

AMENDMENTS
to
Manual of
STANDARD SPECIFICATIONS

Adopted by
Standard Specifications Committee

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FORWARD

This document modifies the 2007 edition of the “Manual of Standard Specifications”. Affected paragraphs or articles are reproduced in partial or full text form. Changes are highlighted. All other provisions in the manual remain in full force and effect.

PAVEMENT PULVERIZING

Section 02 41 15

2.3 MIX DESIGN

Page 172

B. Stabilizer: Use the following table as a guide.

Table 1 – Stabilizer Selection Guide	
Characteristics of Reclaimed Aggregate Before Addition of Stabilizer	Stabilizer
Asphalt binder content is greater than 15 percent.	Aggregate
Material passing No. 4 sieve is more than 45 percent.	Aggregate or Cement
Material passing No. 4 sieve has a plasticity index more than 10, (ASTM D 4318)	Cement or Chemical

BOUNDARY MARKERS AND SURVEY MONUMENTS

Section 31 05 10

3.7 MONUMENTS

Page 385

B. Compact backfill soil to 95 percent or greater, Modified Proctor Density, Section 31 23 26.

COMMON FILL

Section 31 05 13

2.5 NATIVE

Page 388

A. When allowed by ENGINEER, material obtained from Excavations may be used as fill, provided organic material, rubbish, debris, and other objectionable materials are removed and CONTRACTOR has submitted the appropriate Proctor data (see Section 31 23 26).

3.1 INSTALLATION

Page 390

- A. Trenches, Section 33 05 20.
- B. Structures, Section 31 23 23.
- C. Pavements, Section 32 05 10.
- D. Landscaping, Section 32 91 19.

CEMENT TREATED FILL

Section 31 05 15

2.1 CEMENT TREATED FLOWABLE FILL

Page 392

- E. Strength: 60 psi maximum in 28 days per ASTM D 4832.

GEOTEXTILES

Section 31 05 19

2.6 DRAINAGE GEOTEXTILES

Page 399 & 400

- C. Class B drainage applications are those where fabric is used with smooth graded surfaces having no sharp angular projections, no sharp angular aggregate, compaction requirements are light, (less than 95 percent Standard Proctor Density, Section 31 23 26), and Trenches are less than 10 feet deep.

3.1 STABILIZING POOR LOAD BEARING SOILS Page 401

- I. Compact backfill soils over fabric to 95 percent or greater, Standard Proctor Density, Section 31 23 26.

GEOGRIDS/GEOCOMPOSITES

Section 31 05 21

3.4 SOIL REINFORCEMENT

Page 408

- B. Place Embankment geogrid at locations and elevations shown on the Plans or controlled by geogrid manufacturer. Place any specified free draining crushed aggregate base above geogrid. Compact to 95 percent or greater, Standard Proctor Density.

EXCAVATION

Section 31 23 16

3.8 ROADWAY EXCAVATION

Page 414

- B. Backfill and compact over excavation, Section 31 23 26.

BACKFILLING FOR STRUCTURES

Section 31 23 23

1.6 ACCEPTANCE

Page 418

B. Structure Backfilling: One test per Lot.

Table 1 – Lot Size for Structural Backfilling Operations

NOTES

(a) Proctor density, Section 31 23 26

(b) Lift thickness before compaction is 8 inches.

3.6 COMPACTION

Page 420

A. Section 31 23 26.

COMPACTION

Section 31 23 26

3.2 FIELD QUALITY CONTROL

Page 422

B. Report: For each material tested, record the following.

7. Certification of test results by Independent Testing Agency.

C. Optimum Soil Density: Use ASTM D 2216 and the following industry standards.

1. A-1 Soils: Method C of ASTM D 1557 (Modified Proctor)
2. All Other Soils: Method C of ASTM D 698 (Standard Proctor).

SLURRY SEAL

Section 32 01 13

2.1 PAVING ASPHALT

Page 453

A. Tack coat, Section 32 12 14.

B. Emulsified asphalt, ASTM D 3628.

1. Residual asphalt at least 60 percent of the emulsion by weight.
2. Saybolt Furol viscosity of emulsion at 77 deg.F., ASTM D 2170, not greater than 50 seconds.

