

Ocean City Parking Lot Paving Standards

Definitions:

MSHA: Maryland Department of Transportation, State Highway Administration. “Standard Specifications for Construction and Materials” 2008 as amended.

AASHTO: American Association of State Highway and Transportation Officials Standards, latest edition.

Article III Single/two Family Residential

[Code Reference 74-72 (a)(1)]

Section 1.01 Chip Seal Pavement

- (a) **Sub-grade:** In-situ material or fill material (approved by the Engineering Department) as necessary. Fine graded and compacted to a density not less than 90% of maximum dry density per AASHTO T-180.
- (b) **Base Course:** Not required, however a 4” graded aggregate base per MSHA Section 501 is recommended.
- (c) **Surface:** Chip seal surface treatment per Maryland State Highway Administration Standard Specifications (MSHA) Section 503. Consisting of a single prime coat and two seal coats.
- (d) **Maintenance:** The surface must be kept free of weeds and other vegetation. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately.

Section 1.02 Hot Mix Asphalt

- (a) **Sub-grade:** In-situ material or fill material (approved by the Engineering Department) as necessary. Fine graded and

compacted to a density not less than 90% of maximum dry density per AASHTO T-180

- (b) **Base Course:** Not required, however a 4" graded aggregate base per MSHA Section 501 is recommended.
- (c) **Surface:** Hot Mix Asphalt Pavement per MSHA Section 504. Consisting of a minimum of one and a half inches (1-1/2") of either type SF or SC surface mix.
- (d) **Maintenance:** The surface must be kept free of weeds and other vegetation. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately.

Section 1.02.01 Porous Hot Mix Asphalt

- a) **Sub-grade:** In-situ material or fill material (approved by the Engineering Department) Sub-grade soil must have a minimum infiltration rate of one half inch (1/2") per hour as determined by a standard perc test with a plasticity index of zero. Fine graded and moderately compacted such that the permeability of the soil is not negatively impacted but soil is able to support the expected vehicular load surcharge.
- b) **Base Course Base Course:** Below the porous asphalt itself are located the porous media infiltration beds from top to bottom: a 4" (minimum) thick layer of choker course of 57 stone is preferable to alleviate compaction issues with the porous asphalt); an 8" to 12" minimum thickness layer of filter course of poorly graded sand (a.k.a. bank run gravel or modified 304.1) and a reservoir course of crushed stone, thickness dependant on required storage with 1/5" to 2" stone with a 30% void. See State of Maryland Stormwater Design Manual p.5.46-51 and the University of New Hampshire Stormwater Center Design standards for porous asphalt pavement. The bottom of the base should be level to enhance distribution.
- c) **Surface:** Porous Asphalt Mix Design Criteria. Pavement surfaces shall have a permeability of eight inches per hour or grater with a slope < 5%. Alternative mode required for runoff to enter subbase storage such as a stone edge drain or a catch basin. The following is a sample porous Asphalt Mix Design Criteria.

Porous Asphalt Mix Design Criteria.	
Sieve Size (inch/mm)	Percent Passing (%)
0.75/19	100%
0.50/12.5	85-100%
0.375/9.5	55-75%
No.4/4.75	10-25%
No.8/2.36	5-10%
No.200/0.075 (#200)	2-4%
Binder Content (AASHTO T164)	6 - 6.5%
Fiber Content by Total Mixture Mass 0.3% cellulose or	0.3% cellulose or 0.4% mineral
Rubber Solids (SBR) Content by Weight of the Bitumen	1.5-3% or TBD
Air Void Content (ASTM D6752/AASHTO T275)	16.0-22.0%
Draindown (ASTM D6390)*	< 0.3 %
Retained Tensile Strength (AASHTO 283)**	> 80 %
Cantabro abrasion test on unaged samples (ASTM D7064-04)	< 20%
Cantabro abrasion test on 7 day aged samples	< 30%
*Cellulose or mineral fibers may be used to reduce draindown.	
**If the TSR (retained tensile strength) values fall below 80% when tested per NAPA IS 131 (with a single freeze thaw cycle rather than 5), then in Step 4, the contractor shall employ an antistrip additive, such as hydrated lime (ASTM C977) or a fatty amine, to raise the TSR value above 80%.	

