ASPHALT REPAIR & RESURFACE

GENERAL PARAMETERS

The intent of these specifications is to provide detailed specifications for contractors to follow for parking lot repairs. The property manager or construction manager is required to determine the extent of repairs required on the parking lot. The areas for repairs should be noted on a site map for square footage. This should be attached to the contract.

The bids should include all labor, materials, equipment, debris/trash removal, transportation, services, workmen’s compensation insurance coverage, permits and taxes for completion of work outlined and shall be in accordance with local codes and ordinances.

All bidders need to possess a minimum of five (5) years’ experience in the Cement Treated Base or Asphalt Milling process. All bidders must provide Owner with three (3) references (telephone numbers of the companies the bidder has done Cement Treated Base jobs for in the past five (5) years, and two (2) copies of test results of Cement Treated jobs in the past five (5) years. If bidders plan to subcontract out cement treatment, the subcontractor must furnish sample information required above. Test results shall be D1195 modified.

PRODUCT & INSTALLATION

Cement Treated Base

Grind and pulverize the existing failed asphalt paving (approximate square feet) 8” deep while mixing in 7% Portland Cement or equal with two more grinding 8” deep.

Remove excess material then finish while overlaying the remainder of the property so that the driving surface is smooth.

Leave a 2” gap between parking lot surface and Cement Treated Base to be overlaid and compacted with asphalt material.

Overlay

Clean and prepare surfaces to be overlaid (approximate square feet) apply tack coat then overlay type D HMAC compacted to an average thickness of 1 ½ - 2 inches.

Seal Coat

Clean and prepare area to be sealed, and then apply two coats of coal tar sealer coat or asphalt emulsion, depending on local codes. The first coat shall be applied by machine using squeezers and then the final to be by handheld wand to insure full coverage.

Material used should be Gem Seal, Jennite, or equal.

Restripe

Clean and prepare the paving, then restripe all parking areas and fire lanes as needed to meet city codes. Preference in color is white unless local codes dictate other colors.
INSTALLATION PARAMETERS

General

HMAC Type D Hot Mix will be installed over Cement Treated Base as specified in the State Department of Highways Standard Specifications.

HMAC Type D Hot Mix will be 2” compacted thickness with Tack Coat.

Tack coat will be used around edges of asphalt patching. When curb-to-curb HMAC is installed, the tack coat will be applied to the existing paving or cubs where the asphalt butts up the existing paving.

On overlays-areas to be paved are to be cleaned thoroughly, then install tack coat at the rate of 1/10 of a gallon per square yard. This is to be done in accordance with State Highway Department Specification.

Description

Cement Treated Base shall consist of aggregate, cement, and water uniformly mixed in place, spread, compacted, shaped, finished and cured in accordance with these specifications. It shall conform to the lines, grades, thicknesses and typical cross-section required by the city or Owner.

Cement

Shall be free from substances deleterious to the hardening of the cement treated aggregate.

Water

Shall be free from substances deleterious to the hardening of the cement treated aggregate.

Strength Requirements

May be granular material or combination of aggregates that will, when mixed with adequate amounts of cement and water, achieve 700+ PSI in seven days form final completion as treated by modified ASTM-1195-D

Equipment

Cement Treated Base may be constructed with any combination of machines or equipment that will achieve 2 inches minus on all gradated material.

Preparation

Before other construction operations are started, the area to be paved shall be graded and shaped as required to receive the Cement Treated Base in conformance with grades, lines, thickness and typical cross-section.

The aggregate and cement shall be mixed sufficiently to prevent cement balls from forming when mix water is added.

The mixing time shall be the amount that assures a uniform and intimate mixture of aggregate and cement during mixing operations.
Compaction shall start as soon as possible after mixing and the elapsed time between and addition of water to the Cement Treated Base mixture and the start of compaction shall not exceed 60 minutes.

No Cement Treated Base mixture shall be placed when the sub-grade is frozen or when the air temperature is less than 40 degrees Fahrenheit.

**Finishing**

When initial compaction is nearing completion, the surface of Cement Treated Base shall be shaped to the required lines, grade and cross-section.

The moisture content of the surface material shall be maintained by water cure for seven days or until the HMAC is installed.