BACKFILLING ROADWAYS

Section 32 05 10

1.7 ACCEPTANCE

Page 498

Table No.1 – Lot Sizes

NOTES

(a) Proctor density, Section 31 23 26

A. Section 31 23 26.

CRUSHED AGGREGATE BASE

Section 32 11 23

1.4 **SUBMITTALS**

B Target gradation for each sieve size.

C. Material properties report.

1. The report is for suitability of source and not for project control.
2. Date of report must be within 360 days of the date of submission. Tests in the report must not be older than 90 days from the date of the report.
3. A new report may be required if gradation target is changed.

D. Prior to start of work submit relative density and relative moisture content for each crushed aggregate base to be used in the work.

1.6 **ACCEPTANCE**

A. General:

1. Defective work, Section 01 29 00.
2. Dispute resolution, Section 01 35 10.
3. ENGINEER is not obligated to accept changes in gradation target after any material is delivered to site.
4. Observation of CONTRACTOR's field quality control testing does not constitute acceptance. Such testing; however, may be used by ENGINEER for acceptance if the following conditions are met.
 - a. ENGINEER accepts qualifications of CONTRACTOR's testing agency.
 - b. CONTRACTOR has a quality control plan similar to AASHTO R 9.
 - c. Test results are submitted promptly.
 - d. Acceptance criteria are met.

B. Deleted.

1. Deleted.
2. Deleted.

Table 1 - Deleted

C. Gradation: Lot size is 500 cubic yards. Collect samples from grade prior to compaction. Conduct at least 1 gradation test for each Lot. Material not within

tolerance may remain in-place at ENGINEER's discretion provided density requirements are met. Tolerance deficiency must be corrected before placement continues.

D. Relative Density: Lot size is 10,000 cubic yards. Conduct at least 1 laboratory determination to be used as a standard for field density and field moisture content determinations.

E. Field Density:

1. Lot size is one days' placement. Number of density tests varies according to placement type and sub-lot size. Conduct at least 1 field determination in each sub-lot. Select test locations randomly.

Table 1 – Placement Type and Sub-lot Size	
<u>Placement Type I</u> Pavement (includes curb, gutter, and waterway when in conjunction with pavement placement)	1,000 square yards
<u>Placement Type II</u> Curb, gutter, waterway Sidewalk Driveway approach, curb cut assembly, waterway transition structure, flatwork	200 Lineal feet 400 lineal feet 800 square feet
<u>Placement Type III</u> Landscaping and other non-structural, non-load bearing areas	--

2.1 UNTREATED BASE COURSE

Page 505

A. Material: Crushed rock, gravel, sand or other high quality mineral particle, or combination that is well graded, clean, hard, tough, durable, sound, free of organic matter, free of chemical or petroleum contamination, and meets the following physical properties.

Table 2 – Properties

Physical Property	ASTM	Class			Units
		A	B	C	
Dry Rodded Unit Weight, min.	C 29	75			lb/ft ³
Liquid Limit, max.	D 4318	25			
Plastic Index, max.	D 4318	0	0	6	
Sand Equivalent, min.	D 2419	35			percent
Wear (hardness), max.	C 131	50			percent
Two Fractured Faces, min.	D 5821	50	-	-	percent
CBR, min.	D 1883	70	55	-	percent

NOTES

(a) Liquid limit, plastic limit, sand equivalent: Passing No. 40 sieve.

(b) Wear: Retained on No. 8 sieve.

(c) Faces: Retained on No. 4 sieve.

(d) CBR: Use a 10 lb surcharge measured at 0.20 inch penetration at 95 percent of modified Proctor. A reduction in aggregate class may be accepted providing any costs for difference in excavation, backfill, and alternate design for CBR does not increase Contract Price.

