Section 2213. Base Widening

2213.01 DESCRIPTION.

Excavate shoulder material, remove existing curb and flumes, and construct widened portions of base prior to placement of a surface course, seal coat, or another base course as a part of the contract.

2213.02 MATERIALS.

Use materials meeting the following requirements:

A. Base Material.

1. HMA Base Widening.
- **a.** Use mixture specified on the contract documents.
- **b.** Meet requirements of Section 2303, as specified.

2. PCC Base Widening.
Apply Article 2201.03.

B. Primer or Tack Coat Bitumen.
Apply Article 2303.02, E.

2213.03 CONSTRUCTION.

A. Equipment, General.
Use equipment meeting requirements of Sections 2001, 2301, 2302, and 2303.

B. Widening Equipment.
Use widening equipment that complies with Section 2001 and the following:

1. Trench Machine.
Use a machine which can be operated in a manner so that the depth and width can be accurately controlled.

2. Compaction Equipment.
- **a.** Apply Article 2001.05, E, except that other types of equipment may be used when it has been demonstrated that required compaction will be secured.
- **b.** On subgrade and the final layer of widening, use a self propelled finish roller that is smooth and steel wheeled.

C. Removal of Curb.

1. When specified in the contract documents or directed by the Engineer, remove integral curb by methods which will not damage the concrete that is to remain.

2. Remove curb by grinding (or other methods approved by the Engineer) to provide complete removal of curb extending above the pavement surface and a safe and smooth surface to accommodate traffic. Other curb removal methods may include sawing and breaking, or chipping. If

removal is done by sawing and breaking, complete the work as shown in the contract documents and as follows:

a. Make a vertical saw cut along the edge of the curb nearest the center line of pavement.

b. At the end of the curb section, extend the saw cut to the extreme end of the curb.

c. At this point, make a saw cut at a right angle extending to the pavement edge.

d. Where flumes occur in curb sections, extend the saw cut across the throat of the flume.

e. On resurfaced pavement, locate the saw cut 7 1/2 inches (190 mm) from the pavement edge. Cut to a depth of 3 inches (75 mm) below the surface of the resurfacing.

f. Immediately before breaking the curb, clean the sawed groove and ensure it is free of dirt, stones, or foreign matter to a depth of at least 1 inch (25 mm) below the pavement surface.

g. Remove concrete (including resurfacing concrete and concrete across the throats of flumes) to comply with the dimensions shown. Cut off loosened and exposed reinforcement.

3. Clean up broken concrete according to Article 1104.08. This broken concrete becomes the property of the Contractor.

D. Removal of Flumes.

Remove flumes according to Section 2514.

E. Preparation of Subgrade.

Prepare subgrade for base widening according to Article 2302.03, D, with the following exceptions:

1. Cut the trench to the width of the widening shown in the contract documents. If the existing pavement is HMA, saw or trim the edge of existing asphalt (if any) to a vertical line flush with the edge of the existing concrete. At the Contractors option, this trim line may be made at any uniform distance in from the edge of the existing concrete, but not to exceed 3 inches (75 mm).

2. For HMA base widening, tack coat the edge of the old pavement at a rate of 0.10 to 0.15 gallon per square yard (0.4 to 0.7 L/m^2) according to Article 2303.03, C, 2, b. A waiting period will not be required before placing the widening.

F. Base Widening Construction.

The contract documents will show the total thickness of base widening to be placed.

1. HMA Base Widening.

a. Limit the compacted thickness of the top layer to no more than 2 inches (50 mm). The maximum thickness of lower layers may exceed 3 inches (80 mm) if the Contractor demonstrates the thicker layers have compaction and riding characteristics within conformance to that expected from a 3 inch (80 mm) thick layer.

Avoid dumping base material on the surface of the pavement. Immediately remove, by brooming, base material spilled on pavement.

b. Spread base material so that after compaction, the constructed width conforms to the design dimension.

c. Promptly and thoroughly compact each layer. Compact to the density specified in Article 2303.03, C, 5, for Class I compaction.

d. The percent of compaction will be based on the laboratory density obtained for that day's mixture.

e. Succeeding layers of base material may be placed as soon as the previous layer has been compacted. Take density samples from the compacted material and test according to Article 2303.03, D.

f. When the contract for base widening does not include resurfacing, ensure the final surface of the widening is flush with, or not more than 1/8 inch (3 mm) below, the surface of the old pavement.

g. Do not open the widening to traffic until it has cooled sufficiently to provide stability.

