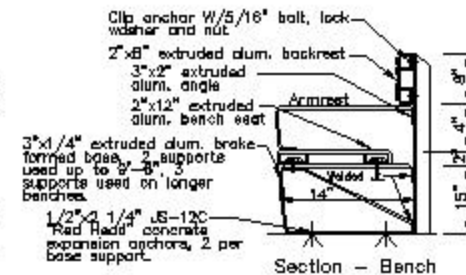
Plan - Shelter



Plan - Bench



Elevation - Bench



Section - Bench

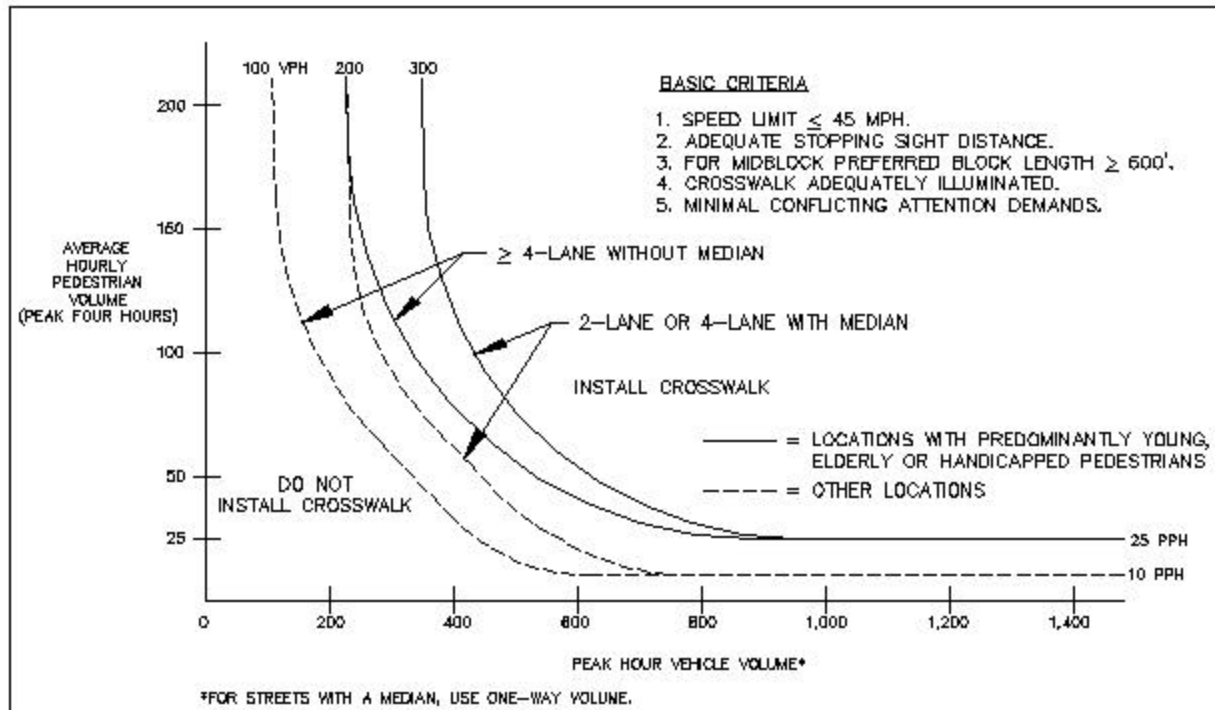
St. Mary's County
Department of
Public Works &
Transportation