B. Gradation, ASTM C 136: Graded by dry weight on a percent passing basis. Gradation must not vary from a high limit on one screen to a low limit on the next. Target gradation for each sieve size must lie within the master grading band limits. Field gradation shall not vary from target by more than the target tolerance.

Table 3 – Job Mix Formula

US Sieve Size	Master Grading Band Limits			Target Tolerance Percent
	Grade 1-1/2	Grade 1	Grade 3/4	
1-1/2"	100	-	-	-
1 "	90 – 100	100	-	-
3/4 "	70 – 85	-	100	+/- 9
1/2 "	65 – 80	79 – 91	-	+/- 9
3/8 "	55 – 75	-	78 – 92	+/- 9
No. 4	40 – 65	49 – 61	55 – 67	+/- 7
No. 16	25 – 40	27 – 35	28 – 38	+/- 5
No. 200	7 – 11	7 – 11	7 – 11	+/- 3

NOTES

(a) Percent passing is based on total aggregate (dry weight), and fine and coarse aggregate having approximately the same bulk specific gravities.

(b) Target tolerance for 3/4 sieve in Grade 3/4 is not applicable.

At ENGINEER's option, a change in the job mix formula may require a new material properties report.

2.3 CRUSHED CONCRETE BASE COURSE **Page 506**

A. Meet requirements of this section article 2.1 and the following.

1. Cement with its chemical components is allowed.
2. Wear test and fractured face test not required.

2.4 SOURCE QUALITY CONTROL **Page 506**

A. Sampling Protocol: Random location selection, ASTM D 3665. Sample collection, ASTM D 75.

B. Reject crushed aggregate base products that do not meet requirements of this Section.

C. Testing Protocol: Gradation, ASTM C 136. Maximum density, ASTM D 1557. Optimum moisture content, ASTM D 2216.

3.1 SUB-BASE PREPARATION **Page 506**

A. Trenches, Section 33 05 20.

B. Structures, Section 31 23 23.

C. Landscaping, Section 32 91 19.

D. Pavements, Section 32 05 10.

3.2 PLACEMENT **Page 507**

A. General:

1. Provide uniform lifts not exceeding 6 inches thick after compaction.

2. Maintain optimum moisture content plus or minus 2 percent.

3. Use appropriate compaction equipment.

4. Do not place additional material on any unaccepted layer or on any frozen surface.

B. Placement Type and Aggregate Class:

Placement Type	Location	Class		
		A	B	C
I	Pavement (includes curb, gutter and waterway when in conjunction with pavement placement).	X		
II	Concrete flatwork (includes driveway approach, curb cut assembly, curb, gutter, sidewalk, waterway, etc.	X	X	
III	Landscapes (includes non-structural, non-load bearing areas)	X	X	X

C. Compaction:

1. Type I and Type II Placement: 95 percent minimum.
2. Type III Placement: Compaction effort is suitable to overlying surface, or installation, or use. Verify compaction effort with ENGINEER.

D. Finish: Uniform with surface deviation no more than 3/8 of an inch from line and grade in 10 feet in any direction.

3.3 FIELD QUALITY CONTROL

Page 507

A. Deleted.

B. Sampling Protocol: Random location selection, ASTM D 3665. Sample collection, ASTM D 75.

C. Testing Protocol: Gradation, ASTM C 136. Field density, ASTM D 2922. Moisture content, ASTM D 3017.

3.4 REPAIR OR REMOVAL

Page 507

A. If product is correctable and at no additional cost to OWNER, provide laboratory data showing design CBR has not been reduced and material in-place has been compacted to **97 percent** minimum.

B. Remove any product that cannot be corrected and install acceptable product at no additional cost to OWNER

ASPHALT CONCRETE

Section 32 12 05

1.4 SUBMITTALS

Page 515

B. Mix Design: Submit.

4. Paving asphalt target percentage, dust to asphalt ratio, moisture sensitivity (tensile strength ratio), stability, flow and voids in the bituminous mix.

