

## SECTION 16. APPENDICES

### APPENDIX A: DESIGN AND CONSTRUCTION STANDARDS FOR STREETS

<b>ITEM</b>	<b>Collector Streets</b>	<b>Minor Streets</b>	<b>Minor Dead-end St. 600 feet or less</b>
1. Minimum width: ROW	60'	60'	60'
2. Minimum width of pavement <sup>(1)</sup>	24'	22'	20'
3. Minimum grade	.5%	.5%	.5%
4. Maximum grade	6%	10%	10%
5. Maximum grade	3% within 50 feet of intersections for collector & minor streets		3% within 25' of intersection of Pownal maintained road
6. Minimum angle of intersections	60 degrees	60 degrees	60 degrees
7. Width of shoulders	4'	4'	4'
8. Minimum centerline radii on curves	200'	200'	200'
9. Minimum tangent length between reverse curves	200'	200'	200'
10. Road base (min.)	22"+geotextile	22"+ geotextile	22"+ geotextile
Sub-base bank gravel	18"	18"	18"
Upper base – crushed g.	4"	4"	4"
11. Bituminous paving, base surface	2.5"	2.5"	2.5" (conforms to standards MDOT)
12. Road crown (minimum)	.25"/1 ft.	.25/1 ft.	.25/1 ft. (gravel .50"/ft)
13. Sidewalks Width			
(minimum where required)	5'	5'	NA
Base course (gravel)	8"	8"	NA
Surface: bituminous hot-top	2"	2"	NA
14. Dead-end streets			
Length, not more than			600 feet
Turn-around			see Appendix D
Property line (minimum)	NA	65'	10' for intersections
Pavement (minimum)	NA	50'	10' for intersections
15. Property line radii at intersection (minimum)	NA	10'	10'
16. Curb radii at intersections			
90 degrees intersections	25'	25'	25'
Less than 90 intersection	30'	30'	30'
17. Road-side Drainage			
Minimum depth of ditch	NA	NA	18" (Appendix E & F)
18. Turn-around			
Required use	NA	NA	all streets (Appendix D)

(1) See definitions for Collector, Minor Dead-End Street in Article 2 Definitions

## **APPENDIX B: CONSTRUCTION NOTES FOR MINOR STREETS AND DEAD END ROADS 600 FEET OR LESS**

### **CONSTRUCTION NOTES**

#### **a. CROSS SLOPE (CROWN)**

- Cross slope on a paved surface shall be  $\frac{1}{4}$ " per foot.
- Cross slope on a gravel surface shall be  $\frac{1}{2}$ " per foot.
  - All sections of the road shall be graded and compacted to achieve the proper cross slope, (sub grade, sub base, base and surface).
  - Shoulder cross slope shall be consistent to or slightly greater than the road.

#### **b. DRAINAGE**

- Culverts shall be a minimum of 15" diameter and sized based on a drainage area study with capacity for a 50 year storm and shall be approved by the Road Commissioner.

#### **c. DITCHES**

- In slope shall be no greater than 3:1
- Back slope shall be no greater than 2:1
- Ditch bottom elevation shall be no higher than the bottom of sub base gravel or base gravel on gravel road.
- Ditches with a slope greater than 5% shall be stone lined (rip rap over filter fabric).

## **APPENDIX C. SPECIFICATIONS**

#### **a. GRAVEL ROADS:**

- Base gravel shall meet MDOT 703.06 Type "D" specifications.
- Woven geotextile shall be installed between sub base and base gravel.
- Surface gravel shall be modified from MDOT 703.06 Type "A" crushed, which increases the percentage passing through a #200 sieve from 0-5.0 to 7.0-12.0.

#### **b. PAVED ROADS:**

- Woven geotextile shall be installed between sub grade and sub base gravel.
- Sub base gravel shall meet MDOT 703.06 Type "D" specifications.
- Base gravel shall meet MDOT 703.06 Type "A" crushed specifications.

#### **c. BITUMINOUS PAVEMENT:**

- Binder course shall meet MDOT superpave specifications for 19.5 mm. or modified "B" mix (to be approved by the Road Commissioner).
- Surface course shall meet MDOT superpave specifications for 12.5 mm. or "C" mix. (To be approved by the Road Commissioner).