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

Standard
Bus Shelter
And Bench

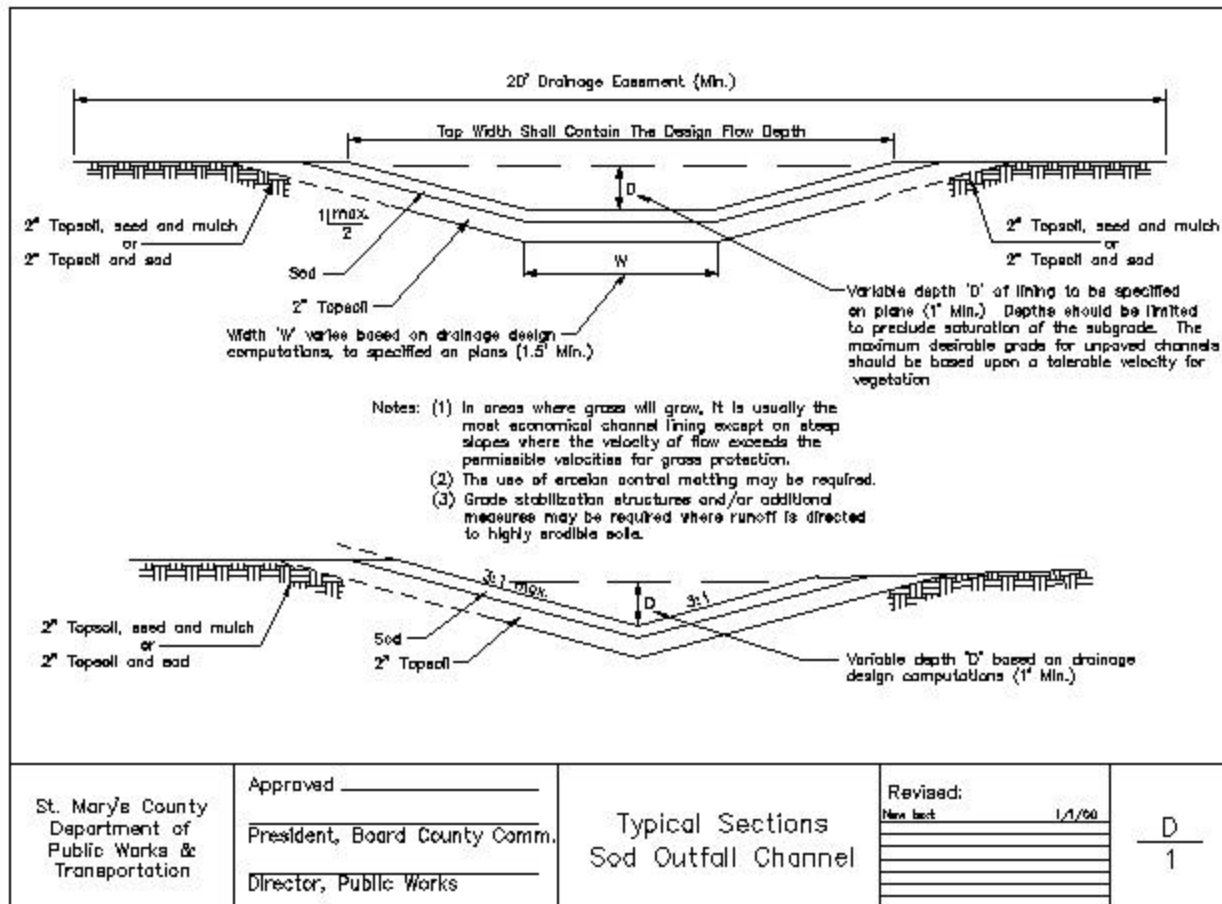
Revised:
Rev Date 1/1/90

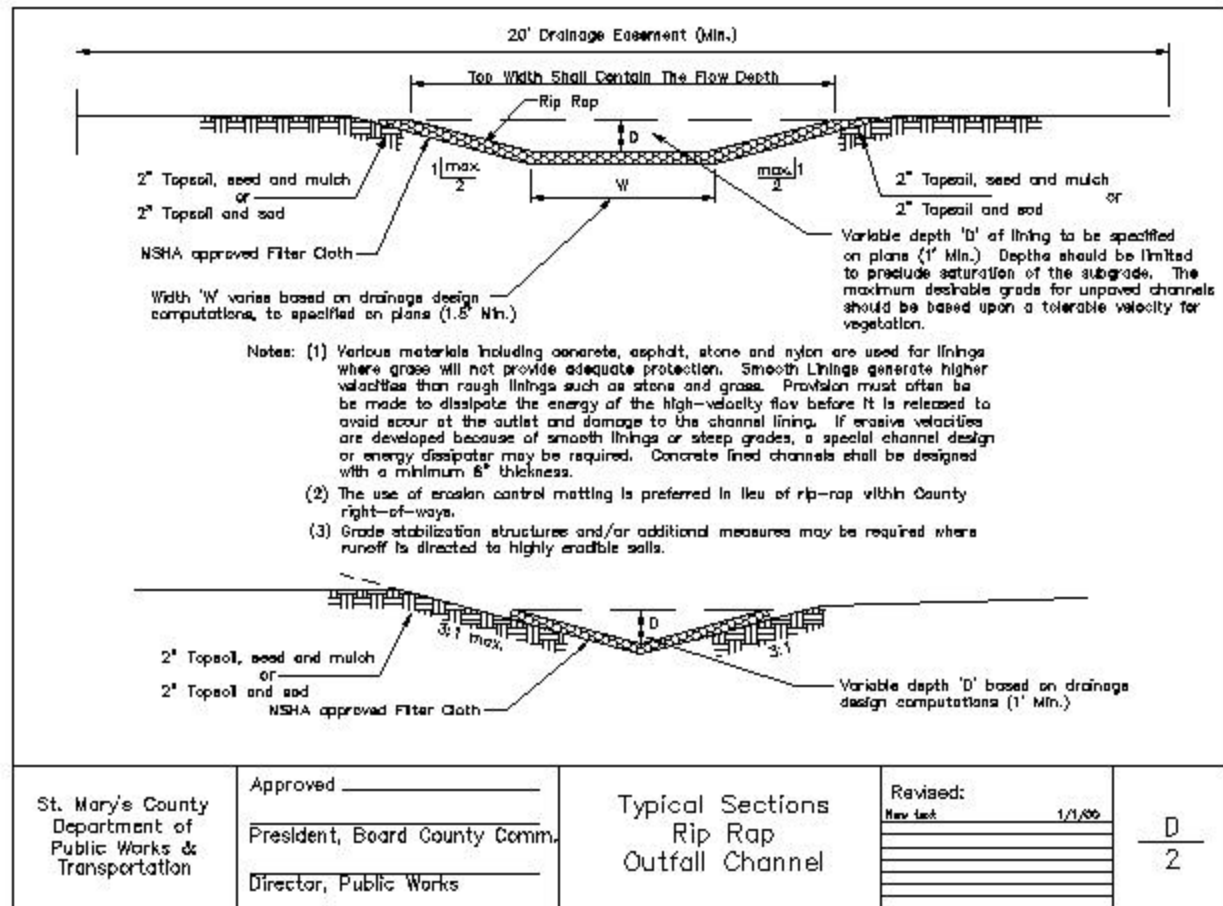
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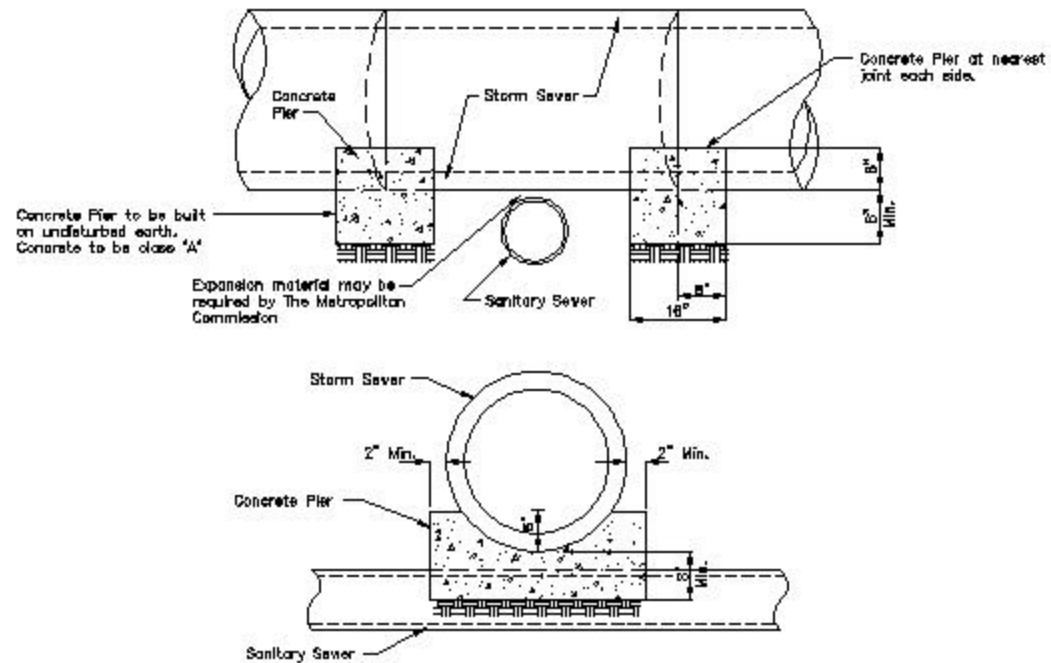


SOURCE: FIGURE 23. FHWA PUBLICATION "PLANNING, DESIGN AND MAINTENANCE OF PEDESTRIAN FACILITIES".

St. Mary's County Department of Public Works & Transportation	Approved _____	Guidelines For Crosswalk Installation	Revised: _____	R 30
	President, Board County Comm.		New Draft 1/1/02	
	Director, Public Works		_____	







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

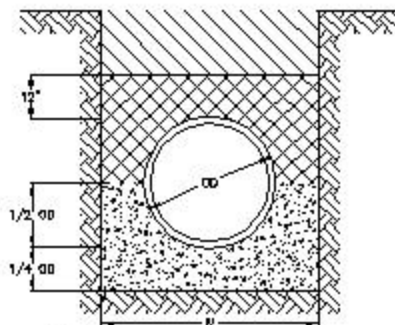
Approved _____
President, Board County Comm.
Director, Public Works

Concrete Pier
For
Storm Drain Pipe

Revised:

New test 1/1/08

0
3



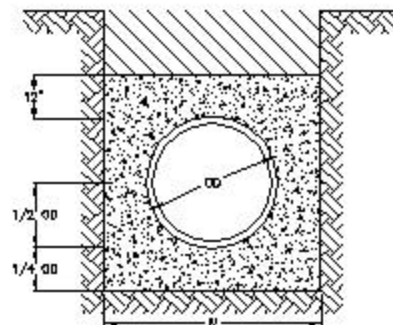
Compacted to not less than 95% of the maximum density.

