TABLE 1.0: GOVERNING AGENCIES AND APPLICABLE CODES/GUIDELINES/REGULATIONS (Most stringent shall apply)	
State of Wisconsin Department of Transportation (WisDOT)	• WisDOT Standard Specifications for Highway and Structure Construction (WisDOT Standard Specifications) • WisDOT Facility Development Manual (FDM) • WisDOT Construction and Materials Manual • WisDOT Approved Product List
Village of Germantown	• Municipal Code • Design, Drafting & Construction Standards & Specifications (Sec. 1-9) • Village Board and Committee actions • DPW Director, Village Engineer, Highway Superintendent discretion
Other	• American Association of State Highway and Transportation Officials (AASHTO) Geometric Design of Highways and Streets (latest ed.) • AASHTO) Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT<400) (latest ed.) • Manual of Uniform Traffic Control Devices (MUTCD) • Wisconsin Asphalt Pavement Association (WAPA) Design Guide • 28 CFR Part 36, "ADA Standards for Accessible Design" • Southeast Wisconsin Regional Planning Commission (SEWRPC) • Manufacturer specifications

TABLE 2.0: DESIGN CRITERIA	
Geotechnical Services Report	• A geotechnical engineer shall be retained to assess and evaluate site conditions and subsurface conditions, and to recommend pavement structures • The report shall be prepared, sealed and signed by a Wisconsin P.E.
HMA Pavements	• Design Life = 20 years • Terminal Serviceability = 2.0 • Reliability = 85% • Initial Serviceability = 4.2 • Standard Deviation = 0.45
Geometrics	• Conform to WisDOT FDM Sec. 11-10
Local Roads	• ADT>400: Conform to AASHTO Geometric Design of Highways and Streets Ch. 5 • ADT<400: Conform to AASHTO Guidelines for Geometric Design of Very Low-Volume Local Roads • Conform to Municipal Code Sec. 18.07 Tables 2, 2a, and 3; Definitions in Municipal Code Sec. 18.07(1)
Collector Roads	• Conform to AASHTO Geometric Design of Highways and Streets Ch. 6 • Conform to Municipal Code Sec. 18.07 Tables 2, 2a, and 3; Definitions in Municipal Code Sec. 18.07(1)
Arterials	• Conform to AASHTO Geometric Design of Highways and Streets Ch. 7 • Conform to Municipal Code Sec. 18.07 Tables 2, 2a, and 3; Definitions in Municipal Code Sec. 18.07(1)

Intersections	• ADT>400:
	  ○ Conform to AASHTO Geometric Design of Highways and Streets Ch. 9
	  ○ Conform to WisDOT FDM Sec. 11-25
	• ADT<400: Conform to AASHTO Guidelines for Geometric Design of Very Low-Volume Local Roads
	• Acceleration, Deceleration and By-pass Lanes are required at all residential subdivision, commercial center and retail center entrances

Longitudinal Slope	• 1% min.; 10% max.