Finished portions that are traveled on by equipment used in construction and adjoining section shall be protected in such a manner as to prevent equipment from marring or damaging completed work.

**Construction Joints**

At the end of each day's construction a transverse construction joint shall be formed by cutting back into the completed work to form a full depth vertical face free of loose or shattered material.

**Traffic**

Completed portions of Cement Treated Base may be opened immediately to local traffic and to construction equipment provided curing material or surface is not impaired.

The section may be opened to all traffic after the seven curing period, provided the Cement Treated Base has hardened sufficiently to prevent marring or distorting of the surface by equipment of traffic.

**Maintenance**

The Contractor shall be required, within the limited of his/her contract, to maintain the Cement treated Base in good condition until all work has been completed and accepted.

Maintenance shall include immediate repair of any defects that may occur. This work shall be accomplished by the Contractor at his own expense and repeated as often as necessary to keep area continuously intact and all faulty work corrected as may be required.

Any low areas shall be corrected by replacing the material for the full depth of treatment rather than by adding a thin layer of Cement Treated Base to complete work.

**Testing**

Modified ASTM-1195-+D final and only testing necessary to achieve guaranteed CBR to assure minimum of 700 PSI requirements is shall be reworked at the Contractors expense until this requirement is met.

Process described in specifications does not recommend less than 700 PSI on finished base materials.

**Percentage**

The percentage of cement shall be determined and installed by Contractor to assure these specifications are met at Contractors expense for all testing.
INSPECTIONS PARAMETERS

Inspect all completed Cement Treated Base work prior to final overlay of surface.

Inspect all areas of parking lot to ascertain stable base to complete an overlay on a complete surface.

Be on-site when overlay is installed to ascertain thickness once compacted to be at grade level on repairs or a minimum of 1 1/2” on compacted overlay surfaces.

Seal coats should be completed sixty (60) days after repairs to give repaired surface time to cure.

PRICE RANGES

Volume and Competitive Bidding will influence unit costs. Below are estimates only

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repairs with Cement Treated Base should cost</td>
<td>$2.50 to $3.50 per foot.</td>
</tr>
<tr>
<td>Overlay of minimum 2” should cost</td>
<td>$1.50 per sq. foot.</td>
</tr>
<tr>
<td>Seal Coat Process (2 Coats) should cost</td>
<td>.10 to .12 per sq. foot.</td>
</tr>
<tr>
<td>Restriping should cost</td>
<td>$5.85 to $7.00 per parking stall.</td>
</tr>
</tbody>
</table>
CONCRETE REPAIR & RESURFACE

GENERAL PARAMETERS

Bids shall include all materials, labor, tools, equipment, debris-waste removal/disposal, transportation, service permits, workmen’s compensation insurance coverage and anything also necessary for complete and functional installation of the “work” as described in the attached Scope of Work, drawings, specifications and exhibits, and in accordance with all government standards, codes and ordinances.

Description of Work

Repair or replace damaged concrete sidewalks, patios, breezeways and curbs as quantified in the bid sheet and indicated on the drawings provided. Installation of concrete dumpster pads at locations indicated by the applicable drawings.

Submittals

Material Certificates: Provide a copy of material certificates (and Technical Bulletins) signed by material producer and Contractor, certifying that each material item complies with or exceeds specified requirements.

Quality Assurance

Concrete replacement or repair shall strictly conform to the most stringent of the following: Applicable specifications outlined by the American Concrete Institute, any product manufacturer’s specifications or recommendations, any applicable local government codes and regulations of those specifications provided herein.

Site Conditions

Ensure proper soil compaction and consistency of compaction under areas of concrete replacement. Remove any debris, root growth or electrical cables from area of work and install prior bedding materials, mechanically compacted.

Weather Limitations: No new concrete shall be installed if the temperature is below 40 degrees Fahrenheit.

Grade Control: Establish and maintain required lines and elevations so that proper drainage is maintained.