Select backfill — Hand placed to 95% compaction in accordance with MDOT specs.

Crushed stone MDOT size 57 in accordance with MDOT specs.

Pipe Bedding

1. Permission must be granted by a DPW inspector prior to backfilling areas to be tamped with approved material(s). Soils having maximum dry density of less than 100 lb/cu ft shall be considered unsatisfactory and shall not be used.
2. Material(s) shall be placed in horizontal layers not to 6 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 back-filled 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 approved by the Director of Public Works.
4. The minimum width (W) of the trench shall be 200 or OD+3 whichever is less, unless otherwise approved by the Director of Public Works.



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

Crushed stone MDOT size 57 in accordance with MDOT specs.

Pipe Bedding Alternative

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

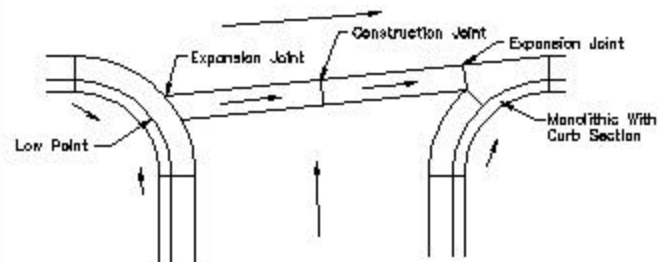
Approved _____
President, Board County Comm.
Director, Public Works

Storm Sewer
Bedding Detail

Revised:

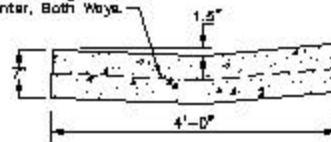
Rural Road Section 1/1/00

0
4



Not To Scale

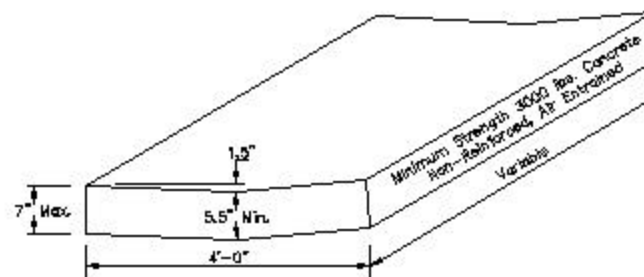
6"x6" No. 8 Wire Mesh Or
1/2" Reinforcing Bars, 12"
On Center, Both Ways.



Not To Scale

Notes: (1) Width And Depth of Concrete Valley
Gutter May Vary. Thickness of Concrete
Shall Be No Less Than 5.5 Inches At The
Flow Line And No More Than 7 Inches
At Edge.

(2) For use where ponding is occurring on the
roadway or where intersection slopes are
less than 0.5%.



Not To Scale

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

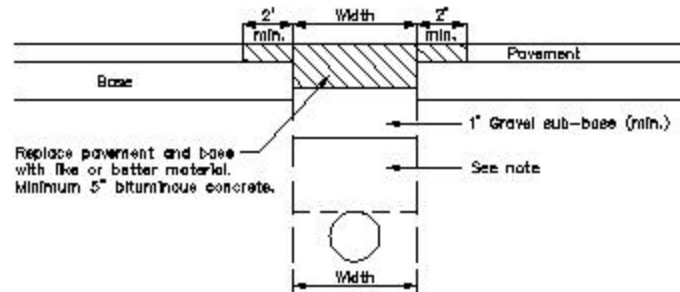
Approved _____
President, Board County Comm.
Director, Public Works

Concrete
Valley Gutter

Revised:

New test 1/1/08

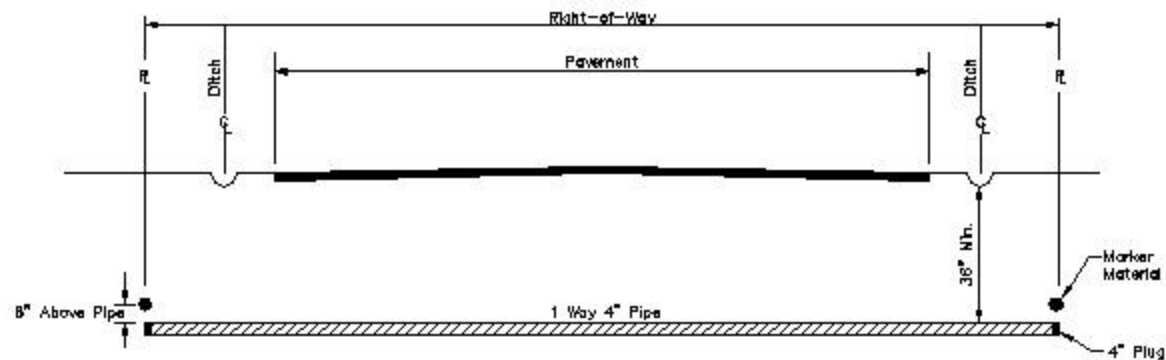
0
5



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, flowable fill in accordance with MSHA specifications may be utilized.