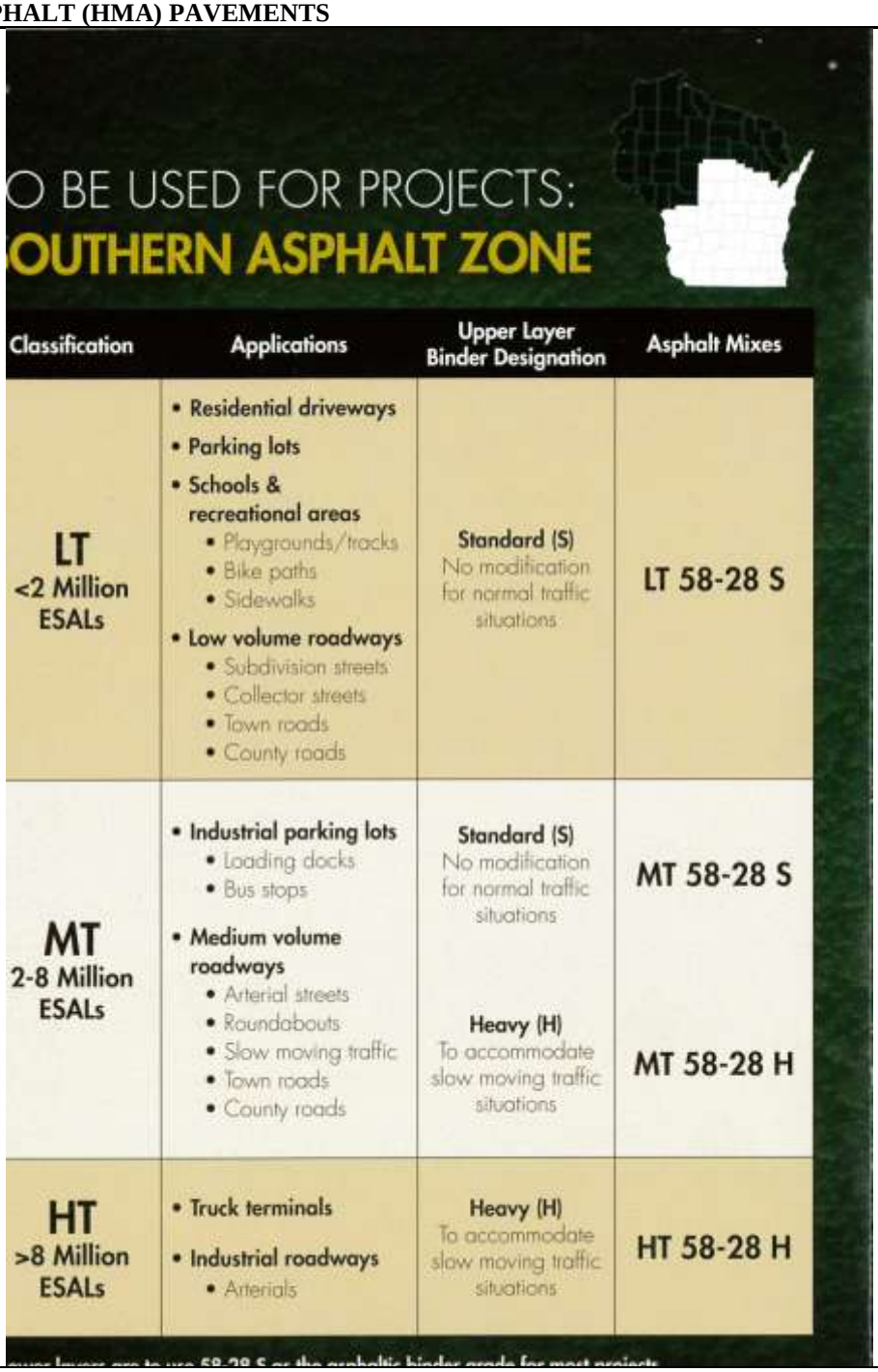
Cross-Slopes	• Driving Lane = 3% • Parking Lane = 3% • Acceleration / Deceleration Lane = 3% • Gravel Shoulder = 4% • Ditches = 4H:1V preferred (3H:1V max.) • Sidewalk = 2%

TABLE 3.0: SUBGRADE	
Earth Subgrade	• Conform to WisDOT Standard Specification Sec. 211.3.2
Surface Elev. Tolerance	• ±0.10’
Compaction	• 95% Modified Proctor
Weather Constraints	• Compaction prohibited during rainfall and on wet surfaces
Geotechnical Fabric	• In event of proof-roll failure, place Type SR to overlay utility crossings; Conform to WisDOT Standard Specifications Sec. 645

TABLE 4.0: BASE COURSE	
Materials	• New Construction or Reconstruction: o Bottom Layer: 3” gradation crushed interlocking limestone aggregate from a quarry source o Middle Layer: 1-¼“ gradation crushed interlocking limestone aggregate from a quarry source o Top Layer: ¾“ gradation crushed interlocking limestone aggregate from a quarry source o Quarry Source: Quarry source shall be listed on the WisDOT Pit and Quarry Listing [latest edition] o Gradations: Gradations shall conform to WisDOT Standard Specifications Sec. 305 • Pulverize & Overlay: Pulverized pavement acceptable when recommended by Geotechnical Services Report • Conform to WisDOT Standard Specifications Sec. 301 and 305
Thicknesses	• Comply with Geotechnical Services Report accepted by Village Engineer
Surface Elev. Tolerance	• ±0.05’
Compaction	• 95% Modified Proctor • Conform to WisDOT Standard Specification Sec. 305.3.2
Weather Constraints	• Compaction prohibited during rainfall and on wet surfaces