1.6 ACCEPTANCE

Page 515

C. Materials:

2. At the Site:

- a. One sub-lot is 500 tons.
- b. Sampling: One random sample per sub-lot. Location as follows,
 - 1) Behind paver before compaction, or
 - 2) Where sub-lot exhibits non-uniform appearance.
- c. Sampling Protocol: ASTM D 3665 and ASTM D 979.

2.1 PAVING ASPHALT

Page 517

A. Asphalt Cement: Section 32 12 03. Substitutes for asphalt cement are as follows.

AC10	PG58-22 or PG58-28
AC 20	PG64-22

2.4 MIX DESIGN

Page 518

A. Selection of Materials:

1. Paving Asphalt, Section 32 12 03:

- Light Traffic Classification: AC-10 or AC-20.
- Medium Traffic Classification: AC-20.
- Heavy Traffic Classification: ENGINEER'S choice.
- RA: For hot-laid recycled asphalt pavement: Choice by CONTRACTOR.

2. Aggregate: This section article 2.2.

3. Admixture: This Section article 2.3.

- RAP: Adjust paving asphalt grade to account for RAP binder viscosity.
- Cement or Hydrated Lime: Add if mix is moisture sensitive.

2.4 MIX DESIGN

Page 519

C. Deleted

- Deleted.
- Deleted.

D. Selection of Mix Properties: Use Marshall volumetric mix design, AI MS-2.

Table 3 – Stability, Flow, Voids Limits.			
Number of compaction blows each end of specimen	35	50	75

2.4 MIX DESIGN

Page 520

3. Moisture sensitivity (tensile strength ratio) ASTM D 4867: 0.80 or greater using freeze-thaw conditioning and test specimen compacted at 7 percent plus or minus 1 percent air voids.

4. Deleted.

3.1 INSTALLATION

Page 520

A. Pavement placement, Section 32 12 16.

B. Pavement restoration, Section 33 05 25.

SUPERPAVE
Section 32 12 06

1.4 SUBMITTALS

Page 522

B. Mix Design: Submit.

3. Aggregate gradation target.
4. Temperature of mix at plant and in the field for optimum field compaction.
5. Paving asphalt target percentage, dust to asphalt ratio, moisture sensitivity (tensile strength ratio), voids in the mineral aggregate (VMA) and voids filled with asphalt (VFA).

1.6 ACCEPTANCE

Page 523

C. Materials:

2. At the Site:

- b. Sampling: One random sample per sub-lot.
Location as follows.
 - 1) Behind paver before compaction, or
 - 2) Where sub-lot exhibits non-uniform appearance.
- c. Sampling Protocol: ASTM D 3665 and ASTM D 979.

2.4 MIX DESIGN

Page 526

A. Selection of Materials:

3. Admixture: This section article 2.3.
 - a. RAP: Adjust pavement asphalt grade to account for RAP binder viscosity.
 - b. Cement or Hydrated Lime: Add if mix is moisture sensitive.

B. Selection of Design Aggregate Structure.

1. Gradation: Maximum particle size is 1/4 compacted lift thickness.
 - a. Target Gradation Curve must lie within one of the Master Grading Bands in the following table. It must lie below the restricted zone if ESAL is 30 million or more, otherwise it may lie above, below, or pass through the zone.

2.4 MIX DESIGN

Page 527

C. Deleted

1. Deleted.
2. Deleted.

D. Selection of Mix Properties: Use Superpave volumetric mix design, AI SP-2.

1. Compaction:

Table 4 – Compaction Parameters

NOTES

(d) 20 year design ESALs defined as follows.

- Less than 0.3 = Very light traffic (local / county roads; city streets where truck traffic is prohibited)
- 0.3 to 3 = Medium traffic (collector roads; most county roadways)
- 3 to 30 = Medium to high traffic (city streets, state routes; US highways; some rural interstates)
- 30 or more = High traffic (most of the interstate system; climbing lanes; truck weighing stations)

2.4 MIX DESIGN

Page 528

5. Moisture sensitivity (tensile strength ratio) ASTM D 4867: 0.80 or greater using freeze-thaw conditioning and test specimen compacted at 7 percent plus or minus 1 percent air voids.

6. Deleted.

3.1 INSTALLATION

Page 529

A. Pavement placement, Section 32 12 16.

B. Pavement restoration, Section 33 05 25.

PLANT-MIX – ASPHALT PAVING

Section 32 12 16

1.7 ACCEPTANCE

Pages 536 & 537

A. General:

1. Acceptance is by Lot.
2. Observation of CONTRACTOR's field quality control testing does not constitute acceptance. Such testing; however, may be used by ENGINEER for acceptance providing the following conditions are met.
 - a. ENGINEER accepts qualifications of CONTRACTOR's testing agency.
 - b. CONTRACTOR has a quality control plan similar to AASHTO R 9.
 - c. Test results are submitted promptly.
 - d. Acceptance criteria are met.
3. If non-complying material has been installed and no price for the material is specified, apply price adjustment against cost of work requiring material as part of its installation. Section 01 29 00.
4. Dispute resolution, Section 01 35 10.
5. Opening a paved surface to traffic does not constitute acceptance.

- B. Mix: Accepted as specified in Section 32 12 05, or Section 32 12 06 .
- C. Mix Temperature at Site:
1. Reject mixes exceeding 325 deg F. in transport vehicle.
 2. Dispose of cold mix in paver hopper as thin spread underlay.
- D. Grade, Cross Slope: Verify tolerances are not exceeded.
- E. Compaction: Basis for acceptance is core density, non-destructive density, or control strip density with visual observation. Use core density unless specified otherwise.
1. **Core Density:** This method compares the average density of cores extracted from a pavement surface to maximum theoretical density.
 - a. Lot: 1,000 square yards or part thereof. A Lot is acceptable if average core density does not exceed pay factor 1.00 limits.

Table 1 – Compaction Pay Factors		
Pay Factor	Density, in Percent Relative to ASTM D 2041	
	Average	Lowest Test
0.70	More than 96	–
1.00	92 to 96	89 or greater
0.90	92 to 96	Less than 89
0.80	Less than 92	89 or greater
Reject	Less than 92	Less than 89

NOTES

(a) ENGINEER may accept a Lot in Reject at 50 percent cost; or at a pay factor cost recommended by an Independent Testing Agency.

- b. Sampling Protocol: ASTM D 3665 for random test location selection with at least 2 test locations per Lot. ASTM D 5361 for collection and 3 core samples per test location. Samples are full depth or overlay depth in overlay construction.
 - c. Testing Protocol: ASTM D 2725 for core density and ASTM D 2041 (Rice) for maximum theoretical density.
2. **Non-Destructive Density Testing by Gage:**
 - a. Lot: One days' production with 1,000 square yard

sub-lots. A Lot is acceptable when density does not exceed pay factor 1.00 limits in Table 1.

- b. Sampling Protocol: ASTM D 3665 for random test location selection with at least 1 test location per Lot.
- c. Testing Protocol: ASTM D 2950 (nuclear gage) or AASHTO TP 68 (Non-nuclear gage) and ASTM D 2041 for maximum theoretical density.

3. Control Strip:

- a. Lot: One days' production.
- b. Sampling Protocol: Not required after rolling pattern is determined.
- c. Testing Protocol: ASTM D 5581 and D 2041 to determine rolling pattern for 94 percent compaction, thereafter visual examination.

F. Roughness: Verify "must grind" bumps are removed and tolerance for profile roughness index is not exceeded.

G. Thickness:

- 1. Lot Size: 1,000 square yards or part thereof.
- 2. Sampling Protocol: ASTM D 3665 and ASTM D 5361 with at least 2 test locations per Lot and 3 core samples per test location. Samples are full depth. Thickness not measured in overlay construction.
- 3. Testing Protocol: ASTM D 3549.
- 4. Minimum Specified Thickness: A Lot specified to have minimum thickness will be accepted if all measurements meet or exceed minimum. If thickness is deficient, additional material may be placed over the Lot if there is no asphalt feathering; placement matches this section's thickness tolerance; surface continues to drain; and ride quality tolerance is met.
- 5. Actual Specified Thickness: A Lot specified to have actual thickness is acceptable if average measurement does not exceed deficiency limits for thickness pay factor 1.00.

Table 3 – Pay Factors	
Thickness Pay Factor	Deficiency Limits, in Inches
1.00	0.00 to 0.375
0.90	0.376 to 0.50
0.70	0.51 to 0.75
Reject	0.76 to 1.00
NOTES	
(a) ENGINEER may accept a Lot in Reject at 50 percent cost; or at a pay factor cost recommended by an Independent Testing Agency.	

1.8 WARRANTY Page 537

A. Joints at Street Fixtures: If 1/2 inch or wider before end of one year Correction Period, seal joints with asphalt rubber or rubberized asphalt per Section 32 01 17.

3.2 PREPARATION Page 538

E. Deleted.

3.6 TOLERANCES Page 540

A. Compaction: Refer to this section article 1.7.

B. Lift thickness:

3. Not more than limits established by pneumatic or vibratory compactor equipment manufacturer.

E. Roughness:

Table 4 – Roughness Tolerance							
Speed mph	Traffic Class		Profile Roughness Index (PRI) Inches / Mile				Profile Deviation Inches/25 feet Maximum
	AC	Superpave	IRI		PI		
			Min	Max	Min	Max	
0 to 29	I or II	< 0.3	-	-	-	-	0.4
	III or IV	0.3 to <3	129	177	46	66	0.4
30 to 44	I or II	0.3 to <3	90	155	35	50	0.4
	III or IV	3 to 30	70	90	21	35	0.4
45 +	All Classes	30 or More	-	70	-	21	0.3

NOTES

(a) Use a zero blanking band.

(b) As a minimum, trace right wheel path in direction of travel

(c) Traffic class is defined in Section 32 12 05 and Section 32 12 06.

(d) IRI (International Roughness Index), ASTM E 950

(e) PI (Profile Index), ASTM E 1274.

COLD MIX – ASPHALT PAVING

Section 32 12 17

- 1.3 SUBMITTALS** **Page 543**
C. Batch Delivery Tickets: Submit ticket for each batch delivered to the Work site. Include information specified in Section 32 12 16.
- 1.4 WEATHER** **Page 543**
A. Section 32 12 16.
- 1.5 NOTICE** **Page 543**
A. Section 32 12 16
- 1.6 ACCEPTANCE** **Page 543**
A. Section 32 12 16
- 3.1 CONSTRUCTION EQUIPMENT** **Page 544**
A. Lay-down Machine: Use track equipment when operating on fabrics or geogrid.
- 3.7 TOLERANCES** **Page 546**
A. Section 32 12 16.
- 3.8 PROTECTION AND REPAIR** **Page 546**
A. Section 32 12 16.

CONCRETE PAVING

Section 32 13 13

3.8 TOLERANCES

Page 555

D. Roughness:

Table 4 – Roughness Tolerance							
Speed mph	Traffic Class		Profile Roughness Index (PRI) Inches / Mile				Profile Deviation Inches/25 feet Maximum
	AC	Superpave	IRI		PI		
			Min	Max	Min	Max	
0 to 29	I or II	< 0.3	-	-	-	-	0.4
	III or IV	0.3 to < 3	129	177	46	66	0.4
30 to 44	I or II	0.3 to < 3	90	155	35	50	0.4
	III or IV	3 to 30	70	90	21	35	0.4
45 +	All Classes	30 or More	-	70	-	21	0.3

NOTES

(a) Use a zero blanking band.

(b) As a minimum, trace right wheel path in direction of travel

(c) Traffic class is defined in Section 32 12 05 and Section 32 12 06.

(d) IRI (International Roughness Index), ASTM E 950

(e) PI (Profile Index), ASTM E 1274.

E. Dowel Bar:

1. Skew is 0.375 inches per 12 inches (3 percent) in the horizontal and vertical planes.
2. Embedment is 6 inches minimum.
3. Position in slab is center plus or minus 1/2 inch.

3.10 PROTECTION AND REPAIR

Page 556

C. Repair: Section 03 30 10.

1. Corrective Action for “Must Grinds”: Grinding per Section 02 41 14 is acceptable after concrete cure. Apply a water repelling product, Section 07 19 00 over planed surfaces.
2. Corrective Action for Profile Roughness Index: Grinding is acceptable. Re-profile corrected segments to verify ride index meets tolerance. Apply a water repelling product, Section 07 19 00 over planed surfaces.

CONCRETE PAVING JOINT SEALANTS

Section 32 13 73

2.7 JOINT SEALANT – COLD-APPLIED. Page 560

A. **CAS-1:** Elastomeric type, ASTM C 920. Chemically curing, for vehicular or pedestrian use, and types of construction other than highway and airfield Pavements and bridges and joint substrates indicated; Type S or M; Grade P or NS; Class 25; Use T, NT, M and O.

1. Self leveling.
2. Shore A Hardness, ASTM D 2240: 40 plus or minus 5.

PRECAST CONCRETE UNIT PAVING

Section 32 14 13

3.2 PREPARATION Page 566

B. Installation over soil base.

2. Compact to 95 percent or greater of Modified Proctor Density, Section 31 23 26.

LANDSCAPE GRADING

Section 32 91 19

3.7 COMPACTION Page 614

A. Section 31 23 26

BACKFILLING TRENCHES

Section 33 05 20

1.8 ACCEPTANCE Page 670

Table 1: Lot Size for Trench Backfilling Operation
NOTES (a) Proctor density, Section 31 23 26.

3.6 COMPACTION Page 673

A. Section 31 23 26.

PAVEMENT RESTORATION

Section 33 05 25

3.2 AGGREGATE BASE OR FLOWABLE FILL BASE Page 681

B. Place crushed aggregate base in lifts not exceeding 8 inches before compaction. Compact to 95 percent or greater. Modified Proctor Density, Section 31 23 26.

- 3.6 PORTLAND CEMENT CONCRETE PATCH** **Page 682**
A. Full Depth restorations:
4. Do not allow traffic on the repaired area until concrete has achieved 3,000 psi compressive or 400 psi flexure strength.

SANITARY SEWERAGE SYSTEMS

Section 33 31 00

- 3.1 PREPARATION** **Page 712**
B. Hand trim Excavations to required elevations. Backfill over excavations and compact, Section 31 23 26.
- 3.8 BACKFILLING** **Page 714**
C. Structures, Section 31 23 23.
D. Landscapes, Section 32 91 19

STORM DRAINAGE SYSTEMS

Section 33 41 00

- 3.1 PREPARATION** **Page 717**
B. Hand-trim Excavations to required elevations. Backfill over excavations and compact, Section 31 23 26.
- 3.8 BACKFILLING** **Page 718**
C. Structures, Section 31 23 23.
D. Landscapes, Section 32 91 19.

PONDS

Section 33 47 00

- 3.1 CONSTRUCTION** **Page 720**
C. Subgrade: Scarify top 12 inches and compact to 92 percent minimum, Standard Proctor Density, Section 31 23 26.

ELECTRICAL UTILITY SERVICES

Section 33 71 73

- 3.2 INSTALLATION** **Page 722**
D. Install on undisturbed soil where possible. Backfill and compact, Section 31 23 26.

END OF DOCUMENT

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