UTILITY	COVER
telephone & cable t.v.	24" min.
electric cable	36" ± 6"
sewer line	48" min.
water line	42" min.
concrete, steel pipes	12" min.
± frost depth	18"

St. Mary's County Department of Public Works & Transportation	Approved _____	Utility Trench Detail	Revised:	U 1
	President, Board County Comm.		New back 1/1/00	
	Director, Public Works		_____	



PROFILE

Notes:

1. SMECO requests, prior to the start of construction of the road, a final record plat (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 14) to expedite the process. Installation shall conform to SMECO's proposed underground electric distribution design and specifications, and is subject to SMECO inspection.
2. If a final record plat cannot be provided by the developer, conduit will be required at all intersections and at 100 foot intervals along each county road. Intervals between conduit crossings may be changed at SMECO discretion and a written request from the Developer.
3. Conduit, plugs and placement will be at the expense of the developer.
4. SMECO will provide the marking material, but must be notified of placement. (No markers will be considered, 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 is to extend the complete right-of-way width (see profile above).
7. If any conduit road crossings are not placed, SMECO will place the conduit and charge the Developer all associated costs, including restoration.

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

Approved _____
President, Board County Comm.

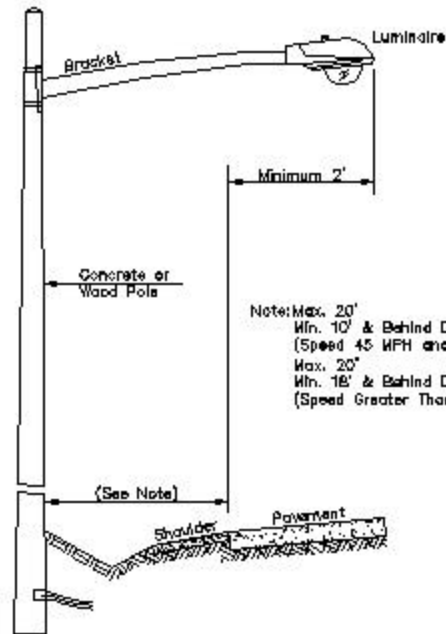
Director, Public Works

Typical Utility
Conduit
Road Crossings

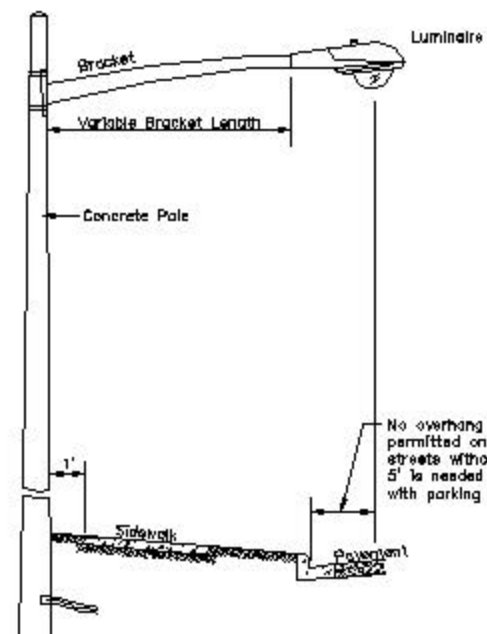
Revised:

Rev. Date: 10.00

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2



RURAL



URBAN

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

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

Typical Street Light
w/Brackets
Rural and Urban

Revised:
Rural Road Section 1/1/00

U
3

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

AREA CLASSIFICATION	ROADWAY CLASSIFICATION	ROADWAY CATEGORY/ TRAFFIC COUNT (VPD)	LUMINAIRE SIZE (FEET)	MAXIMUM SPACING (FEET)	POLE (1,2) PLACEMENT (FEET)	BRACKET LENGTH (FEET)	MOUNTING HEIGHT (FEET)	INSTALLATION PATTERN (SEE TABLE BELOW)
RESIDENTIAL	LOCAL	0-250	5,000	245	10.5	12	28	A
		251-500	5,000	245	10.5	12	28	A
		251-400	5,000	245	8	10	28	A
		401-3000	5,000	250	8	10	28	A
		3001-5500	8,000	200	8.5	10	35	A
		OVER 5500	8,000	225	11.5	12	35	D
	COLLECTOR	401-3000	14,000	220	8	10	35	C
		3001-5500	14,000	225	8.5	10	35	C
		OVER 5500	8,000	180	11.5	12	35	D
	ARTERIAL	401-3000	14,000	220	8	10	35	A
		3001-5000	14,000	225	8.5	10	35	C
		OVER 5500	14,000	180	11.5	12	40 (3)	D
URBAN/ COMMERCIAL/ INDUSTRIAL	LOCAL	0-250	14,000	195	10.5	12	35	A
		251-500	14,000	195	10.5	12	35	A
		251-400	8,000	215	8	10	30	B
		INDUSTRIAL	8,000	220	8	10	30	B
		3001-5500	23,000	285	8.5	10	35	C
		OVER 5500	23,000	285	8.5	10	35	C
	COLLECTOR	401-3000	14,000	180	8	10	35	A
		INDUSTRIAL	23,000	240	8.5	10	35	C
		3001-5500	23,000	240	8.5	10	35	C
		OVER 5500	14,000	185	11.5	12	35	D
	ARTERIAL	401-3000	23,000	215	8	10	35	C
		INDUSTRIAL	42,000	280	8.5	10	45 (3)	C
		3001-5500	42,000	280	8.5	10	45 (3)	C
		OVER 5500	23,000	190	11.5	12	40 (3)	D