- d) Maintenance:** The surface must be kept free of weeds and other vegetation. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately. Pervious Asphalt must not be sealed or top coated to render surface impervious. Pavement surfaces should be swept twice annually and vacuumed to reduce sediment accumulation and ensure continued surface porosity.

Section 1.03 Portland Cement Concrete

- (a) Sub-grade:** In-situ material or fill material (approved by the Engineering Department) as necessary. Fine graded and compacted to a density not less than 90% of maximum dry density per AASHTO T-180
- (b) Base Course:** Not required, however a 4" graded aggregate base per MSHA Section 501 is recommended.
- (c) Surface:** Portland cement concrete pavement per MSHA Section 520. Mix Number 2, 3 or equivalent minimum three (3") inches thick. Colored and/or imprinted concrete is acceptable.
- (d) Maintenance:** The surface must be kept free of weeds and other vegetation. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately.

Section 1.03.1 Pervious Portland Cement Concrete

- a) Sub-grade:** In-situ material or fill material (approved by the Engineering Department) as necessary. Sub-grade soil must have a minimum infiltration rate of one half inch (1/2") per hour as determined by a standard perc test with a plasticity index of zero. Fine graded and moderately compacted such that the permeability of the soil is not negatively impacted but soil is able to support the expected vehicular load surcharge.
- b) Base Course:** Stone base could range anywhere from 6 to 18 in. or more, depending on local hydrologic conditions and required stormwater storage. Should be open graded stone with a 30% void ratio.
- c) Surface:** 600 pounds per cubic yard of cementitious material (no more than 50 pounds per cubic yard of fly ash), a water-cement ratio of 0.26 to 0.30, aggregate at 1/2-inch maximum size

(3/8 inch is best), and no fine aggregate smaller than #4. This should result in a concrete with a unit weight of 120 pcf with voids at 20% after compaction. Proper compaction—to a void ratio of 12% to 20%—is essential. This can be achieved with a roller screed followed by cross rolling with hand rollers that weigh 40 pounds per foot. In a typical pervious concrete pavement system, the pervious concrete is usually 4 to 6 in. thick for a sidewalk or parking lot or 8 in. thick for a local road. Colored and/or imprinted concrete is acceptable. See Maryland Stormwater Design Manual p. 5.46-51.

- d) **Maintenance:** Surface should be vacuumed or swept twice annually. The surface must be kept free of weeds and other vegetation. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately. No sealant or top coating allowed that would render the surface impervious.

Section 1.04 Concrete Unit Pavers - Standard

- (a) **Sub-grade:** In-situ material or fill material (approved by the Engineering Department) as necessary. Fine graded and compacted to a density not less than 90% of maximum dry density per AASHTO T-180
- (b) **Base Course:** Not required, however a 4" graded aggregate base per MSHA Section 501 is recommended.
- (c) **Surface:** Interlocking Concrete Unit Pavers (ASTM C936), minimum thickness 2-3/8" over a 1" thick sand bed. Install per Interlocking Concrete Paver Institute (ICPI) standards. Edge entire perimeter with edge restraint system approved by ICPI.
- (d) **Maintenance:** The property owner is responsible for properly maintaining the pavement surface and edge restraints per the paver manufacturer's recommendations. The surface must be kept free of weeds and other vegetation. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately.

Section 1.04.1 Concrete Unit Paver – Permeable

- a) **Sub-grade:** In-situ material or fill material (approved by the Engineering Department) Sub-grade soil must have a minimum

infiltration rate of one half inch (1/2") per hour as determined by a standard perc test with a plasticity index of zero. Fine graded and moderately compacted such that the permeability of the soil is not negatively impacted but soil is able to support the expected vehicular load surcharge.

