

Appendix C: Sample Quantities Guide

| | | Material / Product | Characteristic | Sampling Method | Minimum Field Sample lbs (kg) | Minimum Split Size to FLHD Lab lbs (kg) | |
|---------------------|-------------------------------|-------------------------------|-------------------------------|-----------------|-------------------------------|---|--|
| Division 200 | Section 204 | Topping | Classification | AASHTO T 2 | | | |
| | | | 2" | | 220 (100) | 44 (20) | |
| | | | 1" | | 110 (50) | 22 (10) | |
| | | | Moisture - Density | AASHTO T 2 | 330 (150) | 50 (23) | |
| | | Select Topping | Classification | AASHTO T 2 | | | |
| | | | 2" | | 220 (100) | 44 (20) | |
| | | | 1" | | 110 (50) | 22 (10) | |
| | | | Gradation | AASHTO T 2 | | | |
| | | | 2" | | 220 (100) | 44 (20) | |
| | | | 1" | | 110 (50) | 22 (10) | |
| | | | Liquid Limit/Plasticity Index | AASHTO T 2 | 12 (5) | 12 (5) | |
| | | | Moisture-density | | 330 (150) | 50 (23) | |
| | | Unclassified Borrow | Classification | AASHTO T 2 | | | |
| | | | 2" | | 220 (100) | 44 (20) | |
| | | | 1" | | 110 (50) | 22 (10) | |
| | Moisture-density | | AASHTO T 2 | 330 (150) | 50 (23) | | |
| | Select Borrow | | Classification | AASHTO T 2 | | | |
| | | | 2" | | 220 (100) | 44 (20) | |
| | | | 1" | | 110 (50) | 22 (10) | |
| | | Gradation | AASHTO T 2 | | | | |
| | | 2" | | 220 (100) | 44 (20) | | |
| | 1" | | 110 (50) | 22 (10) | | | |
| | Liquid Limit/Plasticity Index | AASHTO T 2 | 12 (5) | 12 (5) | | | |
| | | Moisture-density | AASHTO T 2 | 330 (150) | 50 (23) | | |
| | Earth Embankment | Classification | AASHTO T 2 | | | | |
| | | 2" | | 220 (100) | 44 (20) | | |
| | | 1" | | 110 (50) | 22 (10) | | |
| | | 3/4" | | 55 (25) | 11 (5) | | |
| | | 1/2" | | 35 (15) | 4 (2) | | |
| | | Moisture-density | AASHTO T 2 | 330 (150) | 50 (23) | | |
| Section 208 | | Foundation Fill | Classification | AASHTO T 2 | | | |
| | 2" | | | 220 (100) | 44 (20) | | |
| | 1" | | | 110 (50) | 22 (10) | | |
| | Gradation | | AASHTO T 2 | | | | |
| | 2" | | | 220 (100) | 44 (20) | | |
| | 1" | | 110 (50) | 22 (10) | | | |
| | Liquid Limit/Plasticity Index | AASHTO T 2 | 12 (5) | 12 (5) | | | |
| | Moisture-density | AASHTO T 2 | 220 (100) | 50 (23) | | | |
| | Structural Backfill | Gradation | AASHTO T 2 | 330 (150) | 130 (60) | | |
| | | Liquid Limit/Plasticity Index | AASHTO T 2 | 12 (5) | 12 (5) | | |
| Moisture-density | | AASHTO T 2 | 330 (150) | 50 (23) | | | |
| Section 209 | Backfill Material | Gradation | AASHTO T 2 | | | | |
| | | 3" | | 330 (150) | 130 (60) | | |
| | | 2" | | 220 (100) | 44 (20) | | |
| | | 1" | | 110 (50) | 22 (10) | | |
| | | Liquid limit | AASHTO T 2 | 12 (5) | 12 (5) | | |
| | Moisture-density | AASHTO T 2 | 330 (150) | 50 (23) | | | |
| | Bedding Material | Moisture-density | AASHTO T 2 | 35 (15) | 50 (23) | | |
| | Foundation Fill | Moisture-density | AASHTO T 2 | 220 (100) | 50(23) | | |
| Unclassified Borrow | Classification | AASHTO T 2 | | | | | |
| | 3" | | 330 (150) | 130 (60) | | | |
| | 2" | | 220 (100) | 44 (20) | | | |
| | 1" | | 110 (50) | 22 (10) | | | |