- (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

PATTERN TYPE

Same Side of Road
Both Sides of Road and Opposite Each Other
Staggered Along Both Sides of Road
Opposite Each Other Across Median

CODE

A
B
C
D

U-3A

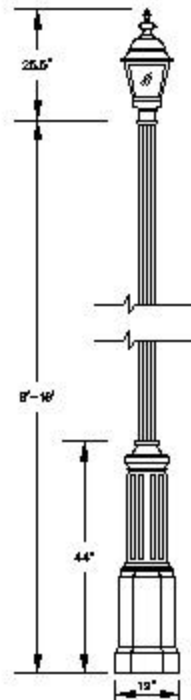
**ST. MARY'S COUNTY
DEPARTMENT OF PUBLIC WORKS
LIGHTING LEVELS FOR EXISTING STREETS**

AREA CLASSIFICATION	ROADWAY SECTION TYPE	WIDTH OF ROADWAY (FT)	LUMINARIES SIZE (LUMENS)	MAXIMUM SPACING (FEET)	MOUNTING HEIGHT (FEET)
Residential	Curb & Gutter (Urban)	30	8,000	170 (A)	25
		36	8,000	170 (B)	25
		44	8,000	175 (B)	25
	Ditch Section (Rural)	24	8,000	170 (A)	25
		36	8,000	170 (B)	25
		48	8,000	225 (B)	25
Industrial/ Commercial	Curb & Gutter (Urban)	30	14,000	205 (A)	30
		36	8,000	220 (B)	25
		48	23,000	300 (B)	30
	Ditch Section (Rural)	24	14,000	185 (A)	30
		36	8,000	220 (B)	25
		48	8,000	225 (B)	25

NOTE:

- (A) All luminaries to be installed on one side of the road unless otherwise noted.
- (B) Luminaries to be installed staggered along both side 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.

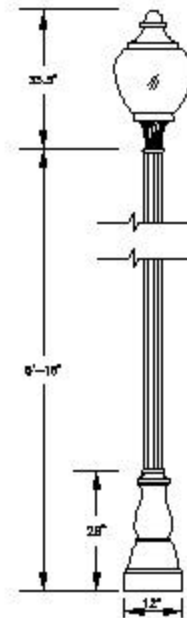
Source: Fairfax County 1988 Public Facilities Manual (as modified).



Residential and Multi-Family

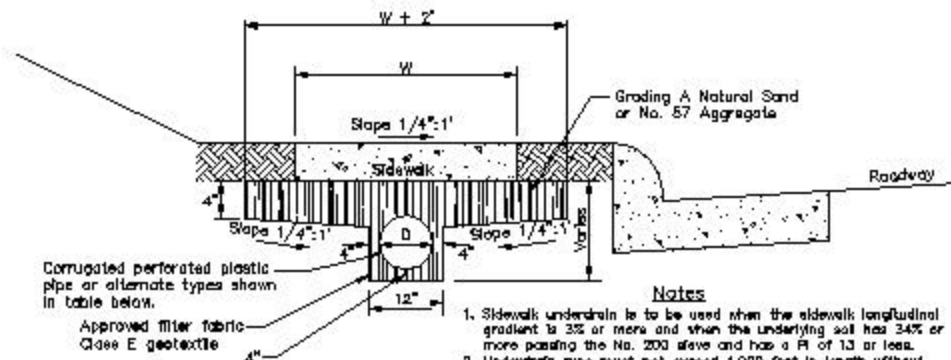
Notes:

- 1) Contact SMECO for lighting specifications, manufacturer, light placement guidelines.
- 2) DPW&T to approve locations proposed within public rights-of-way.
- 3) Illumination to be specified in accordance with St. Mary's County DPW&T lighting levels.



