

## **SCOPE OF WORK**

### **RESEAL PCC PAVEMENT JOINTS AND CONCRETE REPAIRS** **DALLAS-FORT WORTH NATIONAL CEMETERY, DALLAS, TEXAS**

- A. **The Contractor:** Shall furnish all labor, material, equipment, and supervision necessary to repair and reseal Portland Cement Concrete (PCC) pavement and sidewalk joints and repair a portion of PCC path at Dallas-Fort Worth National Cemetery in accordance with drawings, specifications, and per applicable standards and requirements.
- B. **The Work:** The Work shall include, but shall not be limited to the following (not necessarily in the order indicated):

#### **RESEAL CONCRETE JOINTS**

1. Contractor shall remove joint inserts from all joints and the joints shall be sawed to provide a clean vertical face. The width and depth of the saw cuts shall be sufficient to ensure removal of all the inserts and to provide a finished joint of the correct joint shape dimensions for the sealant material specified for the resealing operation.
2. Contractor shall remove any existing in-place sealant. Sealant shall be cut loose from each joint face independently using a vertical cutting edge tool. Alternatively, a power driven concrete saw with diamond or abrasive blades may be used. After cutting the existing sealant free from both joint faces, the sealant shall be removed to the depth required to accommodate any separating and/or depth blocking medium used, and to provide the specified depth for the new sealant material to be installed.
3. Contractor shall reface joints using a power driven concrete saw with diamond or abrasive blades to remove all old sealant from the joint faces to expose new clean concrete and, if required, to cut the joint to the width and depth necessary to provide for an effective shape factor in the joint sealant. The existing PCC pavement joints are overwhelmingly 3/16" wide. There are some joints that have widened beyond their original construction. The Contractor shall reseal all joints appropriately, no matter their width.
4. Contractor shall thoroughly clean the joint faces and opening following the refacing operation and prior to resealing, using a high-pressure water jet followed by an oil-free air jet to remove all cuttings or debris remaining on the or in the joint opening. The newly exposed joint faces shall then be cleaned by water blast or sandblasting. A multiple-pass technique shall be used until the surfaces are free of any traces of old sealant and free of sawcutting fines that might prevent bonding. For final cleaning immediately prior to installation of the blocking medium, the joints shall be blown clean with oil-free compressed air and left completely free of sand and water. Cleaning joints shall follow the recommendations of the manufacturer of the joint seal being used.
5. Contractor shall plug or seal off the lower portion of the joint groove at a uniform depth with a backer rod to prevent entrance of the sealant below the specified depth. The size of the backer rod required will depend on the joint width. The backer rod shall be compatible with the sealant (see sealant manufacturer's recommendations). The product shall be clean, free of scale or

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foreign matter, oil or moisture and shall be non-absorbing. The proper size for different joint widths are listed below:

<b>Joint Width</b>	<b>1/4"</b>	<b>3/8"</b>	<b>1/2"</b>	<b>3/4"</b>	<b>1"</b>
Recessed Below Surface	3/8"	3/8"	3/8"	3/8"	3/8"-1/2"
Sealant Thickness	1/4"	1/4"	1/4"	3/8"	1/2"
Backer Rod Diameter	3/8"	1/2"	5/8"	7/8"	1 1/4"
Total Joint Depth	1 1/8"	1 1/8"- 1 1/4"	1 1/4"- 1 3/8"	1 5/8"- 1 3/4"	2 1/4"-2 3/8"

The backer rod shall not be stretched during insertion in the joint. When the existing sealant has been removed to the required depth and the bottom of the joint opening to be resealed is formed by previously installed sealant material (such as in an expansion joint), a nonreactive adhesive-backed tape shall be inserted in lieu of the backer rod. The tape shall be 1/8 inch wider than the nominal width of the joints.