- b) **Base Course:** Open graded base: 6" thick (8" preferred) #57 stone per MSHA section 501 and 901. Install a layer of filter fabric between the base course and the bedding material. Filter Fabric should the following specifications:

Soil Retention	18mm
Permeability	5×10^{-5}
Clogging Resistance	n > 30%
Survivability Req'd	Low
Gradation	Widely Grade
Relative Soil Density	Medium

- c) **Surface:** Interlocking Concrete Unit Paver system (ASTM C936) with minimum void area per square foot of eight percent (8%) and an infiltration rate of the first 1" to the subgrade within 20 seconds or less. Minimum paver thickness of 2-3/8" over a minimum 1" #8 aggregate bedding layer. Fill void material with poorly graded aggregate as recommended by the paver manufacturer. Install per Interlocking Concrete Paver Institute (ICPI) standards. Edge entire perimeter with edge restraint system approved by ICPI or the Town of Ocean City.

- d) **Maintenance:** The property owner is responsible for properly maintaining the pavement surface and edge restraints per the paver manufacturer's recommendations. All stone must be contained within the parking/driveway area. The surface must be kept free of weeds and other vegetation. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately. If part of a Stormwater Management Plan a Maintenance and Inspection agreement must be signed, notarized and recorded with the land records of Worcester County.

Section 1.05 Concrete Grid Pavers

(a) **Subgrade:** In-situ material or fill material (approved by the Engineering Department) Sub-grade soil must have a minimum infiltration rate of one half inch (1/2”) per hour as determined by a standard perc test with a plasticity index of zero. Fine graded and moderately compacted such that the permeability of the soil is not negatively impacted but soil is able to support the expected vehicular load surcharge.

(b) **Base Course:** Open graded base: 6” thick (8” preferred) #57 stone per MSHA section 501 and 901. Install a layer of filter fabric between the base course and the bedding material. Filter Fabric should the following specifications:

Soil Retention	18mm
Permeability	5x 10 ⁻⁵
Clogging Resistance	n > 30%
Survivability Req'd	Low
Gradation	Widely Grade
Relative Soil Density	Medium

(c) **Surface Course:** Concrete Grid Paver per National Concrete Masonry Association (NCMA) A-15-82. Void area per square foot should be between twenty and fifty percent (20%-50%). One inch (1”) thick #8 aggregate bed (voids filled with stone) and an infiltration rate of the first 1” to the subgrade within 20 seconds or less. (voids filled with topsoil and vegetation). Install per grid manufacturer’s recommendations.

(d) **Maintenance:** The property owner is responsible for properly maintaining the pavement surface and edge restraints per the paver manufacturer’s recommendations. All stone must be contained within the parking/driveway area and immediately removed from the sidewalk or public street areas. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately. All vegetation must be properly maintained and cut to a height not exceeding nine inches (per City Code Sec. 30-201).

Section 1.06 Geotextile Grid System

(a) **Subgrade:** In-situ material or fill material (approved by the Engineering Department) Sub-grade soil must have a minimum

infiltration rate of one half inch (1/2") per hour as determined by a standard perc test with a plasticity index of zero. Fine graded and moderately compacted such that the permeability of the soil is not negatively impacted but is able to support the expected vehicular load surcharge.

- (b) **Base Course:** Not required, however a 4" thick graded aggregate base course per MSHA Section 501 is recommended.
- (c) **Surface Course:** Geotextile or plastic grid type system with voids filled with either stone or vegetation. Minimum load rating of 8,000 pounds gross vehicle weight. Submit system specifications, manufacturer's literature and sample to City Engineer for approval. Install per manufacturers recommendations.
- (d) **Maintenance:** The property owner is responsible for properly maintaining the pavement surface per the geotextile manufacturer's recommendations. All stone must be contained within the parking/driveway area and immediately removed from the sidewalk or public street areas. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately. All vegetation must be properly maintained and cut to a height not exceeding nine inches (per City Code Sec. 30-201).