Commercial and Village Centers

St. Mary's County Department of Public Works & Transportation	Approved _____	Typical Street Light Ornamental Rural and Urban	Revised:	U 4
	President, Board County Comm.		New Detail 3/8/01	
	Director, DPW&T			



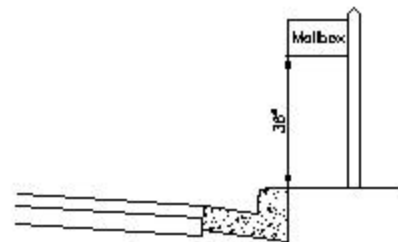
Notes

1. Sidewalk underdrain is to be used when the sidewalk longitudinal gradient is 3% or more and when the underlying soil has 34% or more passing the No. 200 sieve and has a PI of 13 or less.
2. Underdrain runs must not exceed 1,000 feet in length without discharging into the storm drain system or into discharging into the storm drain or into an open drain. The length of run may be increased up to an additional 1,000 feet if 8" diameter pipe is used in the downstream 1,000 foot section of the run.
3. All pipe to be 6" unless otherwise noted on plans. Minimum grade of pipe shall be 0.6% . 45" bands may be used to permit connection to drainage structures. Plastic pipes will not be permitted under street pavement sections. The 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 CBR tests are made for street pavement design, sieve and PI analysis will be included with the CBR tests. If these tests indicate that underdrains are required, additional classification tests will be made of the sidewalk subgrade to determine if sidewalk underdrains are required. These tests will be made at all changes of subgrade material and not more than 500 feet apart. Plan revisions based on these tests will then be prepared by the design consultant and submitted to DPW&T for review and approval.
5. Compaction tests on natural subgrade must be made and approved after the subgrade has been shaped and prior to the placing of sidewalks.
6. Where required, sidewalk underdrains shall be used for all sidewalks which are to be maintained by DPW&T.
7. All materials and construction of this design in a public right-of-way to be maintained by St. Mary's DPW&T shall conform to current DPW&T standards.

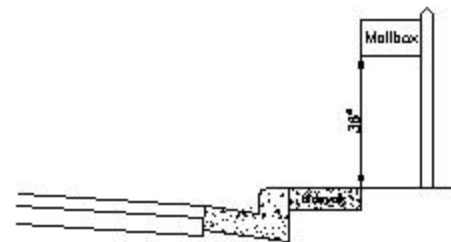
Alternate Underdrain Pipe			
	6" Pipe		8" Pipe
	*B.T. Crushing Strength lbs./ft		*B.T. Crushing Strength lbs./ft
Perforated Helically Corrugated Lock Seam Steel	.052		.084
Perforated Vitrified Clay		1000	1000
Porous Wall Concrete		1100	1500
Perforated Concrete		1600	1300
Perforated Corrugated Steel	.052		.084
Perforated Asbestos Cement		1100	1300
Perforated Corrugated Alum.	.048		.080
Perforated Bituminous Fiber		1400	1700

*Sheet Thickness = inches

St. Mary's County Department of Public Works & Transportation	Approved _____	Sidewalk Underdrain	Revised:	U 6
	President, Board County Comm.		Man Date: 1A/00	
	Director, Public Works			



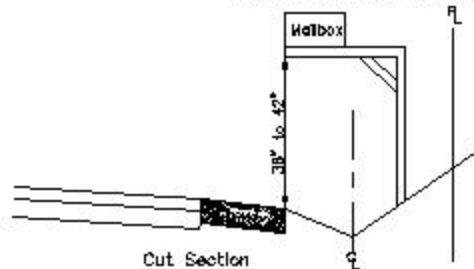
Curb and Gutter Section



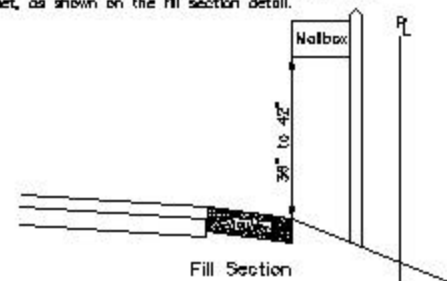
Curb and Gutter Section With Sidewalk

URBAN

- Notes:
1. On ditch section streets, face of mailbox to be in line with back edge of shoulder.
 2. On ditch section streets in cut, support for mailbox to be minimum 2 feet to the outside of the ditch line.
 3. On curb and gutter section streets, face of mailbox to be in line with back edge of curb line.
 4. Mailbox height shall be — Ditch 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 the fill section detail.



Cut Section



Fill Section

RURAL

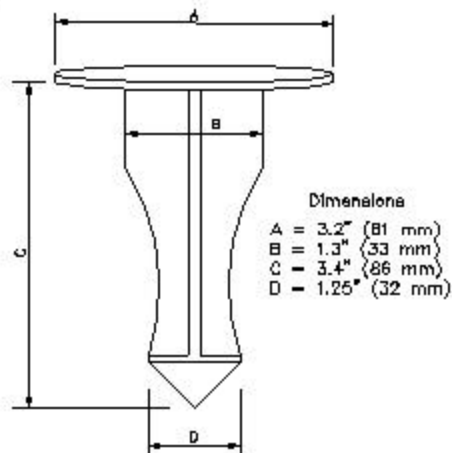
St. Mary's County
Department of
Public Works &
Transportation

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

Mailbox Placement
Details
Rural and Urban

Revised:
New Detail 1/1/00

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7



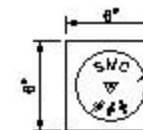
Dimensions

- A = 3.2" (81 mm)
- B = 1.3" (33 mm)
- C = 3.4" (86 mm)
- D = 1.25" (32 mm)

Brass Right-of-Way Marker
N.T.S.