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| | | Material / Product | Characteristic | Sampling Method | Minimum Field Sample lbs (kg) | Minimum Split Size to FLHD Lab lbs (kg) |
|---------------------|---|--|--|------------------------|-------------------------------|---|
| | | Division 200 | Section 213 | Subgrade Stabilization | Mix Design | |
| | | | Soil | AASHTO T 2 | — | 200 (90) |
| | | | Fly Ash | ASTM C 311 | — | 50 (25) |
| | | | Lime | AASHTO T 218 | — | 25 (10) |
| | | | Cement | AASHTO T 127 | — | 25 (10) |
| | Section 251 | Riprap | Aggregate source quality Apparent specific gravity & absorption, Coarse Durability Index, Sodium Sulfate Soundness, LA Abrasion | AASHTO T 2 | — | 200 (90) |
| | Section 255 | Select Granular Backfill | Quality requirements | AASHTO T 2 | | |
| | | | Gradation, Angle of internal friction, Soundness, Plasticity index, Electrochemical | | | |
| | | | 3" | 330 (150) | 130 (60) | |
| | | | 2" | 220 (100) | 44 (20) | |
| | | 1" | 110 (50) | 22 (10) | | |
| | | Moisture - Density | AASHTO T 2 | 330 (150) | 50 (23) | |
| | Structural Backfill | Gradation | AASHTO T 2 | 330 (150) | 130 (60) | |
| | | Liquid Limit/Plasticity Index | AASHTO T 2 | 12 (5) | 12 (5) | |
| | | Moisture - Density | AASHTO T 2 | 330 (150) | 50 (23) | |
| Division 300 | Section 301 | Aggregate source quality | LA abrasion, Sodium sulfate soundness loss (coarse & fine), Durability Index (coarse & fine), Fractured faces | AASHTO T 2 | 300 (150) | 200 (90) |
| | | Subbase course, grading A & B | Gradation, Liquid Limit | AASHTO T2 | 165 (75) | 33 (15) |
| | | | Moisture - Density | AASHTO T 2 | 110 (50) | 50 (23) |
| | | Base course, grading C, D, & E | Gradation, Liquid Limit | AASHTO T2 | 110 (50) | 22 (10) |
| | Moisture - Density | | AASHTO T 2 | 110 (50) | 50 (23) | |
| | Surface course aggregate | Gradation, Liquid Limit/Plasticity Index, Fractured faces | AASHTO T 2 | 110 (50) | 22 (10) | |
| | | Moisture density (max. density) | AASHTO T 2 | 110 (50) | 50 (23) | |
| | | Treated aggregate course (mix design submittal) | Aggregate | AASHTO T 2 | — | 200 (90) |
| | | | Fly Ash | ASTM C 311 | — | 50 (23) |
| | | | Lime | AASHTO T 218 | — | 25 (12) |
| | Hydraulic cement | | AASHTO T 127 | — | 25 (12) | |
| | Retarder / Additives | — | — | 5 (2) | | |
| | Aggregate | Gradation, Liquid Limit | AASHTO T 2 | | | |
| | | 1 1/2" | 165 (75) | 33 (15) | | |
| | | 1" | 110 (50) | 22 (10) | | |
| | Mixture | Moisture - Density | AASHTO T 2 | 165 (75) | 50 (23) | |
| | Section 302 | Aggregate, Fly ash, Lime, Cement Mixtures (mix design submittal) | Aggregate | AASHTO T 2 | — | 200 (90) |
| | | | Fly Ash | ASTM C 311 | — | 50 (23) |
| | | | Lime | AASHTO T 218 | — | 25 (12) |
| | | | Hydraulic cement | AASHTO T 127 | — | 25 (12) |
| | | | Retarder | — | — | 5 (2) |
| Moisture - Density | | | AASHTO T 2 | 165 (75) | 50 (23) | |
| Section 304 | Aggregate, Fly ash, Lime, Cement Mixtures | Aggregate | AASHTO T 2 | — | 200 (90) | |
| | | Fly Ash | ASTM C 311 | — | 50 (23) | |
| | | Lime | AASHTO T 218 | — | 25 (12) | |
| | | Hydraulic cement | AASHTO T 127 | — | 25 (12) | |
| | | Retarder | — | — | 5 (2) | |
| Moisture - Density | AASHTO T 2 | 165 (75) | 50 (23) | | | |
| Imported aggregate | Gradation, Liquid Limit | AASHTO T2 | | | | |
| | 1 1/2" | 165 (75) | 33 (15) | | | |
| | 1" | 110 (50) | 22 (10) | | | |
| Section 305 | Aggregate-Topsoil course | Moisture - Density | AASHTO T 2 | 110 (50) | 50 (23) | |

