**CONCRETE LIFTING & LEVELING and OTHER RELEVANT SERVICES**

**INDEFINITE QUANTITY CONTRACT**

**SCOPE OF WORK / PROJECT OVERVIEW:** The Contractor shall fully execute the Work to include providing polyurethane foam injections to lift and level settled concrete slabs as well as other uses in and around {CITY}. In the event polyurethane foam injections are not applicable in the correction of a settled concrete slab, the Contractor shall be able to offer alternative remedies such as grinding to remedy the issue.

**TECHNICAL SPECIFICATIONS:**

***Section 1- General***

**1.1 Description**

1.1 This project involves the leveling of sunken slabs and densification of subsoil by utilizing polyurethane foam injection. For areas in which polyurethane lifting is not applicable, grinding will be utilized to smooth down the slab adjacent to the settling concrete slab. Additionally, the Contractor will joint fill cracks or patch missing sections of concrete with appropriate materials when needed.

1.2 Work will be scheduled promptly, but on a as needed basis, at the city’s discretion throughout the allotted contract term.

1.3 Labor, materials, equipment and supervision will be provided by the contractor to complete the project in agreement with these conditions.

1.4 Contractor shall include and provide traffic maintenance on all residential roads or projects in which the Contractor can mobilize on city property without a material traffic disruption. The Contractor may charge for traffic control on other roadways when required and approved in advance based on case-by-case quotations.

1.5 The Contractor is required to have the capacity to be on-site to a non-emergency request within 24 hours, and the capacity to be on-site for an emergency work request within 2 hours of notice.

**1.2 Mandatory Pre-Bid Conference**

 2.1 A Pre-Bid Conference shall be conducted for all prospective bidders. All bidding contractors must attend this Pre-Bid Conference. A list of those companies’ present will be recorded.

2.2 All prospective bidders shall attend a mandatory pre-bid conference at {TIME} on {DATE} in the City of {CITY} at the following address: {ADDRESS}

**1.3 Quality Assurance**

 3.1 Contractor must have a minimum of 20 years of experience in polyurethane foam application.

 3.2 The Contractor must have successfully installed projects of a similar scope and nature, within the City limits.

 3.3 Contractor must provide their Approved Applicator Certificate from the manufacturer of the polyurethane formulation.

 3.4 Contractor must provide a reference list of 10 previous clients, including contact name and phone numbers, for which the contractor has successfully performed soil compaction, concrete lifting, or under sealing of similar size and scope to this project.

 3.5 The Contractor will have a minimum of 3 production unit/ “Rigs”. Each unit will contain at least 2 injection guns and 1 proportioning unit.

 3.6 Contractor’s Site Supervisor must have a minimum of 300,000 sq. ft. experience with lifting concrete slabs utilizing polyurethane foam.

 3.7 Contractor’s Site Supervisor must possess a Master Installer Certification or Project Manager Certification from the Spray Polyurethane Foam Alliance (SPFA) or an equivalent ISO 9000 qualified program.

 3.8 The Contractor’s Site Supervisor must present documentation that he/she has successfully completed the SPF Chemical Health & Safety Training Program as provided by The American Chemistry Council.

**1.4 Measurement and Payment**

4.1 The City will request an inspection and estimate for a specific area of concern based on the contract rates.

4.2 Contractor shall provide a price estimate based on the measurement and analysis of the sunken concrete slabs at the proposed work site including the anticipated material usage. If approved, the contractor will proceed within the allotted response time and complete the work and record the quantity of actual material used.

4.3 Payment for all work done shall be calculated by the quantity of material actually used multiplied by the contract unit price.

***Section 2- Concrete Slab Lifting and Subsoil Stabilization***

**2.1 Description**

1.1 This work is to include the lifting, leveling, and stabilizing of compromised concrete slabs utilizing a hydrophobic polyurethane foam injection. Compromised slabs shall be raised level with the immediately adjacent slabs, or otherwise as directed by the project engineer depending on the scope of the particular application.

1.2 Uses for concrete slab lifting and subsoil stabilization include, but are not limited to:

* Sidewalk Tripping Hazard
* Roadway Slab
* Rear Easement Backyard Residential Swales
* Roadway Curb & Gutter
* Storm Water Drop Inlet
* Void Filling
* Driveway and/or Apron
* Interior Slab Stabilization
* Stoop & Stairs
* Handicap Entrance Ramp
* Pool Deck
* Picnic Pavilion
* Concrete Under-Pinning
* Pipe Breach Sealing

**2.2 Polyurethane Material**

 2.1 The polyurethane foam used shall be JACKCRETE 660-H or approved equal.

 2.2 The reacted polyurethane will have a minimal free rise density of 4 lbs./ft3 and a minimum compressive strength of 100 psi.