#### **d. CULVERT PIPE:**

- If depth of fill is more than 1' and less than 8' culvert pipe shall be double wall polyethylene (ADS N-12 or similar) unless otherwise approved by the Road Comm.
- If depth of fill is over 8' the culvert pipe shall be reinforced concrete unless otherwise approved by the Road Commissioner.

#### **e. EROSION CONTROL AND SEDIMENTATION:**

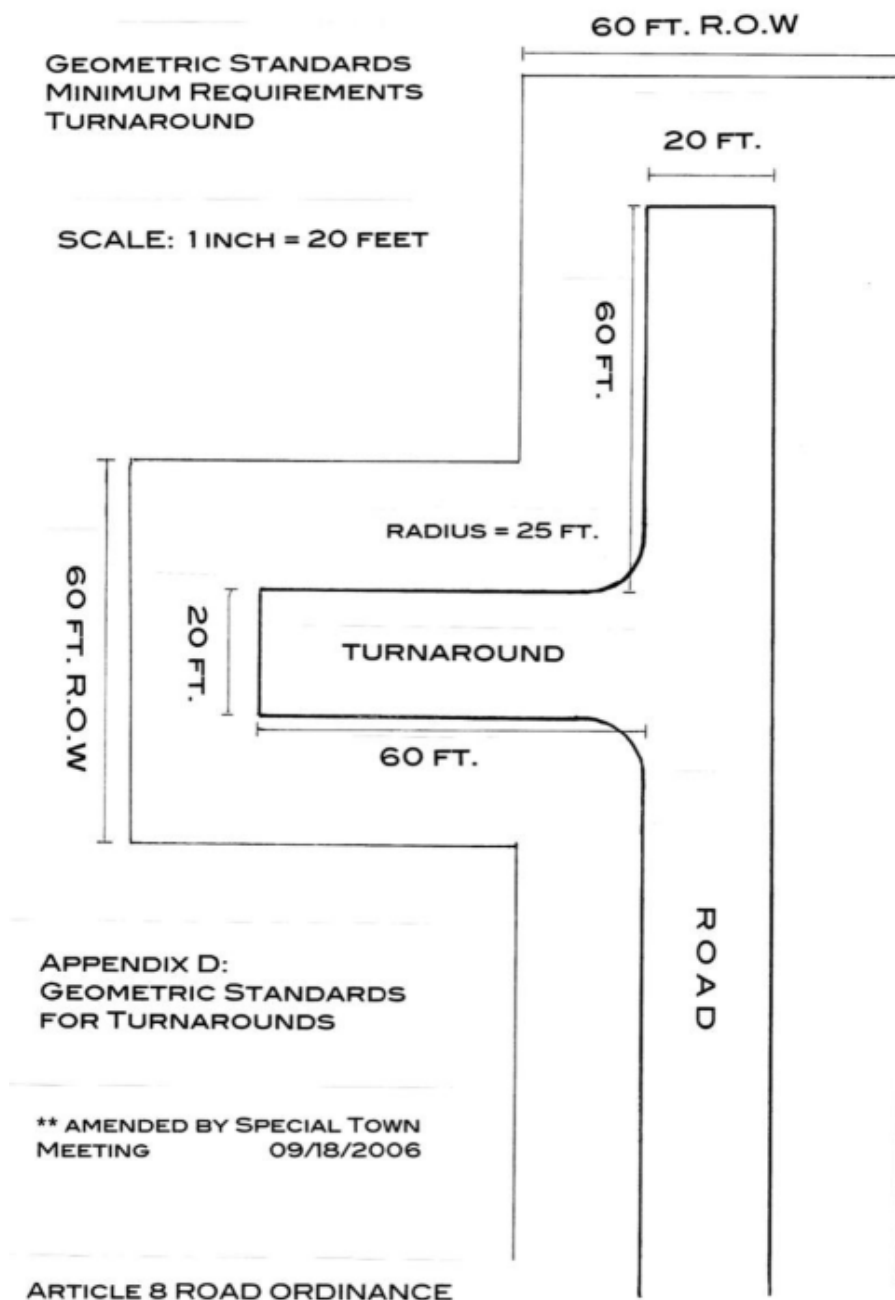
- All erosion control and sedimentation devices shall be constructed using Best Management Practices as defined by MDOT/MDEP.
- Erosion control blanket shall be bio or photodegradable and installed to manufacturers specifications.
- Vegetated areas shall be hydro-seeded using an erosion control, conservation mix designed for fast germination and stabilization.