TABLE 5.0: HOT MIX ASPHALT (HMA) PAVEMENTS

WAPA Design Guide



O BE USED FOR PROJECTS:
OUTHERN ASPHALT ZONE

Classification	Applications	Upper Layer Binder Designation	Asphalt Mixes

LT <2 Million ESALs	• Residential driveways
	• Parking lots
	• Schools & recreational areas
	  • Playgrounds/tracks
	  • Bike paths
	  • Sidewalks
	• Low volume roadways
	  • Subdivision streets
	  • Collector streets
	  • Town roads
	  • County roads
		Standard (S)
		No modification for normal traffic situations
			LT 58-28 S

MT 2-8 Million ESALs	• Industrial parking lots
	  • Loading docks
	  • Bus stops
	• Medium volume roadways
	  • Arterial streets
	  • Roundabouts
	  • Slow moving traffic
	  • Town roads
	  • County roads
		Standard (S)
		No modification for normal traffic situations
		
		Heavy (H)
		To accommodate slow moving traffic situations
			MT 58-28 S
			
			MT 58-28 H

HT >8 Million ESALs	• Truck terminals • Industrial roadways • Arterials	Heavy (H) To accommodate slow moving traffic situations	HT 58-28 H

Thicknesses

- Comply with Geotechnical Services Report accepted by Village Engineer

Layer	Nominal Size (mm)	Min. Layer Thickness (in)	Max. Lower Layer Thickness (in)	Max. Upper Layer Thickness (in)
Binder	19	2 ¼	4	N/A
Surface	12 ½	1 ¾	N/A	2 ½

HMA Temperature

- HMA temperatures on project site shall range between 250°F and 300°F

<table>
<tr><td>Min. Density</td><td>
<table>
<tr><td>Location</td><td>E-0.3, E-1, E-3</td><td>E-10</td></tr>
<tr><td>Traffic Lanes</td><td>91.5%</td><td>92.0%</td></tr>
</table>
Conform to WisDOT Standard Specifications Sec. 460.3.3.1
</td></tr>
<tr><td>Calendar & Weather Constraints</td><td>
Paving prohibited between Oct. 15 and May 1 unless authorized in writing by Village Engineer; Conform to WisDOT Standard Specifications Sec. 450.3.2.1
Paving prohibited when air temp. 3’ above grade in shade and away from artificial heat sources is < 36°F; Conform to WisDOT Standard Specifications Sec. 450.3.2.1
Paving prohibited during rainfall
Paving prohibited on wet surfaces
</td></tr>
<tr><td>Final Paving Schedule</td><td>Pave surface lift at 80% build-out or 3 years after binder lift paved (whichever is first)</td></tr>
</table>

<table>
<tr><th colspan="2">TABLE 6.0: CONCRETE PAVEMENTS</th></tr>
<tr><td>Traffic & Auxiliary Lanes</td><td>Conform to WisDOT Standard Specifications Sec. 415 and WisDOT FDM 14-10-10</td></tr>
<tr><td>Curing</td><td>Liquid curing compound; Conform to WisDOT Standard Specifications Sec. 415.2.4</td></tr>
<tr><td>Jointing</td><td>

Longitudinal: Centerline, lane edges
Transverse:

<table>
<tr><td>Pavement Thickness (in)</td><td>Dowel Bar Dia. (in)</td><td>Joint Spacing (ft)</td></tr>
<tr><td>5 ½, 6, 6 ½</td><td>None</td><td>12</td></tr>
<tr><td>7, 7 ½</td><td>1</td><td>14</td></tr>
<tr><td>8, 8 ½</td><td>1 ¼</td><td>15</td></tr>
<tr><td>9, 9 ½</td><td>1 ¼</td><td>15</td></tr>
<tr><td>10 and above</td><td>1 ½</td><td>15</td></tr>
</table>
Conform to WisDOT FDM 14-10-10 Sec. 10.6.1, SDD 13C11, and SDD 13C13
</td></tr>
<tr><td>Weather Constraints</td><td>
Paving prohibited when air temp. in shade and away from artificial heat sources is < 35°F; Conform to WisDOT Standard Specifications Sec. 415.3.15.1
Paving prohibited during rainfall
Paving prohibited on wet surfaces
</td></tr>
<tr><td>Curb & Gutter</td><td>
Public Roads: 30” mountable (typ.); 30” rejecting at cul-du-sac islands
Slip-form preferred
Conform to Village Standard Details
Conform to WisDOT Standard Specifications Sec. 601
</td></tr>
<tr><td>Cul-du-Sacs</td><td>
Plowable nose required
Conform to Village Standard Detail
</td></tr>
<tr><td>Sidewalks</td><td>
Width: 5’ min.
Thickness: 5” min.
Cross-slope = 2%
Slip-form preferred
Conform to Village Standard Details
Conform to WisDOT Standard Specifications Sec. 602
</td></tr>
<tr><td>Driveways</td><td>
Residential Width at curb or shoulder = 25’ max.
Commercial or Retail Width at curb or shoulder = 45’ max.
Conform to Village Standard Details
</td></tr>
</table>

