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HOUSING AUTHORITY
COUNTY
OF SAN BERNARDINO

ASPHALT & CONCRETE SPECIFICATIONS

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 Asphalt Paving 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.

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 HMA (hot-mix asphalt) 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, Guard-Top, Jennite, or equal.

Restripe

Clean and prepare the paving, then restripe all parking areas and fire lanes as needed to meet city codes. Traditional parking lanes shall be marked in white unless local codes dictate other colors. ADA parking and access aisles shall be blue. ADA parking quantity and dimensions shall conform to CBC Chapter 11B

ASPHALT REPAIR & RESURFACE (continued)

INSTALLATION PARAMETERS

General
HMA Type D Hot Mix will be installed over Cement Treated Base as specified in the State Department of Highways Standard Specifications.
HMA 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. All work shall be in accordance with the Standard Specification for Public Works Construction "Green Book" (SSPWC).

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 graduated 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.

ASPHALT REPAIR & RESURFACE (continued)

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 day 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. Asphalt paving 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 vase 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 thirty (30) days after repairs to give repaired surface time to cure.

PRICE RANGES

Volume and Competitive Bidding will influence unit costs. Below are estimates only
Repairs with Cement Treated Base should cost $3.25 to $4.50 per foot.
Overlay of minimum 2" should cost $2.00 per sq. foot.
Seal Coat Process (2 Coats) should cost .12 to .15 per sq. foot.
Restriping should cost $7.25 to $8.50 per parking stall.

ASPHALT & CONCRETE SPECIFICATIONS

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.

CONCRETE REPAIR & RESURFACE (continued)

PRODUCTS

Reinforcement
Reinforcement, where required, shall conform to the following:

☐ Bars: ASTM 615 grade 40 using deformed bars for number 3 and larger.

☐ Welded Wire Fabric: ASTM A185.

☐ Bending: Bending shall comply with ACI318

Concrete
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 manufacturers 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.

CONCRETE REPAIR & RESURFACE (continued)

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 "Accessible Route" shall meet ADA requirements per CBC Chapter 11B.
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. Trip hazards where indicated (less than 1 inch) 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.

CONCRETE REPAIR & RESURFACE (continued)

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 minimum 6" thickness and reinforced throughout the entire span with #4 steel reinforcing bar 18" on center.
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.
Re-pour concrete using minimum 3000 psi with smooth steel-trowel finish.

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 perpendicular to the direction of pedestrian travel.
Pull forms, clean up excess concrete.
Backfill sides of concrete with top soil.
Re-seed turf 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 12" 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
Parking Lot Repairs $6.25 to $7.00 per Square Foot.
Curbing $37.00 to $75.00 per Linear Foot/Straight Curb or Curb/Gutter
Sidewalk $5.00 to $6.00 per Square Foot.

END SPECIFICATIONS