

DESIGN AND CONSTRUCTION GUIDELINES AND STANDARDS

DIVISION 32 • EXTERIOR IMPROVEMENTS

32 12 00 • ASPHALT PAVING

SECTION INCLUDES

Roads and Sidewalks

RELATED SECTIONS

03 30 00 Concrete
22 00 00 Plumbing
26 00 00 Electrical
31 00 00 Earthwork
32 30 00 Site Improvements
32 80 00 Site Irrigation
32 90 00 Landscape
33 00 00 Site Utilities

RESEARCH AND INVESTIGATION

Pavement evaluation: Thoroughly examine the site for any and all pavement discrepancies, irregularities, and overall age related and “wear and tear” related deformations and problems such as potholes and alligator cracks.

Also review the existing grading and drainage and design in connections where appropriate

Any and all existing structures, features and obstacles should be located on a topographic plan which will serve as the base plan for the pavement replacement or upgrade.

This topographical plan will also include contour intervals of two (2) feet and spot grades as necessary.

A thorough investigation of soil, subgrade and existing pavement conditions and groundwater levels prior to design will help to determine the methods to be used to upgrade or replace the aging, deteriorated or problematic pavement.

Survey existing curb to see if there is any broken or curb that needs to be reset.

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ROADS & SIDEWALKS

DESIGN

Recommended course thickness for roadways and parking lots:

- 12 inch processed gravel or reclaimed paving base course
- 2 inch binder course
- 1 inch finish course

or:

- 12 inch processed gravel or reclaimed paving base course
- 1-1/2 inch binder course
- 1-1/2 inch finish course

Recommended course thickness for sidewalks:

- 8 inch processed gravel base (No reclaimed material)
- 1-1/2 inch binder course
- 1 inch finish course

Mix designs should be provided as part of the design submittal process during construction. All mixtures delivered to the job site shall be accompanied with a certificate of compliance provided by the asphalt batching plant and countersigned by the paving contractor.

Two finish courses are not acceptable because the materials are too similar and will not adhere.

MATERIALS

Materials must comply with the Standard Specifications for Highways and Bridges, latest edition, of the Department of Public Works of the Commonwealth of Massachusetts. Consult the local DPW to determine whether their requirements are more stringent than state regulations.

Subgrade – subgrade shall be either Type 1, 2, 3, or 4 material in accordance with related specifications.

Sub-base – sub-base shall be type 6 screened gravel material in accordance with related specifications.

Binder Course – binder course shall be Class 1 Bituminous Concrete Base Course Type I-1 per the Massachusetts State Highway Specifications, current edition.

Finish Course – Finish course shall be Class 1 Bituminous Concrete Pavement per the Mass. Highway Specifications, current edition.

Curbs – curbs may be vertical granite or Cape Cod bituminous asphalt. (See figure 1 and 2)

Vertical bituminous curbs will only be permitted in to match existing curbing.

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Pavement Markings – markings may be either painted or composed of thermoplastic and shall be used to delineate on site parking and handicap parking as noted.

Follow manufacturer's recommendations as to when to apply markings.

EXECUTION

Include a tack coat when the binder course has been used as a temporary construction road or when presence of organic material prevents proper adhesion of finish course. Thoroughly sweep and clean or power wash before applying the tack coat.

Construction methods shall conform to those requirements found in the Massachusetts Highway Standard Specifications for Highways and Bridges.

Mixtures delivered to the site will be inspected and shall not possess signs of segregation of ingredients or surface crust. The temperature of the mix delivered to the spreader will be a minimum 250° F. Mixtures stored for any length of time in an asphalt storage silo will not be allowed to be placed on site.

The mixture will be thoroughly compacted using a mechanical drum roller, of sufficient capacity to accomplish the compaction, making a minimum of four (4) passes in each direction over the newly placed hot asphalt mat or until satisfied by the engineer in charge that it has been thoroughly compacted. All material placed shall receive final compaction before nightfall of the day placed, unless artificial light, satisfactory to the engineer, is provided. No mixture will be placed on wet or frozen surfaces or when wind conditions are such that rapid cooling will prevent satisfactory compaction. Mixtures will be placed as follows:

Binder – mid April through mid December, provided all conditions are favorable and approved by the Designer;

Finish – mid May up to Thanksgiving, with the same criteria as above. In no instance will any pavement be placed during the winter.

The density of all compacted completed paving will be 95% of the density obtained from laboratory compaction of a mixture composed of the same materials in like proportions. The Designer will be responsible for providing a testing laboratory experienced in these testing procedures and will provide copies of all lab and field test results to all concerned

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CONSTRUCTION

All streets, sidewalks, gutters, and curbs damaged by the contractor's operations shall be restored to a condition at least equal to that in which they were found immediately prior to the beginning of operations.

Temporary paving will be placed in accordance with the requirements stated above and will be allowed to "weather" over the winter before final, permanent paving is placed. In any case, all structures located within the pavement area, i.e. rims, covers, gate boxes, etc, previously raised will be protected by "ramping up" with a layer of asphalt around each structure.

Prior to placement of final paving, the existing pavement will be inspected and any and all areas that have settled or are in need of repair, will be addressed under the supervision of the Designer and to his overall satisfaction. All loose or damaged material in the existing pavement shall be removed and a leveling course shall be installed at depths and locations as directed by the engineer to fill existing holes and depressions, or to improve roadway crowns.

All surfaces to receive final, new permanent paving shall be dry and thoroughly cleaned of foreign or loose material. A compatible prime or tack coat shall be applied, depending on the condition of the existing surface. All castings and edgestones shall be protected from the tack coat.

Where curbing is present, the new pavement shall be planned so that the curb reveal will be the same prior to and following the placement of permanent paving.

Survey existing curbing to document in the Contract Documents the condition before any work begins. Curbing to be reset shall be carefully removed and stored. Any curbing damaged by the Contractor or lost due to his negligence shall be replaced at his expense.

The contractor shall maintain pavement placed by him under his contract for a period of one year and shall promptly fill all depressions and holes that may occur with similar materials to keep the pavement in a safe and satisfactory condition for traffic.