Section 1.07 Aggregate Surface

- (a) **Subgrade:** In-situ material or fill material (approved by the Engineering Department) Sub-grade soil must have a minimum infiltration rate of one half inch (1/2") per hour as determined by a standard perc test with a plasticity index of zero. Fine graded and moderately compacted such that the permeability of the soil is not negatively impacted but is able to support the expected vehicular load surcharge. Should filter fabric be needed the following specifications are required:

Soil Retention	18mm
Permeability	5×10^{-5}
Clogging Resistance	n > 30%
Survivability Req't	Low
Gradation	Widely Grade
Relative Soil Density	Medium

- (b) Surface: Minimum 3” thickness aggregate material, with 0% fines (no material passing a # 200 sieve). All material to be contained with perimeter edging consisting of either concrete curbing, treated landscape timbers, or masonry. Submit aggregate sample and sieve analysis to City Engineer for approval. Install material per MSHA Section 501.03.07 through 501.03.09.**
- (c) Maintenance: The property owner is responsible for properly maintaining the stone surface. All stone must be contained within the parking/driveway area and immediately removed from the sidewalk or public street areas. The surface must be kept free of weeds and other vegetation. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately. Add stone as necessary to maintain grading and drainage.**

Section 1.08 Track System

- (a) Description: In place of structurally reinforcing the entire driveway width, this method consists of installing a pair of minimum two foot (2’) wide “tracks” for the vehicle to ride on with a permeable center area.**
- (b) “Track” Area: Either Asphalt or Pervious Asphalt, Concrete or Pervious Concrete, Concrete Unit Pavers, or Concrete Unit Paver – Permeable. Construct track portion in accordance with the applicable section above. Sub-grade preparation and base course must extend a minimum of six inches (6”) beyond the edge of each track.**
- (c) “Center” Area: Either topsoil and vegetation, or aggregate material complying with 1.08(c).**
- (d) Maintenance: The property owner is responsible for properly maintaining the pavement surface. All stone must be contained within the parking/driveway area and immediately removed from the sidewalk or public street areas. The paved track surface must be kept free of weeds and other vegetation. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately. All vegetation within**

the center area must be properly maintained and cut to a height not exceeding nine inches (per City Code Sec. 30-201).

Article III Commercial, office, business, industrial, multi-family and others.

[Code Reference 74-72 (a)(2) (a)]

Section 2.01 General

(a)(a) These standards differentiate the construction requirements between materials/systems allowed in parking space areas [Code reference 110-935(a)] and interior drives and loading areas [Code reference 110-935 (e) and 110-961]. While all the following methods are permitted within the defined parking space area, some are restricted from use in the interior drive and loading areas. This is due to the higher load frequencies and vehicle turns within the interior drive areas.

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(b)(b) The American Disabilities Act (ADA) must be considered when utilizing these standards. Certain surface materials (particularly aggregate, concrete grid, and geotextile) can not be used in designated handicapped parking spaces or along accessible routes as defined by the ADA, the building official, or Fire Marshal.

Section 2.02 Hot Mix Asphalt.

(a)(a) Sub-grade: In-situ material or fill material (approved by the Engineering Department) as necessary. Fine graded and compacted to a density not less than 90% of maximum dry density per AASHTO T-180

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(b)(b) Base Course: Minimum 4" (6" recommended) graded aggregate base per MSHA Section 501. This requirement may be waived by the Engineering Department for low volume parking lots.

(c)(c) Surface: Hot Mix Asphalt Pavement per MSHA Section 504. Consisting of a minimum of two inches (2") of either type SF or SC surface mix.

(d)(d) Maintenance: The surface must be kept free of weeds and other vegetation. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately.