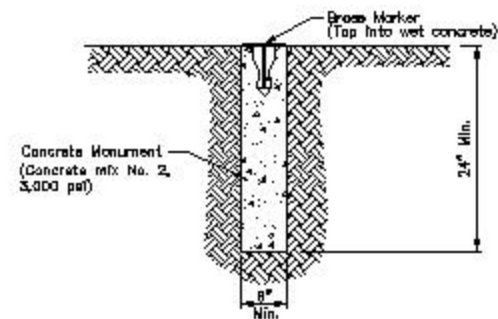
Notes

- 1) A minimum of two (2) monuments shall be placed in each site/subdivision. Location shall be shown on the recorded record plat with the corresponding reach descriptions.
- 2) Monuments shall be located on street right-of-way lines, at street intersections, angle 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 wholly 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.



Notes
Markers to be consecutively numbered and shall be provided by the DPW&T upon request.

Monument W/Brass Marker – Plan
N.T.S.



Monument W/Brass Marker – Elevation
N.T.S.

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

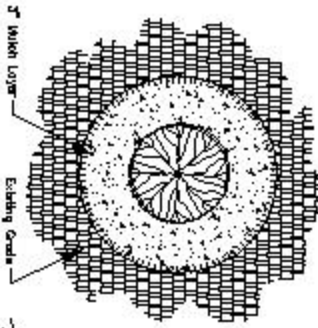
Approved _____
President, Board County Comm.
Director, Public Works

GPS
Monument
Detail

Revised:

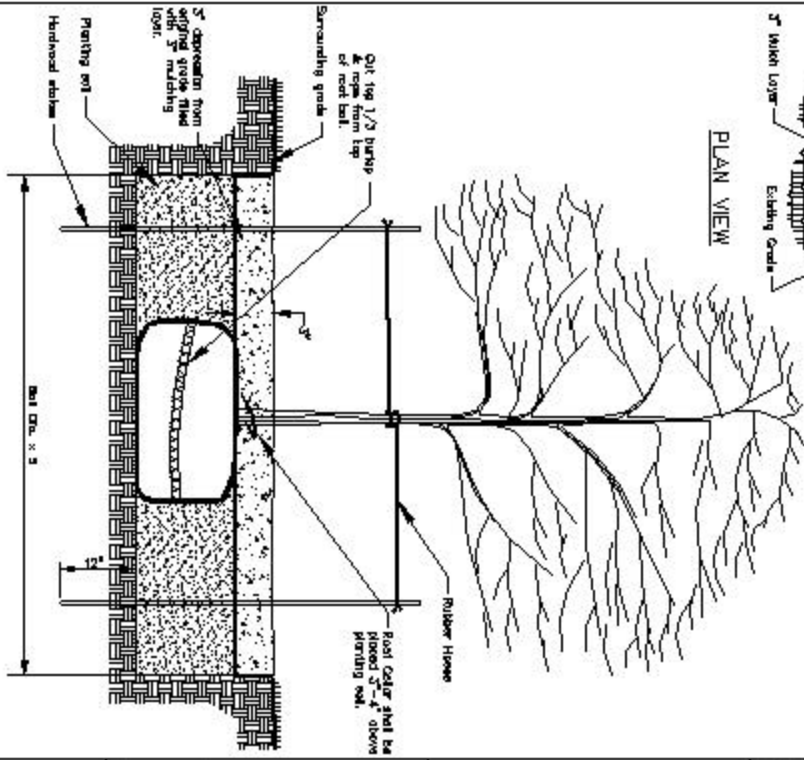
Item Detail 1/1/99

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8



PLAN VIEW

Note:
 Trees shall be located a minimum of:
 5' from Water Meter
 5' from Gas Box
 5' from Inlet or Manhole
 10' from Fire Hydrant
 10' from Driveway Entrance
 15' from Light Post
 25' from Intersection PG



SECTION

PLANTING DEPRESSION:
 A or B with depth by 5' to 7'
 C or D with depth by 1' to 2'

St. Mary's County Department of Public Works & Transportation	Approved _____	Street Tree Planting Detail	Revised:	L 1
	President, Board County Comm.		Rev. Detail 1 A / CG	
	Director, Public Works			

ST. MARY'S COUNTY DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION
RECOMMENDED LIST OF TREES FOR ROADSIDE/STREETSCAPE PLANTING*

BOTANICAL NAME

COMMON NAME

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

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.***