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| Division 300 | | Material / Product | Characteristic | Sampling Method | Minimum Field Sample lbs (kg) | Minimum Split Size to FLHD Lab lbs (kg) |
|--------------|---|---|-------------------|--------------------|-------------------------------|---|
| | | Section 308 | Crushed aggregate | Moisture - Density | AASHTO T 2 | 110 (50) |
| Section 309 | Aggregate source quality | LA abrasion, Sodium sulfate soundness loss (coarse & fine), Durability Index (coarse & fine), Fractured faces | AASHTO T 2 | — | 200 (90) | |
| | Emulsified asphalt treated base | Gradation, Sand Equivalent | AASHTO T 2 | 110 (50) | 22 (10) | |
| | Emulsified asphalt treated base (submittal) | Quality, mixture properties | AASHTO T 2 | — | 300 (150) | |

| Division 400 | | Material / Product | Characteristic | Sampling Method | Minimum Field Sample lbs (kg) | Minimum Split Size to FLHD Lab lbs (kg) |
|--|--|--|--------------------------|---|--|---|
| | | Section 401 | Aggregate source quality | LA abrasion, Sodium sulfate soundness loss (coarse & fine), Fine aggregate angularity, Flat and elongated particles, Sand equivalent, Fractured faces | AASHTO T 2 | — |
| Superpave Asphalt Concrete (mix design) | Mix design aggregate | | AASHTO T 2 | — | 800 (375) | |
| | Bag house fines | | — | — | 20 (10) | |
| | Mineral filler | | — | — | 20 (10) | |
| | Asphalt binder | | AASHTO T 40 | — | 5 1-gallon samples (5 4-liter samples) | |
| | Lime | | AASHTO T 218 | — | 10 (5) | |
| Recycled asphalt pavement (RAP) | — | | — | 200 (100) | | |
| Asphalt binder | Quality | | AASHTO T 40 | — | 2 1-quart samples (2 1-liter samples) | |
| Hot asphalt concrete pavement (production) | Gradation, Asphalt content, VMA, VFA, Maximum specific gravity | | AASHTO T 168 | 100 (45) | 45 (20) | |
| | Core density | | ASTM D 5361 | 6 inch (150 mm) core | 6 inch (150 mm) core | |
| | Aggregate source quality | LA abrasion, Sodium sulfate soundness loss (coarse & fine), Durability Index (coarse & fine), Fractured faces, Sand equivalent | AASHTO T 2 | — | 200 (90) | |
| Section 402 | Hveem or Marshall Asphalt Concrete (mix design) | Mix design aggregate | AASHTO T 2 | — | 800 (375) | |
| | | Bag house fines | — | — | 20 (10) | |
| | | Mineral filler | — | — | 20 (10) | |
| | | Asphalt binder | AASHTO T 40 | — | 5 1-gallon samples (5 4-liter samples) | |
| | | Lime | AASHTO T 218 | — | 10 (5) | |
| | Recycled asphalt pavement (RAP) | — | — | 200 (100) | | |
| | Hot asphalt concrete pavement (production) | Gradation, Asphalt content | AASHTO T 168 | — | — | |
| 3/4" | | — | 32 (14) | 16 (7) | | |
| 1/2" | | — | 24 (10) | 12 (5) | | |
| 3/8" | | — | 16 (8) | 8 (4) | | |
| Core density | ASTM D 5361 | 6 inch (150 mm) core | 6 inch (150 mm) core | | | |
| Section 403 | Hot asphalt concrete pavement (mix design verification) | Mix design aggregate | AASHTO T 2 | — | 800 (375) | |
| | | Bag house fines | — | — | 20 (10) | |
| | | Mineral filler | — | — | 20 (10) | |
| | | Asphalt binder | AASHTO T 40 | — | 5 1-gallon samples (5 4-liter samples) | |
| | | Lime | AASHTO T 218 | — | 10 (5) | |
| | Recycled asphalt pavement (RAP) | — | — | 200 (100) | | |
| | Hot asphalt concrete pavement (production) | Gradation, Asphalt content | AASHTO T 168 | — | — | |
| | | 3/4" | — | 32 (14) | 16 (7) | |
| | | 1/2" | — | 24 (10) | 12 (5) | |
| | | 3/8" | — | 16 (8) | 8 (4) | |
| Asphalt binder | Quality | AASHTO T 40 | — | 2 1-quart samples (2 1-liter samples) | | |
| Section 405 | Open-graded asphalt friction course | Gradation | AASHTO T 168 | 8 (4) | 8 (4) | |
| | Asphalt binder | Quality | AASHTO T 40 | — | 2 1-quart samples (2 1-liter samples) | |