Section 2.02.01 Porous Hot Mix Asphalt

- (a) Sub-grade: In-situ material or fill material (approved by the Engineering Department) Sub-grade soil must have a minimum infiltration rate of one half inch (1/2") per hour as determined by a standard perc test with a plasticity index of zero. Fine graded and moderately compacted such that the permeability of the soil is not negatively impacted but soil is able to support the expected vehicular load surcharge.**
- (b) Base Course Base Course: Below the porous asphalt itself are located the porous media infiltration beds from top to bottom: a 4" (minimum) thick layer of choker course of 57 stone, 8" is preferable to alleviate compaction issues with the porous asphalt); an 8" to 12" minimum thickness layer of filter course of poorly graded sand (a.k.a. bank run gravel or modified 304.1) and a reservoir course of crushed stone, thickness dependant on required storage with 1/5" to 2" stone. See State of Maryland Stormwater Design Manual p.5.49 and the University of New Hampshire Stormwater Center Design standards for porous asphalt pavement. The bottom of the base should be level to enhance distribution.**
- (c) Surface: Porous Asphalt Mix Design Criteria. Pavement surfaces shall have a permeability of eight inches per hour or greater with a slope < 5%. Alternative mode required for runoff to enter subbase storage such as a stone edge drain or a catch basin. The following is a sample porous Asphalt Mix Design Criteria.**

Porous Asphalt Mix Design Criteria.	
Sieve Size (inch/mm)	Percent Passing (%)
0.75/19	100%
0.50/12.5	85-100%
0.375/9.5	55-75%
No.4/4.75	10-25%
No.8/2.36	5-10%
No.200/0.075 (#200)	2-4%
Binder Content (AASHTO T164)	6 - 6.5%
Fiber Content by Total Mixture Mass 0.3% cellulose or	0.3% cellulose or 0.4% mineral
Rubber Solids (SBR) Content by Weight of the Bitumen	1.5-3% or TBD
Air Void Content (ASTM D6752/AASHTO T275)	16.0-22.0%
Draindown (ASTM D6390)*	< 0.3 %
Retained Tensile Strength (AASHTO 283)**	> 80 %
Cantabro abrasion test on unaged samples (ASTM D7064-04)	< 20%
Cantabro abrasion test on 7 day aged samples	< 30%
*Cellulose or mineral fibers may be used to reduce draindown.	
**If the TSR (retained tensile strength) values fall below 80% when tested per NAPA IS 131	
(with a single freeze thaw cycle rather than 5), then in Step 4, the contractor shall employ an	
antistrip additive, such as hydrated lime (ASTM C977) or a fatty amine, to raise the TSR value	
above 80%.	

surface must be kept free of weeds and other vegetation. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately. Pervious Asphalt must not be sealed or top coated to render surface impervious. Pavement surfaces should be swept twice annually and vacuumed to reduce sediment accumulation and ensure continued surface porosity.

Section 2.03 Portland Cement Concrete

- a) **Sub-grade:** In-situ material or fill material (approved by the Engineering Department) as necessary. Fine graded and compacted to a density not less than 90% of maximum dry density per AASHTO T-180
- b) **Base Course:** Minimum 4" (6" recommended) graded aggregate base per MSHA Section 501.
- c) **Surface:** Portland cement concrete pavement per MSHA Section 520. Mix Number 2, 3 or equivalent. Minimum four inches (4") thick reinforced with #6/6 6x6 welded wire fabric in the driveway apron only. Colored and/or imprinted concrete is acceptable.
- d) **Maintenance:** The surface must be kept free of weeds and other vegetation. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately.

Section 2.03.1 Pervious Portland Cement Concrete

- a) **Sub-grade:** In-situ material or fill material (approved by the Engineering Department) as necessary. Sub-grade soil must have a minimum infiltration rate of one half inch (1/2") per hour as determined by a standard perc test with a plasticity index of zero. Fine graded and moderately compacted such that the permeability of the soil is not negatively impacted but soil is able to support the expected vehicular load surcharge.
- b) **Base Course:** Stone base could range anywhere from 6 to 18 in. or more, depending on local hydrologic conditions. Should be open graded stone with a 40% void ratio.
- c) **Surface:** 600 pounds per cubic yard of cementitious material (no more than 50 pounds per cubic yard of fly ash), a water-cement ratio of 0.26 to 0.30, aggregate at 1/2-inch maximum size (3/8 inch is best), and no fine aggregate smaller than #4. This should result in a concrete with a unit weight of 120 pcf with voids at 20% after compaction. Proper compaction—to a void ratio of 12% to 20%—is essential. This can be achieved with a roller screed followed by cross rolling with hand rollers that weigh 40 pounds per foot. In a typical pervious concrete

pavement system, the pervious concrete is usually 4 to 6 in. thick for a sidewalk or parking lot or 8 in. thick for a local road.