 2.3 The product will be unaffected by water in its component reaction. Therefore, the injected product is not significantly disturbed by soil wetness or free water beneath the concrete, with greater than 80% closed cells.

 2.4 Within 15 minutes from the time of injection, the polyurethane foam will have reached 90% of full compressive strength.

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| --- | --- | --- |
| Property | Value | Test Method |
| Density, in place, pcf., min. | 6 | ASTMD-1622 |
| Compressive strength, psi, min. | 100 | ASTMD-1621 |
| Closed-cell content, percent, min. | >90% | ASTMD-2856 |
| Tensile Strength, psi, min. | 140 | ASTMD-1623 |
| Shear Strength, psi, min. | 60 | ASTMC-273 |
| Water Absorption, lbs./ sq. ft. | <.05 | ASTMD-2842 |

**2.3 Materials, Delivery, and Storage**

3.1 Deliver materials to the site in their original, tightly sealed containers, all clearly labeled with manufacturer’s name, product identification and lot number.

 3.2 Safely store materials in their original containers out of the weather and where the temperatures are within the limits specified by the manufacturer.

 3.3 All materials shall be stored in compliance with applicable fire and safety requirements.

 3.4 Protect materials from damage during transit, handling, storage and installation. Applicator shall provide secure storage for all materials.

**2.4 Equipment**

4.1 The contractor will have a minimum of 3 production units. The following equipment is to be provided by the Contractor on each unit:

 A. Proportioning equipment capable of injecting polyurethane foam underneath concrete slabs at specified and measurable volumes to control the rate and magnitude of concrete lifting.

 B. All production units/ “rigs” shall properly control the temperature, pressure, and proportionate mixing of the polyurethane component materials. This includes all proportioning units, guns, electric generators, heaters, hoses, valves, compressors, gauges, and containers necessary in the control and completion of the specified work. All devices should be capable of maintaining self-sustaining operations without additional supplied utilities. No utilities to be provided by the city.

 C. Electric drills capable of drilling 5/8” diameter holes in concrete slabs for polyurethane injection, along with all necessary safety equipment. These drills should be capable of drilling so much as 5 feet deep.

 D. Suitable elevation measurement devices to insure concrete is raised to the correct grade as required for the completion of work. Elevation measurement devices should be capable of 1/1000” accuracy. These devices will also be utilized in the determination of incorrectly graded concrete slabs.

 E. All personal protective equipment (PPE) necessary to maintain a safe work environment during the course of work.

**2.5 Process**

5.1 The Contractor is to furnish all labor, materials, equipment, and supervision for the entire scope of work less any engineering oversight or traffic control for specific project conditions or objectives.

5.2 The Contractor shall inspect each work location and profile the concrete as determined from the elevation measurement devices used to determine beginning slab characteristics.

5.3 The Contractor shall submit concrete profile measurements into modeling software, or other approved means, to determine anticipated material usage to achieve the desired concrete movement. This material usage will be utilized to estimate price for city approval prior to proceeding.

5.4 The concrete slab is to be strategically drilled while taking precautions to not damage the area surrounding the hole with correct hole location placement being critical.

5.5 The proportioning unit injection gun is to be fixed to an injection port secured to the drilled hole. Polyurethane foam is to be injected into the subsoil until all known or encountered voids are adequately filled and/or the concrete lifting is achieved. At time of injection, the Contractor’s Site Supervisor is to record the amount of material injected.

5.6 When working on roadways or other specialized projects requiring multiple injection sites in numerous slabs of varying sizes, a series of 5/8” holes shall be drilled through the relevant slabs corresponding to the Contractor’s project set-up schematic. Precautions shall be taken to avoid damage to the area around the holes.

5.7 While the polyurethane foam is being injected through the injection port, the surface shall be monitored with an elevation measurement device to ensure accurate grading.

5.8 All raised concrete sections shall match the grade of the adjacent slabs. Corrections to the grade of adjacent slabs shall be made in areas affected by multiple settling slabs. Final work is considered successful if affected slabs are corrected to within a nominal ¼” (+/-) variance.

5.9 The Contractor’s injection ports are to be removed and disposed of following injection completion. Drilled holes shall be filled thoroughly with shrink-resistant, color-matching grout.