TABLE 7.0: ADA ACCESSIBILITY	
Curb Ramps	• Required for all intersections having pedestrian path and sidewalk • Required for all passenger loading zones • Required for all commercial, industrial and retail center driveways having pedestrian path and sidewalk • Truncated domes required at all curb ramps • Conform to 28 CFR Pt. 36 App. A Sec. 4.7 • Conform to WisDOT FDM 11-46-10 and SDD 8D5 (Sheets a to e)
Parking	• Situate as close to accessible building entrances as possible • Slope = 2% max (in all directions) • Van-to-regular accessible space ratio: 1:6 • Stall lengths = 20' min. • Stall widths: o Car = 96" min. o Van = 132" min.; or 96" min. with 96" aisle • Signage and pavement markings required for ea. stall • Conform to 28 CFR Pt. 36 App. A Sec. 4.6

TABLE 8.0: TRAFFIC CONTROL	
Temporary	• Conform to WisDOT Standard Specifications Sec. 643 • Conform to MUTCD Part 6 • Detours: Post signs along entire detour route
Pavement Markings	• Conform to WisDOT Standard Specifications Sec. 646 • Conform to MUTCD Part 3
Signs	• Conform to WisDOT Standard Specifications Sec. 637 • Conform to MUTCD Ch. 2A, 2B, 2C

TABLE 9.0: INSPECTION & TESTING	
Scheduling	• Contact Engineering Dept. (262) 250-4721 two business days before construction to schedule inspection(s)
Proof-rolls	• Use a fully-loaded tri-axle dump truck • Conduct on sub-grade and on base course • Ruts exceeding 1" depth are considered failure • In event of failure, EBS, geotechnical fabric Type SR, or a combination of both are acceptable remedies o When using geotechnical fabric Type SR, conform to WisDOT Standard Specifications Sec. 645

TABLE 10.0: SUBMITTAL REQUIREMENTS	
Construction Drawings & As-Built Drawings	• Plan and Profile on D-sized paper prepared, sealed and signed by Wisconsin P.E. • Drawings shall include pavement structure thickness details; Conform to Geotechnical Services Report • Drawings shall graphically annotate or hatch each pavement structure and its ownership (e.g. private heavy duty HMA, public E-1.0 HMA); Conform to Geotechnical Services Report • Datum: Local NVGD 1929 datum required • Submit both paper and electronic copies to Village Engineer • Preparation and submittal of construction drawings and as-built drawings shall be at the Engineering Consultant's expense.
Driveway Permit	• Contractor to prepare and submit with fee to Village Engineering Dept.

Street Excavation in ROW Permit	• Contractor to prepare and submit with fee to Village Engineering Dept.
Erosion Control Permit	• Contractor to prepare and submit with fee to Village Inspection Services (Building Inspection) Dept.
Building Permit	• Plans, reports and permits shall be reviewed and accepted by the Village Engineer before the Village will issue a building permit
Occupancy Permit	• As-built drawings shall be reviewed and accepted by the Village Engineer before the Village will issue an occupancy permit

TABLE 11.0: LIST OF VILLAGE STANDARD DETAILS	
	• Under Development

TABLE 12.0: OTHER REQUIREMENTS	
	• Contractor shall be responsible for Digger's Hotline locates, site safety, resident access, traffic control, erosion & sediment control, and protection of existing facilities, features and structures at all times • At end of each day, open excavations shall not exceed 25 ft. in length. • At end of each day, contractor shall erect barricades with flashers and snow fencing surrounding excavations. • Sawcut Exist Pavements: Wheel mounting saw required; Sawcut full-depth; Conform to WisDOT Standard Specifications Sec. 690 • Inlet Protection: Conform to Wisconsin DNR Technical Standard #1060 • Dewatering: Conform to Wisconsin DNR Technical Standard #1061