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| Division 400 | | Material / Product | Characteristic | Sampling Method | Minimum Field Sample lbs (kg) | Minimum Split Size to FLHD Lab lbs (kg) |
|--------------|--|---|----------------|-----------------|-------------------------------|--|
| | Section 408 | Emulsified asphalt | Quality | | AASHTO T 40 | — |
| Section 409 | Aggregate surface treatment - source quality | LA abrasion, Sodium sulfate soundness loss (coarse & fine), Durability Index (coarse & fine), Fractured faces, Flat and elongated particles | | AASHTO T2 | — | 200 (90) |
| | Aggregate surface treatment - produced aggregate | Gradation / Fractured faces | | AASHTO T2 | | |
| | | 1" | | | 110 (50) | 22 (10) |
| | | 3/4" | | | 55 (25) | 11 (5) |
| | | 1/2" | | | 35 (15) | 4 (2) |
| | 3/8" | | | 25 (10) | 2 (1) | |
| | Asphalt binder | Quality | | AASHTO T 40 | — | 2 1-quart samples (2 1-liter samples) |
| | Emulsified asphalt | Quality | | AASHTO T 40 | — | 1 gallon (4 liter) sample |
| Section 410 | Aggregates for slurry seal | LA Abrasion | | AASHTO T 2 | — | 12 (5) Material retained on #4 (4.75 mm) sieve |
| | | Soundness | | AASHTO T 2 | — | 12 (5) |
| | | Gradation / Sand equivalent | | AASHTO T 2 | 25 (10) | 4 (2) |
| Section 411 | Emulsified asphalt or Cut-back asphalt | Quality | | AASHTO T 40 | — | 1 gallon (4 liter) sample |
| Section 415 | Asphalt binder | Quality | | AASHTO T 40 | — | 2 1-quart samples (2 1-liter samples) |
| | Emulsified asphalt | Quality | | AASHTO T 40 | — | 1 gallon (4 liter) sample |
| Section 416 | Recycled base course, Type A (mix design) | Pavement samples | | | — | 10 6-inch (150 mm) cores |
| | | Emulsified asphalt | | AASHTO T 40 | — | 2 gallons (8 liters) |
| | | Quicklime | | AASHTO T 218 | — | 2 (1) |
| | | Emulsified asphalt | Quality | | AASHTO T 40 | — |