- d) **Maintenance:** Surface should be vacuumed or swept annually. The surface must be kept free of weeds and other vegetation. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately. No sealant or top coating allowed that would render the surface impervious.

Section 2.04 Concrete Unit Pavers - Standard

- a) **Sub-grade:** In-situ material or fill material (approved by the Engineering Department) as necessary. Fine graded and compacted to a density not less than 90% of maximum dry density per AASHTO T-180
- b) **Base Course:** Minimum four inch (4") (six inch (6") recommended) graded aggregate base per MSHA Section 501.
- c) **Surface:** Interlocking Concrete Unit Pavers (ASTM C936), minimum thickness 2-3/8" over a 1" thick sand bed. Install per Interlocking Concrete Paver Institute (ICPI) standards. Edge entire perimeter with edge restraint system approved by ICPI.
- d) **Maintenance:** The property owner is responsible for properly maintaining the pavement surface and edge restraints per the paver manufacturer's recommendations. The surface must be kept free of weeds and other vegetation. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately.

Section 2.04.1 Concrete Unit Pavers – Permeable

- a) **Sub-grade:** In-situ material or fill material (approved by the Engineering Department) Sub-grade soil must have a minimum infiltration rate of one half inch (1/2") per hour as determined by a standard perc test with a plasticity index of zero. Fine graded and moderately compacted such that the permeability of the soil is not negatively impacted but soil is able to support the expected vehicular load surcharge.
- b) **Base Course:** Open graded base: 6" thick (8" preferred) #57 stone per MSHA section 501 and 901. Install a layer of filter

fabric between the base course and the bedding material. Filter Fabric should the following specifications:

Soil Retention	18mm
Permeability	5×10^{-5}
Clogging Resistance	$n > 30\%$
Survivability Req'd	Low
Gradation	Widely Grade
Relative Soil Density	Medium

- c) Surface: Interlocking Concrete Unit Paver system (ASTM C936) with void area per square foot of between twelve and twenty percent (12%-20%). Minimum paver thickness of 2-3/8" over a minimum 1" of #8 aggregate bedding layer. Fill void material with poorly graded aggregate as recommended by the paver manufacturer. Install per Interlocking Concrete Paver Institute (ICPI) standards. Must edge entire perimeter with edge restraint system approved by ICPI. . If part of a Stormwater Management Plan a Maintenance and Inspection agreement must be signed, notarized and recorded with the land records of Worcester County.**
- d) Maintenance: The property owner is responsible for properly maintaining the pavement surface and edge restraints per the paver manufacturer's recommendations. The surface must be kept free of weeds and other vegetation. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately. All stone must be contained within the parking/driveway area.**

Section 2.05 Concrete Grid Pavers – Parking Area Only

- a) Subgrade: In-situ material or fill material (approved by the Engineering Department) Sub-grade soil must have a minimum infiltration rate of one half inch (1/2") per hour as determined by a standard perc test with a plasticity index of zero. Fine graded and moderately compacted such that the permeability of the soil is not negatively impacted but soil is able to support the expected vehicular load surcharge.**
- b) Base Course: Open graded base: 6" thick (8" preferred) #57 stone per MSHA section 501 and 901. Install filter fabric around the outside and bottom of the #57 stone. Install a layer of filter**

fabric between the base course and the bedding material. Filter Fabric should the following specifications:

Soil Retention	18mm
Permeability	5×10^{-5}
Clogging Resistance	$n > 30\%$
Survivability Req'd	Low
Gradation	Widely Grade
Relative Soil Density	Medium

- c) Surface Course: Concrete Grid Paver per National Concrete Masonry Association (NCMA) A-15-82. Void area per square foot between twenty and fifty percent (20%-50%). One inch (1") thick #8 aggregate bed (voids filled with stone). Install per grid manufacturer's recommendations.**
- d) Maintenance: The property owner is responsible for properly maintaining the pavement surface and edge restraints per the paver manufacturer's recommendations. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately. All stone must be contained within the parking/driveway area and immediately removed from the sidewalk or public street areas. All vegetation must be properly maintained and cut to a height not exceeding nine inches (per City Code Sec. 30-201).**