6. The work required for the removal of existing joint sealant, widening and/or deepening of the joint openings, if required, refacing of joint faces, and sandblasting of the joint faces should proceed at reasonable production rates determined by the contractor. The final stages of joint preparation which includes air pressure cleaning of joints, and placement of separating and/or blocking medium if required, shall be limited to only that lineal footage of joint that can be resealed during a day's production.
7. Contractor shall remove and repair any spalled areas greater than 1/2 inch (13 mm) deep at the joint prior to installing sealant. Spalls less than 3/4 inch (19 mm) wide shall be filled with sealant when filling the joints. For spalls greater than 3/4 inch the spalled concrete shall be removed and the areas chipped down to sound concrete. The resulting areas shall be left rough to obtain a good bond between patch and concrete. The area shall then be sandblasted and the joint formed to a width less than the final opening. The entire area shall be given a coat of straight epoxy resin (without aggregates). Epoxy resin mortar shall immediately be tamped in place and troweled off. Placement of epoxy will be permitted only within the temperature range recommended in AASHTO M 235, for the class of epoxy used. Form removal, joint sawing, and traffic over the patch area will not be permitted for eight hours after placement.
8. Sealant compound shall not be placed unless the joint is dry, clean and free of dust. The face of the joint shall be surface dry and the atmospheric and pavement temperature shall both be at least 50° F at the time of application of the sealant. Ensure accurate temperature control of the sealant reservoir/vat for desired sealant properties. Installation of the sealant shall be such that the in-place sealant shall be well bonded to the concrete and free of voids or entrapped air. The joints shall be sealed in a neat and workmanlike manner. Contractor shall recess an ultra-low modulus, self-leveling, premium-grade, weather and UV resistant silicone sealant with unprimed adhesion

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to Portland cement: Type 1, Class A; ASTM C-920, Type S, Grade P/NS, Class 100/50, Use T (such as Dow Corning® 890-SL or approved equal). Contractor shall achieve the required shape so that upon completion of the work, the surface of the sealant material shall be 1/4 + 1/8 in. below the adjacent pavement surface. The sealant reservoir shall have a shape factor, Depth/Width, from 1 to 0.5. (See dimensions in Paragraph 5.) The Contractor shall "spot up" or refill all low joints before final acceptance. Any excess material on the surface of the pavement shall be removed and the pavement surface shall be left in a clean condition. Unless otherwise specified, the period of cure shall be in accordance with the manufacturer's recommendations. Vehicular or heavy equipment traffic shall not be permitted on the pavement in the area of the joints during the curing period.

9. The Contractor shall prepare and submit in advance a written traffic control program in accordance with the recommendations in Part VI of the "Manual of Uniform Traffic Control Devices," current edition, for review and approval by the engineer. Contractor shall also submit a project phasing plan with their schedule; the Contractor's plan shall incorporate the following restrictions:
  - a. During public visiting (i.e. business) hours (Sunday – Saturday, 7:00 am to 4:30 pm) at least one lane shall remain open to traffic at all times.
  - b. Work on Shelter A drive and Lone Star Circle from Shelter C entrance to Shelter A exit shall occur either during the weekend and/or after business hours.
  - c. Weekend and after-hours closure may be considered for other areas by approval of the COR and engineer.
  - d. When other than normal business hours are approved in any case, all traffic control devices shall be removed to allow minimum traffic flow (one lane) the following morning (i.e. at 7:00 am).
10. Contractor shall supply all temporary signing, cones and other traffic control devices as required and approved by the engineer.
11. Resealing of joints shall be measured to the nearest lineal foot of seal installed.

### **SERVICE PATH REPAIR**

12. Contractor shall demolish and remove the two (2) 6-inch slabs of the PCC service path as identified on the contract drawings. Concrete shall be removed to the nearest expansion/control joints as designated on the contract drawings. Saw cut existing control joints as necessary to remove the concrete.
13. Contractor shall excavate and remove existing base material. Prepare, grade, and compact subbase. Reinstall, level, and compact new base material.

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14. Contractor shall drill the existing concrete pavement (both sides of the replacement section) on 24-inch centers, 15 inches deep. Epoxy grout 30-inch long #4 bar (1/2-inch diameter) into each drill hole.
15. Contractor shall form up and install the new Cast-in Place (C.I.P.) concrete path in accordance with the contract drawings and specifications. The new path shall continue the existing slope. The slope shall be field adjusted to allow proper drainage and to match the adjacent elevations. Place 4000 psi, reinforced concrete: 6-inch minimum thickness; #3 bar at 18 inches on center each way, centered in slab, splices lapping 30 diameters (minimum 18 inches); elastomeric expansion joints; and a finished surface that matches the textures of the existing PCC path in accordance with the contract specifications and drawings.
16. Concrete shall be protected from vehicular traffic, including vehicles of the Contractor, until the concrete is not less than 7 days old. A compressive strength of at least 3000 psi shall be achieved before vehicular traffic is allowed on the new pavement.