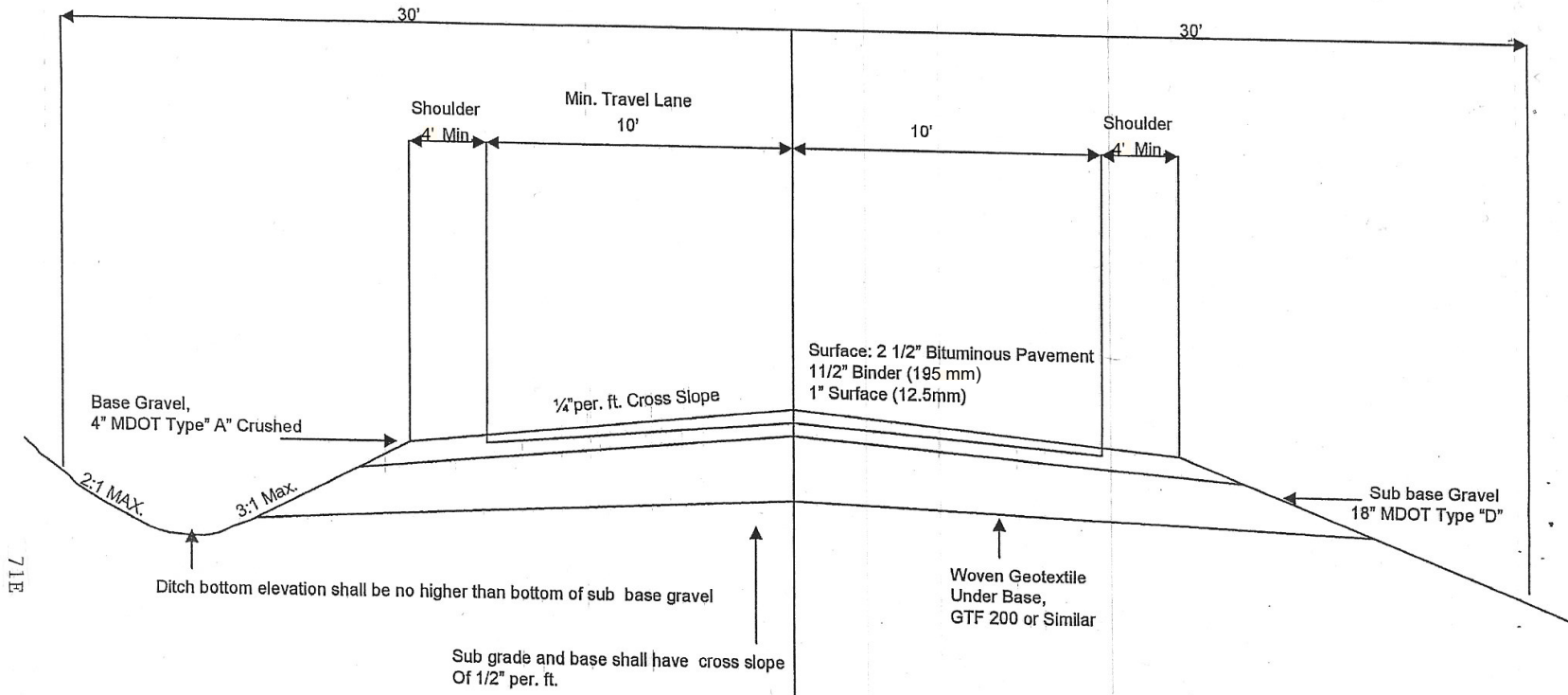
f. SEPARATION GEO-TEXTILE:

- Separation geo textile shall be woven GTF 200 (LINQ Industrial Fabrics, Inc.) or similar to be approved by the Road Commissioner. Non-woven or slit tape geo-textile will not be permitted.
- All specifications that refer to MDOT standards shall follow that of the most recent revisions.