2. PCC Base Widening.

Prepare PCC base widening according to Article 2302.03, E, and the following exceptions:

a. Concrete Filler.

1) Clean depressed areas from which the curb has been removed. Clean using a stream of water or air under sufficient pressure to remove loose and foreign matter from the groove.

2) Fill with PCC of the same composition as the concrete used for widening. Immediately before concrete is placed, sprinkle the concrete surface with water and cover with a thin layer of dry Portland cement thoroughly broomed into the surface. Place the filler at the same time the adjacent widening is placed. Thoroughly tamp the concrete for the filler into place.

3) Finish and cure the filler in the same manner as for the widening.

b. Curing.

If asphalt surface is a part of the contract, a dark colored curing compound may be used.

c. Joint.

Joints need not be sealed for PCC base widening.

G. Limitations of Operations.

1. When full depth repair patches are part of the contract, complete this work before base widening is placed.

2. Unless the road is closed, perform base widening construction on one side of the pavement at a time. Open widening to traffic on one side before removing the curb on the opposite side.

3. Allow traffic to use the pavement during construction operations. Conduct operations to minimize inconvenience to traffic.

4. Apply Articles 1107.08, 1107.09, and 2303.03, C, 4.

H. Maintenance of Base.
Maintain the completed base widening prior to and during subsequent construction activities.

I. Winter Seal.

1. Prime HMA base which is not covered with upper base or surface in the same construction season in which it is built. The Engineer may require an application of a winter seal consisting of:

- The bituminous material used as the primer or tack coat applied at 0.12 gallon per square yard (0.5 L/m^2), and
- A sand cover applied at 10 to 15 pounds per square yard (5 kg/m^2 to 8 kg/m^2), according to Section 2307.

2. Winter seal that the Engineer requires will be paid for as provided in Article 1109.03, B.

3. Except where road closure is provided in the contract documents, traffic will be allowed to use the road from the time construction is stopped until work is resumed the following season. Make required repairs to the base when construction is resumed, at no additional cost to the Contracting Authority.

J. Rebuilding Shoulders.
Apply Article 2302.03, F.

K. Samples.
Apply Article 2303.03, D, 5, c.

2213.04 METHOD OF MEASUREMENT.

Measurement will be as follows:

A. Removal of Curb.
Stations (meters) to the nearest foot (meter) shown in the contract documents.

B. Removal of Flumes.
Shown in the contract documents.

C. Excavation, Class 13, for Widening.
Shown in the contract documents.

D. Base Widening.

1. Hot Mix Asphalt Base Widening.

a. Measurement by Weight (Mass).
Determined according to Article 2303.04, A, 2.

b. Measurement by Area.
Determined according to Article 2303.04, A, 3.

2. Portland Cement Concrete Base Widening.
Shown in the contract documents for the depth specified.

E. Asphalt Binder.
Article 2303.04, B, applies when HMA is measured by weight.

F. Primer or Tack Coat Bitumen.
Will not be measured separately.

G. Samples.
Article 2303.04, H, applies for HMA base widening.

2213.05 BASIS OF PAYMENT.
Payment will be the contract unit price as follows:

A. Removal of Curb.
Per station (meter).

B. Removal of Flumes.
Per unit.

C. Excavation, Class 13, for Widening.

1. Per cubic yard (cubic meter).

2. Payment includes removal of bituminous fragments, boulders, and broken concrete according to Article 1104.08.

D. Base Widening.

1. Hot Mix Asphalt Base Widening.
a. Measurement by Weight (Mass).
According to Article 2303.05.
b. Measurement by Area.
According to Article 2303.05 for the depth specified.

2. Portland Cement Concrete Base Widening.
Per square yard (square meter) for the depth specified.

E. Asphalt Binder.
Article 2303.05, B, applies when HMA is measured by weight.

F. Primer or Tack Coat Bitumen.
Incidental to HMA.

G. Samples.
HMA base widening samples: according to Article 2303.05, H.