5.10 The work area shall be thoroughly swept following daily work completion.

**2.6 Submittals**

6.1 Any alternate products shall be submitted to the owner and/or owner’s representative with their bid to allow for product review. Alternate product submittals shall include: all appropriate technical data sheets, manufacturer’s references, warranty, follow-up inspection policy and outline, material safety data sheets, and a typical, physical sample (3” x 3” x 3”) to be used as a standard of quality.

6.2 Applicator shall submit to owner’s representative at time of bid:

 A. Reference projects, with contacts, substantiating years of experience and completion of minimum prior work submitted by contractor. See the attached Reference Worksheet.

 B. Provide specimen copy of warranty document.

6.3 The Contractor shall issue a 3 Year, Full-System Warranty to the {CITY} stipulating that if the repaired areas drop more than 1/4 inches from their repaired height during the warranty period, Contractor will make repairs at no cost to the City. Contractor warrants the goods/services furnished to be of the highest quality and be free from defects for the warranty period which will be effective the date of installation. If installed, the warranty shall include all materials, labor and supervision costs. Replacements and repairs shall be made by the Contractor at no cost and to the satisfaction of the City. Any supplied materials shall carry the manufacturer's standard material warranty.

***Section 3- Concrete Slab Grinding***

**3.1 Description**

1.1 This work is to include the grinding of concrete slabs for areas in which polyurethane lifting is not applicable. Industrial strength diamond-toothed concrete grinding machines will be used to grade unlevel sections of concrete slabs to render the edges even with adjacent slab(s).

**3.2 Quality Assurance**

 2.1 Contractor must provide a reference list of 3 previous clients, including contact name and phone numbers, for which the contractor has successfully performed concrete slab grinding of similar size and scope to this project.

 2.2 Contractor must have at least 3 years of experience in concrete slab grinding.

**3.3 Process**

3.1 The Contractor is to furnish all labor, materials, equipment, and supervision for the entire scope of work less any engineering oversight or traffic control for specific project conditions or objectives.

3.2 The following equipment is to be provided by the Contractor:

 A. Both handheld and walk-behind concrete grinding apparatus including all blades capable of removing small layers of concrete from the top of a concrete slab.

 B. All personal protective equipment (PPE) necessary to maintain a safe work environment during work.

 C. Suitable elevation measurement devices to ensure that the grade created through grinding is within the allowable variance for completed work.

3.3 A profile of the concrete determined from the elevation measurement devices shall be used to determine the amount of grinding necessary. The grinding tool to be used shall be determined by the Contractor based on visual factors and experience.

3.4 The designated slab(s) are to be strategically ground so that the edge of the designated slab is even with the adjacent slab(s) within an acceptable variance.

3.5 Contractor shall follow OSHA recommendations on limiting silica dust exposure to crew members and the public (see *Controlling Silica Exposures in Exposures in Construction*, OSHA.gov)

3.6 Following grinding completion, the Contractor shall thoroughly clean the work area.

***Section 4- Joint Sealing/Concrete Patching***

**4.1 Description**

 1.1 This work is to include filling cracks or missing sections of concrete with appropriate materials.

**4.2 Quality Assurance**

2.1 Contractor must provide a reference list of 3 previous clients, including contact name and phone numbers, for which the contractor has successfully performed joint sealing of similar size and scope to this project.

 2.2 Contractor must have at least 3 years of experience in joint sealing.

**4.3 Materials**

 3.1 Sikaflex®-1a elastomeric sealant or approved equal must be used for joint sealing. When exposed, the caulk shall closely match the color of the concrete.

 3.2 Sika Pro Select Backer Rod or approved equal must be used when necessary for joint sealing.

 3.3 SikaGrout 212 or approved equal must be used for concrete patching.

**4.4 Process**

4.1 To prevent contamination and ensure proper bonding, all dirt, debris, moisture and other foreign materials must be removed from the joint/hole and from the surrounding area. Joints shall be fully dry before sealing.

 4.2 The backer rod shall be placed in the joint to stop three-sided bonding of the sealant (see manufacturer’s instructions) when necessary.

 4.3 The sealant shall be inserted into the existing joint and filled from the backer rod up to 3/8” below pavement surface (see manufacturer’s guidelines).

 A. Concrete patching materials shall be properly mixed to uniform consistency and installed within 15 minutes (per manufacturers recommendations).

 4.4 Contractor shall properly cordon off and/or warn the public of wet materials to avoid disruption during the dry times required. Contractors barriers/signage shall be promptly removed by the contractor upon the product curing.