#### C. General Conditions:

1. Haul away & dump debris and waste to an approved disposal site in accordance with Specification Section 01 74 19, *Construction Waste Management*.
2. Remove, cut, alter, replace, patch and repair existing work as necessary to install new work. Existing work to be altered or extended and that is found to be defective in any way, shall be reported to the COR before it is disturbed. Materials and workmanship used in restoring work shall conform in type and quality to that of original existing construction, except as otherwise shown or specified.
3. Thoroughly clean up the work area at the end of each day's work, and at completion of the project. Leave premises clean and free of waste, scrap, used equipment, or other material intentionally or incidentally delivered to the site by Contractor or Contractor's personnel. Haul away & dump debris and waste to an approved disposal site.
4. The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site not to be removed and do not unreasonably interfere with the work required under this contract. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.
5. The Contractor shall protect from damage all existing improvements and utilities at or near the work site and on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the

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requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

6. All utilities required for the continuous operation of all existing facilities shall be maintained in service at all times except when disruptions are needed. The Contractor shall inform the Cemetery Director and the Contracting Officer (CO) in writing for such disruptions and obtain approval from the CO in writing at least 2 weeks prior to such need. When option exists, implement options to minimize interruption of services to the facilities.
7. The Contractor shall coordinate with the Cemetery Director for parking, material storage, temporary portable restroom facilities, and any other needs for the work. Public access to the National Cemetery shall not be impaired.
8. The Contractor shall assume sole responsibility for safety of all persons on or about the construction site, in accordance with applicable laws and codes. Guard all materials in accordance with the safety provisions according to OSHA and Associated General Contractors of America (AGC).

#### **D. Standards of Employee Conduct:**

1. The National Cemetery Administration honors veterans with a final resting place and lasting memorials that commemorate their service to our Nation. National Cemeteries are national shrines. The standards of work, appearance, and procedures performed by the contractor at this cemetery shall reflect this nations concern for those interred there. Due to the sensitive mission of the cemetery, contractor personnel must exercise and exhibit absolute decorum, composure, and stability at all times.
2. Contractor personnel shall be required to adhere to the following standards of dress and conduct, as briefly mentioned here, while performing work in the National Cemetery. These standards and regulations are enforceable under Title 38, U.S.C., Part I, Chapter 9, Section 5901.
3. Clothing shall be presentable and suitable to the work while maintaining proper appearance and decorum indicative for a National Shrine. Uniform shirts and hats are preferred. Clothing shall be clean and cleanliness and personal hygiene are imperative. T-shirts and/or tank tops as outer garments are prohibited. Protective/safety clothing and shoes shall meet or exceed OSHA and state requirements.
4. Behavior and language must be appropriate, reverent, and respectful at all times.
5. Eating and drinking (except water) is prohibited in the work areas and within sight of a committal shelter during a service.

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6. Use of intoxicating beverages, any tobacco products, and illegal drugs on the Cemetery premises is strictly prohibited.
  7. Contractor personnel shall not lean, sit, or stand on or against headstones or monuments. No tools, equipment or other items will be placed or leaned on headstones or monuments.
  8. The Contractor shall be responsible for maintaining satisfactory standards of personnel conduct and work performance and shall administer disciplinary action as required. The Contractor is expected to remove any employees from the Cemetery for cause, to include, but not limited to, safety violations, other misconduct in performance of duty under these specifications and/or conduct contrary to the best interests of the Government. If the Contractor fails to act in this regard, or the reason for a removal is immediately required to protect the interests of the Government, the COR may direct the removal of an employee from the premises. Contractor objections to any such action will be referred to the Contracting Officer (CO) for final resolution; however, the Contractor will first immediately comply with COR direction pending any CO final resolution at a later time or date. The Contractor will not be due any type of compensation for their costs incurred as a result of an employee being removed for cause; unless the removal is directed by the COR, and is later found invalid and/or unreasonable by the Contracting Officer.
- E. Time of Completion: The project shall be completed within 120 calendar days after contract Notice to Proceed. Work outside of the Cemetery's normal operating hours of 7:00 am to 4:30 pm, Monday through Friday, excluding observed Federal Holidays, shall be permitted only by approval of the COR and in accordance with Paragraph B.9 of this SOW. The Contractor shall not commence performance of work until the Contracting Officer has conducted a preconstruction meeting or has advised the Contractor that a preconstruction meeting is not required.
- F. Pre-bid Site Inspection: A pre-bid site inspection is recommended. Contact the Cemetery Director at (214) 467-3374 to make site visit arrangements.
- G. Code Compliance: All work shall be performed in accordance with the specifications. It shall be the Contractor's responsibility to comply with all the applicable local, state and federal laws and regulations. The Contractor shall apply and obtain all applicable permits to comply with local, State and Federal regulations and requirements. The Contractor shall remove and dispose of all waste materials and construction debris and comply with all applicable local, State and Federal regulations and requirements. All waste materials and debris specified shall be removed from the Cemetery grounds by the Contractor at its own expenses, including all applicable permits and fees.
- H. Experience Requirements:
1. The Contractor shall provide sufficient project details with their technical proposal to demonstrate experience with at least three (3) pavement joint sealing projects of similar size, scope, and using similar materials and methods over the past five (5) years. Each contract submitted must have been satisfactorily completed, or if not yet completed, must be marked by

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satisfactory progress. The Government will not consider a contract that is less than 50% complete or an effort that concluded more than 5 years ago. Contractor shall provide customer points of contact for each project listed.

2. Contractor Supervisor/Superintendent: A competent and experienced English-speaking Contractor Supervisor/Superintendent shall be provided by the Contractor whenever work is being performed - other than trash and debris pick-up. The Contractor Supervisor must have not less than five (5) years of experience as a direct supervisor of vehicle pavement projects. Offerors shall submit a resume for the Contractor Supervisor as part of the technical proposal. All permanent substitutions, whether of prime supervisors or sub-contractors, will be identified and reported to the COR and Contracting Officer, if not prior to, as soon as possible after occurrence.
3. The Contractor Supervisor shall review and approve submittals, ensure all specifications are being met, inspect the quality of work performed, ensure contract work does not conflict with ceremonies and funerals, ensure employees are adequately supervised and proper conduct maintained, and certify the completed work for payment and other purposes.

#### I. Contractor Quality Control:

1. The Contractor shall guarantee that all work done under this contract shall be free from defaults and no faulty workmanship with one (1) year warranty and five (5) year extended manufacturer's warranty on the sealant materials. Contractor shall ensure all appropriate paperwork is submitted to the manufacturer to receive the warrant. The Contractor hereby agrees to repair or replace deficiencies within 14 calendar days of notification by the direction of the CO at Contractor's own expense and shall be corrected to the satisfaction of the Government.

#### J. Submittals After Award: Submit the following to the COR and engineer for review and approval:

1. Manufacturer's literature (including installation instructions) for the sealant compound(s), backer rod, primer (if necessary), and concrete design mix;
2. Cured sample of exposed sealant;
3. Proposed project phasing and schedule.
4. Warranty documentation.

#### K. Specifications Sections:

01 74 19 - *Construction Waste Management*;  
07 92 00 - *Joint Sealants*;  
31 20 11 - *Earth Moving (Short Form)*; and  
32 05 23 - *Cement & Concrete for Exterior Improvements*.

#### L. Plans/details:

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1. Drawing X-101: *Cover Sheet & Index*;
2. Drawing X-102: *Sample Phasing Plan*;
3. Drawing D-101: *Demolition Plan*;
4. Drawing L-101: *Overall Site Plan*;
5. Drawing L-102: *Typical Joint Layout Site Plan*; and
6. Drawing L-103: *Shelter A Site Plan*.

M. POC: The Contracting Officer's Representative (COR) for this project is: Melvin Carson, Foreman, Dallas-Fort Worth National Cemetery.

N. Project completion: The project site shall be protected and/or restored to a condition equal to that existing prior to the commencement of work. Upon completion of contract, deliver work complete and undamaged. Existing work disturbed or removed as a result of performing required new work, shall be patched, repaired, reinstalled, or replaced with new work, and refinished and left in as good condition as existed before commencing work.

**END OF SCOPE OF WORK**

**ATTACHMENT 1**  
**PICTURES**



**Figure 1:** Patriot Ave. (typical joint layout).



**Figure 2:** Lone Star Circle (typical joint layout).



**Figure 3:** Example of spall near joint.



**Figure 4:** Joint at rolled curb (typical edge treatment).



**Figure 5:** Sidewalk at Shelter (beginning)



**Figure 6:** Example of extra wide joint (from Figure 5)



**Figure 7:** Shelter Drive (typical joint layout).



**Figure 8:** Example of extra wide transverse joint at Shelter Drive (boot on right for scale)