| | | | | | | |
|--------------|-------------|--------------------------|--|------------------------------|------------------------------|--------------------|
| Division 500 | Section 501 | Aggregate source quality | COARSE AGGREGATE: Gradation, LA abrasion, Sodium sulfate soundness, Clay lumps | AASHTO T 2 and AASHTO M 80 | — | 200 (90) |
| | | | FINE AGGREGATE: Gradation, LA abrasion, Sodium sulfate soundness, Clay lumps, Organic impurities | AASHTO T 2 and AASHTO M 6 | — | 25 (10) |
| | | Structural concrete | Compressive Strength | AASHTO T 141 and AASHTO T 23 | — | 1 set of cylinders |
| | Section 502 | Aggregate source quality | COARSE AGGREGATE: Gradation, LA abrasion, Sodium sulfate soundness, Clay lumps | AASHTO T 2 and AASHTO M 80 | — | 200 (90) |
| | | | FINE AGGREGATE: Gradation, LA abrasion, Sodium sulfate soundness, Clay lumps, Organic impurities | AASHTO T 2 and AASHTO M 6 | — | 25 (10) |
| | | | Structural concrete | Compressive Strength | AASHTO T 141 and AASHTO T 23 | — |
| | Section 552 | Aggregate source quality | COARSE AGGREGATE: Gradation, LA abrasion, Sodium sulfate soundness, Clay lumps | AASHTO T 2 and AASHTO M 80 | — | 200 (90) |
| | | | FINE AGGREGATE: Gradation, LA abrasion, Sodium sulfate soundness, Clay lumps, Organic impurities | AASHTO T 2 and AASHTO M 6 | — | 25 (10) |
| | | | Structural concrete | Compressive Strength | AASHTO T 141 and AASHTO T 23 | — |
| | Section 553 | Prestressed concrete | Compressive Strength | AASHTO T 141 and AASHTO T 23 | — | 1 set of cylinders |

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| Division 500 | Section 566 | Material / Product | Characteristic | Sampling Method | Minimum Field Sample lbs (kg) | Minimum Split Size to FLHD Lab lbs (kg) |
|--------------|----------------------|--------------------------|--|---|-------------------------------|---|
| | | Aggregate source quality | COARSE AGGREGATE: Gradation, LA abrasion, Sodium sulfate soundness, Clay lumps FINE AGGREGATE: Gradation, LA abrasion, Sodium sulfate soundness, Clay lumps, Organic impurities | AASHTO T 2 and AASHTO M 80 AASHTO T 2 and AASHTO M 6 | — | 200 (90) 25 (10) |
| Shotcrete | Compressive Strength | AASHTO T 24 | — | Cores from production panels | | |

| Division 600 | Section 605 | Granular backfill | Gradation | AASHTO T2 | | |
|--------------|-------------------|--------------------------|-----------|-----------|----------|---------|
| | | | 1 1/2" | | 165 (75) | 33 (15) |
| | | | 1" | | 110 (50) | 22 (10) |
| | | | 3/4" | | 55 (25) | 11 (5) |
| | | | 1/2" | | 35 (15) | 4 (2) |
| | | 3/8" | | 25 (10) | 2 (1) | |
| Section 608 | Bed course | Gradation & Liquid Limit | AASHTO T2 | 25 (10) | 4 (2) | |
| | Granular backfill | Gradation | AASHTO T2 | 25 (10) | 4 (2) | |
| Section 609 | Bed course | Gradation & Liquid Limit | AASHTO T2 | 25 (10) | 4 (2) | |
| Section 615 | Bed course | Gradation & Liquid Limit | AASHTO T2 | 25 (10) | 4 (2) | |
| Section 616 | Bed course | Gradation & Liquid Limit | AASHTO T2 | 25 (10) | 4 (2) | |