 4.5 The Contractor shall clean up and properly discard all trash.

**SCHEDULE OF UNIT PRICES OWNER: {CITY}, VIRGINIA**

**FOR CONCRETE LIFTING & LEVELING and OTHER RELEVANT SERVICES INDEFINITE QUANTITY CONTRACT**

The unit prices have been computed in accordance with the specifications and conditions provided. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities provided, determined as provided in the Contract Documents. The prices quoted shall include, without exception, all materials, labor, equipment, clean-up, building permits or fees, and the Contractor's labor, overhead, profit, mobilization, demobilization and other mark-ups, and in full accordance with the Specifications. Include allowance for waste where appropriate. The unit prices shall be maintained throughout the contract period. Unit prices shall be used in determining additions or deductions from the total contract award amount in the event of changes in the work.

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| --- | --- | --- | --- | --- | --- | --- |
| **ITEM** | **DESCRIPTION** | **PRICE PER UNIT** | **ANTICIPATED UNIT QTY PER WORK ORDER GROUP** | **EXTENDED PRICE PER W/O****GROUP** | **ANTICIPATED # OF W/O GROUPS PER YEAR** | **EXTENDED PRICE** |
|  1 | **Small Group of Work Orders:**Concrete Lifting & Leveling utilizing Polyurethane Foam Injections for a group of work orders with a total material usage <100 lbs. | $             \* /LB  | 49 = | $                  | 40 = | $                     |
|  2 | **Medium Group of Work Orders:**Concrete Lifting & Leveling utilizing Polyurethane Foam InjectionsA group of work orders with a total material usage between101-499 lbs. | $              \* /LB | 249 = | \*$                   \* | 5 = | $                     |
| 3 | **Large Group of Work Orders:**Concrete Lifting & Leveling utilizing Polyurethane Foam InjectionsA group of work orders with a total material usage >500 lbs. |  $              \* /LB | 749 = | $                   \* | 2 = | $                     |
| 4 | Concrete Grinding |  $              Per L/F | 5 = | \*$                  | 25 = |  |
| 5 | Joint Caulking | $            \*\* Per L/F | 10 = | $                    | 25 = | $$ |
| 6 | Concrete Patching | $             Per S/F | 1 = | \*$                    | 25 = |  |
|  |  | \* |  | Total of Items 1-6 | $                   |

**REFERENCES FOR BIDDERS\***

\_\_\_\_\_ YES \_\_\_\_\_ NO Contractor Experience Declaration:

Company has 20 years’ experience in polyurethane processing, has at least 3 production units, and meets all other requirements of the specification.

\_\_\_\_\_ YES \_\_\_\_\_ NO Contractor can respond to an emergency situation within 2 hours.

Anticipated Emergency Response Time Frame

\_\_\_\_\_ YES \_\_\_\_\_ NO Site Supervisor Experience Declaration:

Site Supervisor is familiar with the installation of polyurethane foam, use of grinding equipment, joint sealants, traffic control, etc. and meet the sq. ft. experience requirement.

 Square Feet Installed

\_\_\_\_\_ YES \_\_\_\_\_ NO Site Supervisor has completed SPFA Master Installer Certification or Project Manager Certification or equivalent.

 Certification #                                     Expiration Date

\_\_\_\_\_ YES \_\_\_\_\_ NO Site Supervisor has completed American Chemistry Council Health & Safety training.

 ID #                                            Expiration Date

Please provide 10 references with address, contact person and phone number for Polyurethane Foam concrete lifting & leveling projects of similar nature and size occurring within the last 5 years (*Must include (1) municipal government reference*):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Entity  | Contact Name | Contact # | $ Value | Description |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |
| 7 |  |  |  |  |  |
| 8 |  |  |  |  |  |
| 9 |  |  |  |  |  |
| 10 |  |  |  |  |  |

Please provide 1 reference with address, contact person and phone number for Polyurethane Foam concrete lifting & leveling projects of similar nature and size occurring inside the city limits within the last 5 years:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Entity  | Contact Name | Contact # | $ Value | Description |
| 1 |  |  |  |  |  |

Please provide 3 references with address, contact person and phone number that demonstrates your experience with grinding concrete to bring to within A.D.A. compliance within the last 5 years:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Entity  | Contact Name | Contact # | $ Value | Description |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |

Please provide 3 references with address, contact person and phone number that demonstrates your experience with joint sealing within the last 5 years:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Entity  | Contact Name | Contact # | $ Value | Description |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |