

DIVISION 32 – EXTERIOR IMPROVEMENTS
SECTION 32 12 00 – FLEXIBLE PAVING AND SURFACING

PART 1 – GENERAL

1.01 SUMMARY

- A. Section Includes:
1. Paving Surfacing.
 2. Driveway/Parking Lot Surfacing.
 3. Concrete Curbing

1.02 REFERENCES

- A. The "PennDOT Sections" noted herein refer to sections contained in the current Commonwealth of Pennsylvania Department of Transportation Specifications Publication 408, as supplemented or revised. The references pertain only to materials, construction, equipment, methods and labor. The payment provisions do not apply to work to be performed under this Contract.
- B. Commonwealth of Pennsylvania Department of Transportation Specifications Publication 408, latest edition.
1. PennDOT Section 210 – Subgrade.
 2. PennDOT Section 212 – Geotextiles.
 3. PennDOT Section 305 – Bituminous Concrete Base Course.
 4. PennDOT Section 309 – Superpave Asphalt Mixture Design, HMA Base Course (Standard).
 5. PennDOT Section 350 – Subbase.
 6. PennDOT Section 401 – Conventional Mixture Design, Standard and RPS Construction of Plant-Mixed HMA Courses.
 7. PennDOT Section 409 – Superpave Mixture Design, Standard and RPS Construction of Plant-Mixed HMA Courses.
 8. PennDOT Section 460 – Bituminous Tack Coat.
 9. PennDOT Section 470 – Bituminous Seal Coat.

10. PennDOT Section 480 – Bituminous Surface Treatment.
 11. PennDOT Section 491 – Milling of Bituminous Pavement Surface.
 12. PENNDOT Section 630 Plain Cement Concrete Curb.
 13. PennDOT Section 703 – Aggregates.
 14. PennDOT Section 704 – Cement Concrete.
 15. PennDOT Section 735 – Geotextiles.
 16. PennDOT Section 962 – Waterborne Pavement Markings.
- C. Commonwealth of Pennsylvania Department of Transportation Bulletin 25.
- D. Commonwealth of Pennsylvania Department of Transportation Bulletin 27.
- E. Commonwealth of Pennsylvania, Pennsylvania Code, Title 67, Transportation, Department of Transportation, Chapter 459, Occupancy of Highways by Utilities, as supplemented or revised.
- F. Commonwealth of Pennsylvania, Pennsylvania Code, Title 67, Transportation, Department of Transportation, Chapter 213, Temporary Traffic Control Guidelines, latest edition (PennDOT Chapter 213).

1.03 DEFINITIONS

- A. Street: Unless otherwise specifically qualified herein, the term "Street" as used in this Section shall be understood to mean a street, highway, avenue, boulevard, road, alley, lane, driveway, parking lot, or any other area used as a way for vehicles.

1.04 SUBMITTALS

- A. Submit in accordance with Section 01 33 00.
- B. Product Data: Submit data identifying materials proposed for use.
- C. Certificates: Furnish current certification from bituminous and aggregate producer attesting that materials conform to requirements of PennDOT Specifications.
- D. Material Slips: Furnish certification of the amount of materials utilized from the producer in accordance with PennDOT specifications.

1.05 QUALITY ASSURANCE

- A. Source Quality Control:

1. Use materials conforming to PennDOT Publication 408, latest edition and supplementary bulletins thereto.
 2. The quality of the work shall be maintained by using the products of a qualified bituminous concrete producer and qualified plant operating workmen.
 3. The bituminous concrete producer shall be a bulk producer regularly engaged in production of hot-mix, hot-laid bituminous concrete conforming to the standards referenced herein.
- B. Workmen Qualifications:
1. Provide at least one person thoroughly trained and experienced in the skills required who readily understands the design and is completely familiar with the application of bituminous concrete paving work. Said person shall be present at all times during progress of bituminous concrete paving work and shall direct the performance of said work.
 2. For actual finishing of bituminous concrete surfaces and operation of the equipment, use only personnel thoroughly trained and experienced in the skills required.
- C. Requirements of Regulatory Agencies:
1. Removal, protection and replacement of paving on State Highways must be performed in accordance with the requirements of the Commonwealth of Pennsylvania, Pennsylvania Code, Title 67, Transportation, Department of Transportation, Chapter 459, Occupancy of Highways By Utilities, latest edition.
 2. Removal, protection and replacement of paving on roadways other than state highways must be performed in accordance with the requirements of the municipality in which the work is performed. The Contractor is responsible to meet the requirements of all permits and approvals from the municipality.
 3. Employ traffic control measures in accordance with PennDOT, Title 67, Chapter 213.

1.06 PROJECT/SITE CONDITIONS

- A. Protection:
1. Protect paved surfaces outside of the pavement removal limits as indicated on Pavement Restoration Details in Contract Drawings. Repair pavement outside removal limits damaged by construction operations to PennDOT or Township specifications at no additional expense to Owner.
 2. Use all means necessary to protect and maintain pavement materials before, during, and after installation. Protect installed work and materials of all other contractors.

- B. Environmental Requirements:
1. Do not install aggregate courses when ambient temperature is below or is expected to fall below freezing.
 2. Do not use aggregate containing frost nor place aggregate courses on frozen subgrade.
 3. Terminate placement of bituminous mixtures or courses between October 31, and do not resume placement prior to April 15. Placement of bituminous mixtures or courses between the dates referenced above requires prior approval.
 4. Do not place bituminous paving mixtures or courses when surfaces are wet or when the temperature of either air or the surface on which the mixture or course is to be placed is 40 Deg F or lower. When work is halted because of weather conditions, limited quantities en route to the project may be placed, if permitted by the Engineer.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Bituminous Materials:
1. Asphalt Cement: PG 64 – 22 conforming to PennDOT Bulletin 25.
 2. Asphalt Rubber Sealing Compound: Conforming to PennDOT Bulletin 25.
 3. Superpave Asphalt Mixture Design: HMA Base Course, Conforming to PennDOT Section 309. HMA Binder Course and HMA Wearing Course Conforming to PENNDOT Section 409.
 4. Bituminous Tack Coat: Class E-1, E-6 or E-8 emulsified asphalt conforming to PennDOT Bulletin 25.
 5. Bituminous Surface Treatment: Two (2) applications of bituminous material each followed by application of coarse aggregate conforming to PennDOT Section 480.
 6. Bituminous Seal Coat: Single application of bituminous materials followed by application of aggregate conforming to PennDOT Section 470.
- B. Aggregate Base/Subbase: Type C or better, No. 2A, Section 703.2, placement per Section 350.
- C. Traffic Paint - State Highways and Township Roads: Conforming to PennDOT Section 962.
- D. Cement Concrete:

1. Curbs, gutters, and sidewalks: 3,000 PSI 28-day compressive strength as specified for Class A Concrete in PennDOT Section 704.
 2. Collars and driveways: 3,500 PSI 28-day compressive strength as specified for Class AA Concrete in PennDOT Section 704.
- E. Select Granular Material: Select Granular Material (2RC) conforming to PennDOT Section 703.3.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify that backfill to surfacing subgrade as required by the regulating agency has been properly completed.

3.02 PREPARATION

- A. Materials and thicknesses shall, at a minimum, match existing, unless otherwise directed in writing by the respective regulating agency (e.g, PennDOT, Township, etc.).
- B. Existing Pavement Removal:
1. Municipal and Private Pavement
 - a. Sawdust existing pavement using a mechanical saw to neat lines equidistant from the centerline of the trench.
 - b. Remove pavement to width equal to maximum excavated trench width plus not less than one foot on each side of the trench. If pavement is removed or disturbed for a greater width without written authorization of the Authority, the Contractor will be required to replace such pavement without compensation.
- C. Manhole Covers and Valve Boxes:
1. Ensure that manhole covers and valve boxes to be within the paved surface are at the correct finished elevation and slope.
 2. Coordinate the raising of all valve boxes and manhole covers owned by other utilities in accordance with the respective utilities requirements.
 3. Comply with requirements of Section 33 39 13 for manhole cover adjustment.

3.03 INSTALLATION

- A. General: Restore streets, driveways, parking areas and other areas according to details, existing conditions, or as required by the regulating agency.

B. Temporary Surfacing:

1. In the event the permanent pavement cannot be placed due to the weather limitations set forth herein for placing bituminous material for the permanent base and surface courses, provide a temporary surface. The temporary surface shall consist of compacted select granular material with a surface of 2-inch bituminous material. If the existing pavement structure includes a course of subbase material, it shall be replaced to a depth equal to the existing course depth with material meeting the requirements of Section 350.2 of Publication 408. The Contractor shall be responsible for the maintenance and protection of all temporary surfacing, as well as manholes, frame and covers, and other facilities or structures located within the areas of the temporary surfacing until such time as that the permanent pavement or surface can be placed. Permanent surfacing must be placed no later than thirty (30) days following the placement of temporary surfacing. In the event that environmental conditions do not allow for placement of permanent surfacing within the thirty days specified, permanent surfacing must be placed as soon as conditions allow.
2. Prior to placement of final surfacing, the Contractor, Authority, and Engineer shall inspect all areas to be restored. The Contractor shall be responsible for any replacement of material, regrading, or addition of material deemed necessary by the Engineer in any areas found to be unacceptable for receipt of final surfacing.
3. Contractor shall be responsible for the removal and disposal of the temporary surfacing to the grade required for the placement of the final sub-base, base, and surface at the specified depths.
4. The Contractor shall be responsible for any necessary adjustments to grade for manholes, frame and covers, and other facilities or structures prior to final surfacing.
5. Temporary surfacing shall be placed where directed by the Engineer.

C. Paved Surfaces:

1. Superpave Asphalt Mixture Design: HMA 25 mm Base Course. Construct in accordance with PennDOT Section 309.
 - a. Install the HMA Base Course with the top surface below the surface of the adjacent pavement a distance equal to the thickness of the HMA Wearing Course.
2. Superpave Asphalt Mixture Design: HMA 9.5 mm Wearing Course. Construct in accordance with PennDOT Section 409.
 - a. Install HMA Wearing Course at the required thickness and with the top surface flush with the surface of the adjacent undisturbed pavement.
3. Aggregate Base/Subbase: Construct and place in accordance with the requirements of PennDOT Section 350.

- a. Install on prepared subgrade as specified in this Project Manual and in PennDOT Section 210.
 - b. Install sub-base to underside of base course as specified in this Project Manual.
 - 4. Bituminous Tack Coat: Apply according to PennDOT Section 460.
 - 5. Asphalt Rubber Sealing Compound: Apply according to PennDOT Bulletin 25. All joints between the new paving and the existing paving and where the new paving abuts other materials such as curbs, manhole frames, valve boxes, inlets, etc. shall be sealed. Width shall be 12 inches for pavement joints and where curb acts as a gutter. Other shall be six (6) inches.
 - 6. Roadway Traffic Lines and Markings: Apply in accordance with PennDOT Section 962. Provide satisfactory barrier cones for at least 30 minutes, or until the paint is dry and track free from vehicular traffic. Repaint marked or damaged areas.
- D. Unimproved Surfaces:
- 1. Restore earth surfaces to original condition.

3.04 BITUMINOUS DRIVEWAYS AND SIDEWALK RESTORATION

- A. The materials and construction practices shall be as specified.
- B. Aggregate base shall be as specified using six (6) inch depth.
- C. Base course shall be four (4) inch depth (minimum) and wearing course shall be a minimum 1-1/2" depth or match existing.

3.05 CONCRETE DRIVEWAY AND SIDEWALK RESTORATION

- A. Restore driveways and sidewalks damaged by construction to match existing grade and finish.
- B. Saw cut and reconstruct driveways and sidewalks to the first expansion joint on either side of the damaged portion, or to a greater width if indicated in on the Drawings.
- C. Saw cut and reconstruct sidewalks to 4" thickness of concrete reinforced with 6 x 6 x w 1.4 /w1/4 wire mesh, placed on 4" base of compacted PENNDOT 2B.
- D. Saw cut and reconstruct driveways to 6" thickness of concrete reinforced with 6 x 6 x w 1.4 /w1/4 wire mesh, placed on 4" base of compacted PENNDOT 2B.

3.06 CONCRETE CURB RESTORATION

- A. Restore curbs damaged by construction to match existing shape and finish.

- B. Saw cut and reconstruct curbs to the first expansion joint on either side of the damaged portion or to a greater width if indicated in on the Drawings.
- C. Construct in accordance with PENNDOT Publication 408, latest edition.
- D. Aggregate backfill is required.

3.07 CLEAN-UP

- A. During construction, surfaces of all areas including, but not limited to, roads, streets, and driveways shall be maintained on a daily basis to produce a safe, desirable, and convenient condition.
 - 1. Streets shall be swept and flushed after backfilling, and re-cleaned as dust, mud, stones and debris caused by the work, or related to the work again accumulates.
 - 2. Failure of the Contractor to perform this work shall be cause for the Authority to order the work to be done by others, and backcharge all costs to the Contractor.
- B. Repair or Correction of Unsatisfactory Conditions: All unsatisfactory conditions resulting from the work shall be corrected.
- C. Dust Control: Provide effective dust control by sprinkling water, by the use of calcium chloride or by any other methods approved by the Authority. Use dust control measures where, when and in a manner required by the Authority.

3.08 MAINTENANCE

- A. Continuously maintain temporary paving without additional compensation until it is replaced with permanent paving.
- B. Maintain without additional compensation, such work of this Section done under this Contract for a period of twenty-four (24) months after the date of Authority's approval of the final Completion Certificate issued by Engineer, including the repair or removal and replacement of such work which has failed or has been damaged or wherever surface depressions have been developed. Materials and methods used to repair or replace such work shall conform to the applicable requirements of this Section.
- C. Should Contractor fail to perform required maintenance or repairs within three days after written notice from the Authority, the Authority may perform such maintenance or repairs and deduct the cost thereof from any monies due or to become due Contractor.

END OF SECTION