**NOTE: The following Appendices E,F & G are for illustrative purposes. Refer to Appendices A, B & C for specifications.**

**APPENDIX D: GEOMETRIC STANDARDS FOR TURNAROUND at the furthest point from the public road.**

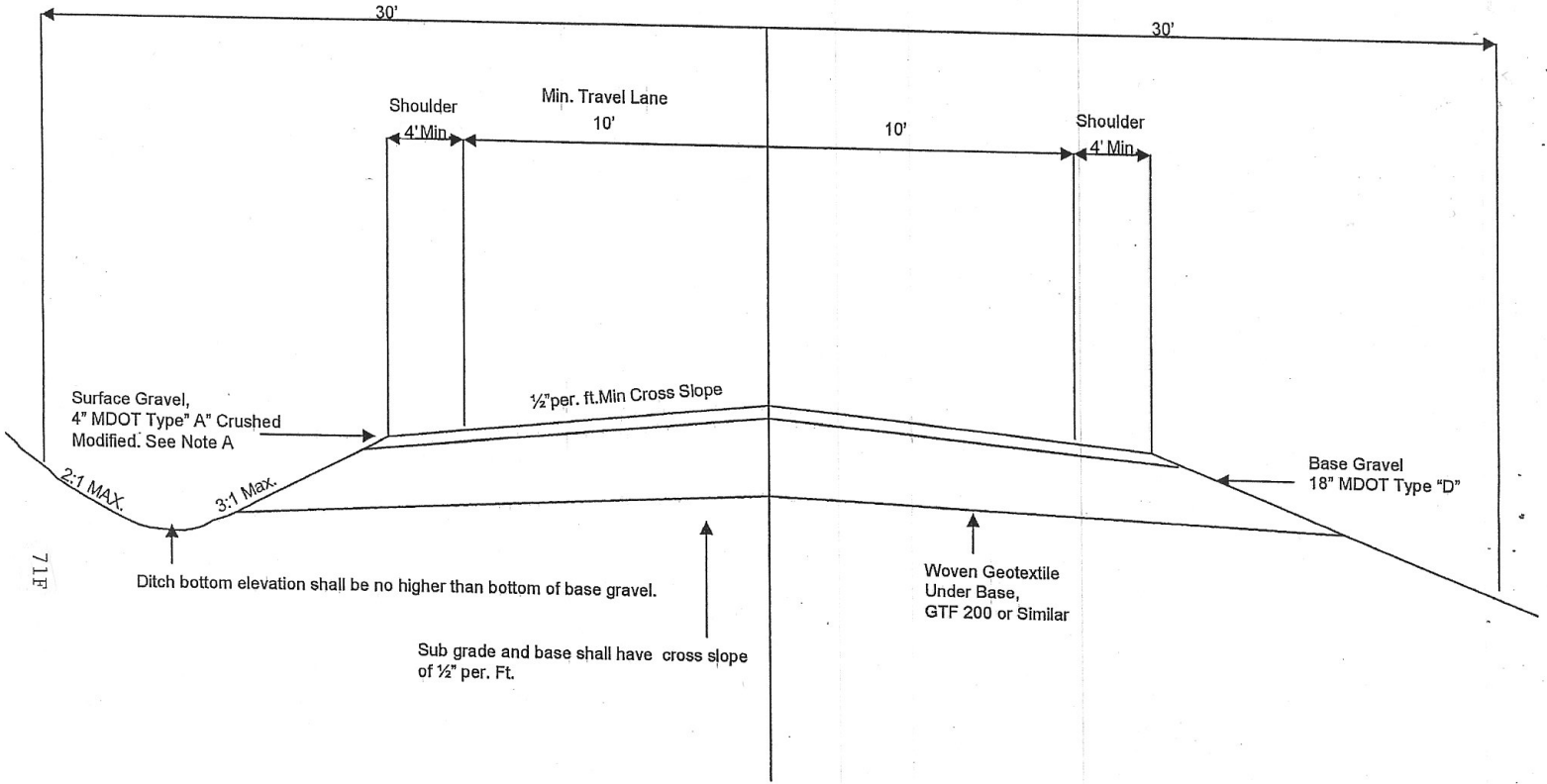




GEOMETRIC STANDARDS – STREETS  
MINIMUM REQUIREMENTS  
PAVED SURFACE

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# APPENDIX F: GEOMETRIC STANDARDS – STREETS: GRAVEL SURFACE

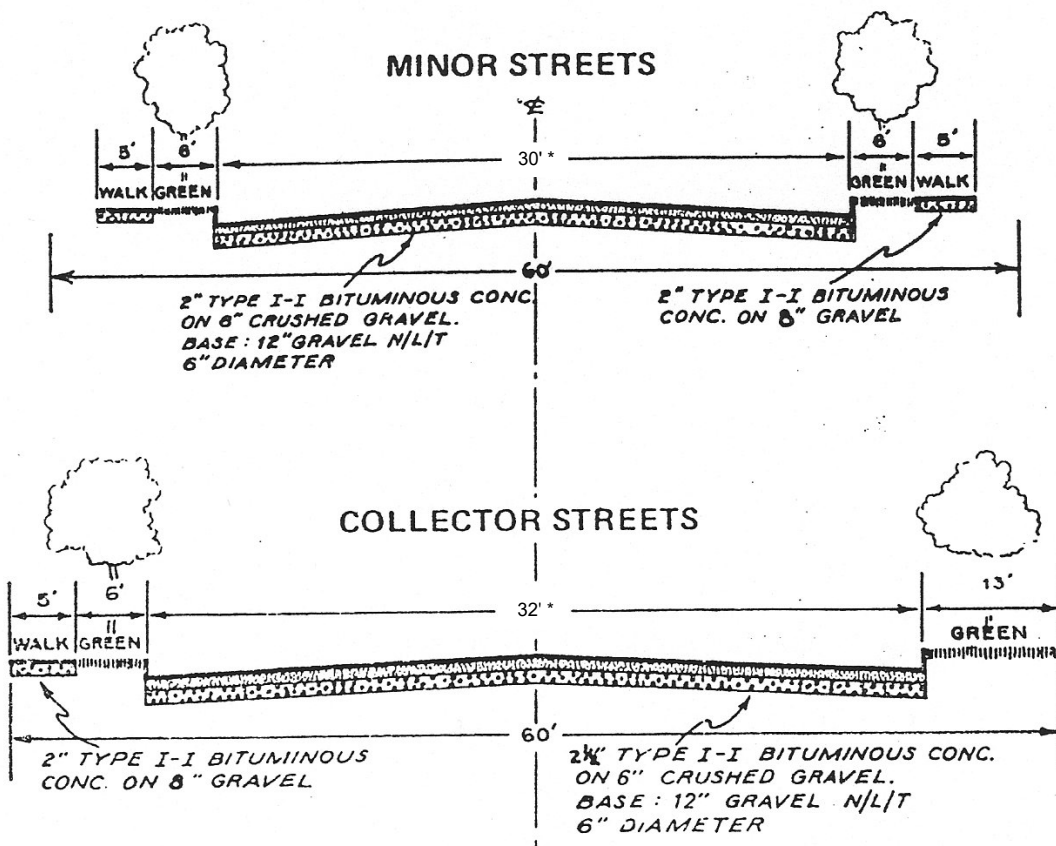


GEOMETRIC STANDARDS – STREETS  
MINIMUM REQUIREMENTS  
GRAVEL SURFACE

APPENDIX G: GEOMETRIC STANDARDS – STREETS MINOR, COLLECTOR

GEOMETRIC STANDARDS – STREETS

MINIMUM REQUIREMENTS



\* = width includes travel lanes and 4' shoulders on each side

## **APPENDIX H: REFERENCE DOCUMENTS ON DESIGN, ENGINEERING AND ENVIRONMENTAL QUALITY MAINTENANCE OF NEW AND SUBSTANTIALLY RECONSTRUCTED ROADS IN POWNAL**

**NOTE:** The reference documents below are only to provide information and guidance in BMPs (Best management practices) and are not ordinance requirements per se for Pownal roads.

### **Design, Engineering, Reconstructing and Maintenance of Roads:**

- REVISED PERFORMANCE & DESIGN STANDARDS FOR ACCESSES AND STREETS IN MODEL SUBDIVISION REGULATIONS, SMRPC for Maine DOT Regional Transportation Advisory Committee – Contract 7/03-6/04 Task 4.
- SUBDIVISION REGULATIONS OF THE TOWN OF HOLLIS, MAINE - Revised Draft: May 26, 2009 – Access Control and Traffic Impacts et al.
- APPENDIX Q – STREET DESIGN STANDARDS AND CROSS SECTION EXAMPLES, (no author cited), (no date)

### **Environmental Standards:**

- TOWN OF POWNAL SHORELAND ZONING ORDINANCE, July 20, 2009. Section 5.G. ROADS and DRIVEWAYS.

### **Web links:**

MDOT ACCESS MANAGEMENT RULES,

<http://www.maine.gov/ndot/traffic/accessmgmt/>

MDEP Erosion BMPs,

<http://www.maine.gov/dep/land/erosion/escbmps/>

MDOT Standard Specifications,

<http://www.maine.gov/mdot/contractors/publications/standardspec/>