PRODUCTS

Reinforcement

Reinforcement, where required, shall conform to the following:

- Bars: ASTM 615 grade 40 using deformed bars for number 3 and larger.
- Bending: Bending shall comply with ACI318.
Concrete material shall comply with the following as a minimum requirement:

- **Portland Cement:** ASTM C150, type I or II, low alkali.
- **Aggregate - General:** Comply with ASTM C30 uniformly graded and clean. Concrete is to have a minimum compressive strength of 3000 psi unless otherwise specified. Do not use aggregate known to cause excessive shrinkage.
- **Aggregate - Course:** Provide crushed rock or washed gravel with minimum size number 4.
- **Aggregate - Fine:** Natural washed sand of hard and durable particles varying from fine to particles vary from fine to particles passing a 3/8” screen of which at least 12% shall pass a 50-mesh screen.
- **Aggregate: - Water:** Use only clean and portable water.
- **Surface Treatment I:** Where sealer or hardener is called for, provide “Ashford Formula” manufactured by Cure-Crete Chemical Company of Orem, Utah. Provide the manufacturer's standard written 20 year/10 year warranty.
- **Surface Treatment II:** Except as otherwise directed, on concrete slabs, curbs and walkways, provide “Hunt TLF” curing agent manufactured by Hunt Process Co., Inc., or an approved equal.

Other Materials

Provide other materials not specifically described, but required for complete and proper installation, as selected by the Contractor subject to the Owner’s approval.

**INSTALLATION PARAMETERS**

**General**

The Scope of Work consist of replacement and/or repair of damaged concrete sidewalks, patios and curbs as indicated on the enclosed Concrete Bid Sheet and referenced in any drawings provided. Repair (patch or re-point) stucco as indicated on the “Building Woodwork Elevations” drawings.

Material shall be stored neatly on pallets, covered and with proper ventilation.

The Contractor shall pick up all debris (including nails, scrap lumber, concrete forms, spikes...) continuously throughout each work day.

The Contractor shall coordinate the work for each building with the Owner’s Representative.
Concrete Tear-up/Removal

The Contractor shall saw cut, remove and legally dispose of all concrete and unsuitable base materials off-site.

The Contractor shall inspect all grade surfaces for proper compaction and consistency. Any hidden problems, such as root growth or below ground plumbing, shall be brought to the attention of the Owner.

The Owner’s Agent will inspect all concrete repairs and overall concrete conditions upon completion. If Owner’s Agent is not available or not available within a reasonable time, it shall be the Contractor’s responsibility to take pictures and furnish proof that all regular contract and change order repairs were performed and completed properly.

The Contractor shall provide protection and warnings as necessary to protect residents during performance of this work (using barricades, lighting, etc., as required). No holes should be open more than 25 hours, weather permitting.

Concrete Replacement – General

Construct forms to the exact size and dimensions to complete concrete casting to match the existing structures, slabs, curbs, etc. Forms are to be completely removed as soon as it is practical to do so.

Re-grade, add new base material as necessary, and properly mechanically compact prior to pouring concrete.

All concrete is to be minimum 3000 PSI, air entrained, to match existing in color, texture and thickness. Expansion and control joints are to be provided as necessary to match existing.

The Contractor is to take proper steps to avoid concrete to avoid concrete cracking during the curing process.

When the mean daily temperature outdoors is less than 40 degrees Fahrenheit, maintain the temperature of the concrete between 50 degrees Fahrenheit and 70 degrees Fahrenheit for the required curing period. Provide any required heating systems which will uniformly heat the entire curing area without exposing the area to exhaust gases containing carbon dioxide (CO2).

All walking surface slopes are not to exceed ¼” per foot.

All new curbs and steps are to meet applicable local code requirements and match adjacent areas in dimension, color and texture. Any curbs or walks within a defined wheelchair accessible route shall meet ADA requirements. All “Accessible Routes” shall be defined by the Owner.

Concrete Repair – Curbs, Sidewalks, Patios & Breezeways

Repair issues in this document are referred to as repair, patch, re-point or re-grout. Walk upsets where indicated may be saw cut smooth, ground smooth or taper grouted.

Seal concrete cracks where indicated using standard mortar mix. Provide a smooth surface with texture to match existing.
Dumpster Pad Installation

There shall be a 16’x22’ saw cut made into the asphalt to allow for excavation of dumpster site. All materials removed from dumpster site will be hauled from property and legally disposed in accordance with all local and state government standards, codes and ordinances.

Dumpster pads will be installed as specified on the site plan. The pads will be reinforced throughout an entire span with 6”x6” welded wire fabric.