Section 2.06 Geotextile Grid System – Parking Areas Only

- (a) **Subgrade:** In-situ material or fill material (approved by the Engineering Department) Sub-grade soil must have a minimum infiltration rate of one half inch (1/2”) per hour as determined by a standard perc test with a plasticity index of zero. Fine graded and moderately compacted such that the permeability of the soil is not negatively impacted but soil is able to support the expected vehicular load surcharge.
- (b) **Surface Course:** Geotextile or plastic grid type system with voids filled with either stone or vegetation. Minimum load rating of 40,000 pounds gross vehicle weight. Submit system specifications, manufacturer's literature and sample to City Engineer for approval. Install per manufacturers recommendations.
- (c) **Maintenance:** The property owner is responsible for properly maintaining the pavement surface per the geotextile manufacturer’s recommendations. All stone must be contained within the parking/driveway area and immediately removed from the sidewalk or public street areas. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately. All vegetation must be properly maintained and cut to a height not exceeding nine inches (per City Code Sec. 30-201).

Section 2.07 Aggregate Surface – Parking areas only, requires approval by Mayor and City Council.

- (a) **Subgrade:** In-situ material or fill material (approved by the Engineering Department) Sub-grade soil must have a minimum infiltration rate of one half inch (1/2”) per hour as determined by a standard perc test with a plasticity index of zero. Fine graded and moderately compacted such that the permeability of the soil is not negatively impacted but soil is able to support the expected vehicular load surcharge. Should filter fabric be needed the following specifications are required:

Soil Retention	18mm
Permeability	5x 10 ⁻⁵
Clogging Resistance	n > 30%
Survivability Req'd	Low
Gradation	Widely Grade

.Relative Soil Density Medium

- (b) Surface: Minimum 4" thickness aggregate material, with 0% fines (no material passing a # 200 sieve). All material to be contained with perimeter edging consisting of either concrete curbing, treated landscape timbers, or masonry. Submit aggregate sample and sieve analysis to City Engineer for approval. Install material per MSHA Section 501.03.07 through 501.03.09.**
- (c) Maintenance: The property owner is responsible for properly maintaining the stone surface and edge restraint. All stone must be contained within the parking area and immediately removed from the sidewalk, public street, or travel/back-up areas. The surface must be kept free of weeds and other vegetation. The surface grade shall be maintained as installed, ruts and potholes must be repaired immediately. Add stone as necessary to maintain grading and drainage. The surface shall be kept moist as necessary to prevent dust and debris from becoming airborne.**

Section 2.08 *Pavement Overlays*

- (a) Existing impermeable pavements may be overlaid from time to time for maintenance purposes. Pavement overlays shall not increase the authorized impervious area of any parking lot.**
 - i) Existing pavements constructed per above standard section 2.02, 2.03 or 2.04: Minimum of 1" thickness of MSHA Mix SF or SR or a minimum of 1-1/2" thickness of MSHA Mix SC. Construct overlays in accordance with MSHA 504**
 - ii) Existing impermeable pavements constructed with a minimum of 2" hot-mix asphalt or 4" concrete: Minimum of 1" thickness of MSHA Mix SF or SR or a minimum of 1-1/2" thickness of MSHA Mix SC. Construct overlays in accordance with MSHA 504**
 - iii) Existing pavements not constructed per these standards nor with a minimum 2" hot-mix asphalt or 4" concrete pavement thickness and not required to be permeable for stormwater management purposes: Minimum of 1-1/2" thickness of MSHA Mix SF, SR, or SC. Construct overlays in accordance with MSHA 504.**

(b) Permeable pavement areas shall not be overlaid. Repairs and maintenance to pervious pavement materials shall be per the pavement manufacturer's recommendations and shall not decrease the design porosity or functionality of the pavement system.