Dumpster pads will be formed to match the height of existing concrete and sloped to insure that ponding will not occur at the dumpster or adjacent areas.

Sidewalk Demo and Re-pour

Make saw cuts as straight as possible at starting point.
Remove bad sidewalk sections and haul off.
Reform using 2x4’s.
Apply 6x6x10 gauge wire mesh.
Re-pour 3000 psi hard rock concrete.
Tool joints every 4’.
Apply a broom finish.
Pull forms, clean up excess concrete.
Backfill sides of concrete with top soil.
Re-seed as necessary.

Parking Lot Repairs & Restripe

Saw cut damaged areas and remove.
Back fill with sand leaving 6” depth for new concrete.
Install dowels into existing concrete (minimum 6”) with ½” steel rebar with 8” spacing.
Owners will inspect prior to concrete installation.
After inspection, re-pour concrete using minimum 3000 psi with finish to match existing.
Restripe to match existing.

INSPECTION PARAMETER

Inspect work while installation in progress to verify square footage is being completed and proper installation of steel and concrete materials.

PRICE RANGES

Volume and Competitive Bidding will influence unit costs. Below are estimates only

<table>
<thead>
<tr>
<th>Service</th>
<th>Price Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking Lot Repairs</td>
<td>$5.00 to $5.50 per Square Foot.</td>
</tr>
<tr>
<td>Curbing</td>
<td>$30.00 to $60.00 per Linear Foot/Straight Curb or Curb/Gutter</td>
</tr>
<tr>
<td>Sidewalk</td>
<td>$4.00 to $4.50 per Square Foot.</td>
</tr>
</tbody>
</table>
TENNIS COURT REPAIR & RESURFACE

GENERAL PARAMETERS

Bids should include all materials, labor, tools, equipment, debris and waste removal, transportation, services, permits, taxes or anything else required for completion of the required work as outlined and shall be in accordance with all governmental standards, codes and ordinances.

Square footage to be repaired should be determined before work is put out to bid. Process used in this specification is one of three different applications that could be successful. The process recommended has provided the best success in durability.

Cracks on the surface can be sealed with different processes, but no viable Contractor will guarantee surface against cracks already present. The only viable solution is total demolition and apply a new asphalt surface. This process will cost at three to four times the repair recommended. Depending on budget and court use, the replacement alternative should be considered.

PRODUCT SPECIFICATION

Materials recommended are LayKold Acrylic Deep Patch for Asphalt Cracks and bird bath areas or low spots in the tennis court surface.

Surfaces once repaired will be covered with three LayKold color coat applications with two coats with 80B Silica Sand and the final coat being the finish coat. Court lines primed and painted with LayKold texture line paint.

New nets approved by the United States Lawn Tennis Association should also be bid.

INSTALLATION PARAMETERS

All cracks should be cleaned and dried as to give adequate areas to hand trowel LayKold Acrylic Deep Patch materials. Low spots should be targeted to leveling to eliminate bird bath type low spots.

The surface should be cleaned and dried for applications of surface coats. The surfaces will be covered with two layers of LayKold Color Coat Application with 80B Silica Sand added to the surface material before application.

The final coat of LayKold Color without Sand will be the final coat. Before the work is to begin, the speed of the court should be determined by GSSW. Color combinations must also be approved by GSSW.

All court lines should be primed and painted with a LayKold textured line paint and marked in accordance with the rules of United States Lawn Tennis Association.

Paint net posts and reinstall nets and net straps. Work should not take more than ten (10) days, weather permitting. Net specification includes a heavy duty polyethylene net with true net bracing, center strap and double synthetic headband with thirty-six (36) month warranty.
INSPECTION PARAMETERS

The tennis court surface repairs both with crack filling as well as leveling should be inspected before any surface is installed. Once approved, the Contractor can move on the surface preparation. Review materials used while the Contractor is on-site and inspect daily to assure that three coats of material were installed. Complete a final walk once the work is complete to assure quality look and workmanship.

Contractors will not guarantee the surface from cracking again if old surface had cracks. Coverage and materials will minimize cracks. A typical warranty period range is from one (1) to two (2) years.

PRICE RANGE

Tennis court resurfacing should range from $8,000 to $10,000 per court surface. Complete demolition and replacement should range from $18,000 to $20,000 per court.