

Request for Qualifications – Statewide Application Large-diameter, Base-grouted Drilled Shaft Construction

Background of Request For Qualification

Over the next few years, the Wisconsin Department of Transportation (WisDOT) anticipates the use of large-diameter (six [6] feet or greater), base-grouted drilled shafts on transportation projects that may be located throughout the state. This Request For Qualifications (RFQ) is soliciting responses from qualified drilling contractors seeking to be pre-certified to perform this work. Contractors performing work on these projects will be required to be on this pre-certified list at the time of project advertisement.

Contractors that are on the current WisDOT pre-certification list for large-diameter, base-grouted drilled shafts do not need to re-apply. These existing pre-certified contractors will remain on this list, and contractors meeting the requirements of this RFQ will be added to this list.

Work may be located in any area of the state and will require drilled shaft installation in various types of subsurface/geologic conditions. Expected depths range up to approximately 100 feet. Specific subsurface conditions and shaft depths will be shown on individual project contract documents and described in the project specifications.

At this time, there is one project that is anticipated to require pre-certified drilled shaft contractors. This project anticipates the use of 49 shafts with lengths ranging from 45 to 80 feet, and it is anticipated to be advertised during the summer of 2015. Additional Departmental projects using large-diameter, base-grouted shafts may be identified at later dates.

For purposes of RFQ responses, the contractor should assume the above shaft sizes and depths, and a subsurface profile composed of randomly interlaced seams of loose to dense, permeable sand or gravel of substantial thickness situated within glacial clays and till deposits. Saturated permeable soils, ground water; isolated cobbles or boulders; and nested cobbles and boulders can be expected during drilled shaft installation. Bedrock will be greater than 25 feet below the shaft tips.

Responses to this RFQ request will be the sole basis for granting pre-certification status to perform drilled shaft work on WisDOT projects with these types of shafts. Previous project-specific RFQ submissions and granted pre-approval status to perform drilled shaft work on prior contracts will not be used in place of this list, although Contractors on the current pre-certified contractor list will remain eligible for future WisDOT projects. The Department's decision on pre-certified contractors will be final. This pre-certification list will be in effect until such time that another solicitation occurs, or that any of the following actions apply.

At any time which a contractor pre-certification is in effect, the Department may request a new statement of qualifications from that contractor, due to non-conformance to the pre-certification requirements. If the contractor does not submit this within two weeks, the rating will be considered forfeited, and the contractor will not be pre-certified to perform contract work until such new statement has been received and approved by the Department.

Upon reasonable notice, the Department reserves the right to review a contractor's records. If such review discloses that erroneous or misleading information has been shown in the RFQ submittal, it will be grounds for contractor removal from the pre-certification list. The records of a representative number of pre-certified contractors may be audited annually.

A contractor dissatisfied with the pre-certification determination may submit a written request that the Department provide explanation for the determination. Such requests shall be made to the Director of the

Bureau of Technical Services, Division of Transportation System Development (DTSD). The Department's decision on pre-certification is final. Annually in December, the Department will advertise for new contractor RFQs for consideration of pre-certification.

The Request for Qualification Schedule

This RFQ is for any WisDOT project that includes large-diameter, base-grouted drilled shafts. The schedule for pre-certification is as follows:

RFQ Available.....	December 8, 2014
Receipt of RFQ Packages.....	January 5, 2015
Notification of Qualified Contractors.....	February 13, 2015

Anticipated Contract Documents

Anticipated contract documents will include (but may not be limited to) the following requirements:

- The entity or entities constructing the large-diameter, base-grouted drilled shafts must be on the Department's pre-certified list to perform contract work.
- The entity or entities constructing the large-diameter, base-grouted drilled shafts must be identified in the bid proposal opened at the bid letting.
- If the entity or entities listed as constructing the large-diameter, base-grouted drilled shafts are not pre-certified at the time of project advertisement, the drilled shaft contractor will not be allowed to complete work on the project.
- If a pre-certified entity does not provide the personnel and construction equipment as stated in its submitted RFQ package, the entity will not be authorized to proceed with any work until the proposed equipment and personnel are reviewed and accepted by the Department. Equipment and personnel with equivalent experience/qualifications/specifications must be supplied, as determined and approved by the Department. If the Department does not find the provided equipment or personnel equivalent, the drilled shaft contractor's pre-certification status will be subject to review and revocation for that project.

Large-diameter, Base-grouted Drilled Shaft Construction

It is anticipated that contract requirements for large-diameter base-grouted drilled shaft construction will include:

- Individual drilled shaft horizontal positional tolerance of four (4) inches measured in any direction.
- Individual drilled shaft vertical tolerance within 0.5% of vertical plumb.
- Successful installation of a non-production demonstration base-grouted drilled shaft will be required in advance of starting construction work on production drilled shafts.
- Submittal of a detailed shaft installation plan identifying all activities required to successfully construct the base-grouted drilled shafts in accordance with the contract requirements.
- Full-depth temporary casing may be required; uncased bore holes may not be allowed.
- Slurry may be used and/or required, in addition to temporary casing.
- Segmented flush bolted casing joints may be required.
- Any temporary casing will be required to be advanced a minimum of five (5) feet ahead of shaft excavation until the tip elevation of the shaft is reached.
- Vibratory or impact hammers may not be allowed for placing or extracting the temporary casing.
- Cleaning of temporary casing and bottom of the excavation prior to placing of reinforcement and concrete will be required.

- Reinforcing bar cages will be required to be placed and aligned in the drilled shaft prior to placement of concrete.
- Concrete placement may require tremies, with any temporary casing being extracted as concrete is placed.
- Submittal of drilled shaft field inspection forms and inspection notes in accordance to *“Records and Forms” Drilled Shafts: Publication No. FHWA - GEC 010, Section 19.5 and Appendix F, pages F-1 through F- 16.*
- Known man-made buried objects and other known obstructions will be identified on the contract drawings. The removal of known obstructions will be included in the base-grouted drilled shaft installation bid item, and not paid for separately.
- The contractor’s drilling equipment may be required to be capable of installing and removing a full depth temporary casing, rotating and/or oscillating the temporary casing during excavation, and excavating within the casing for shafts up to 100± feet in depth, for the site’s subsurface conditions.
- Submittal of a detailed base-grout installation plan will be required. The plan will be required to address details of the grout system to be used; grouting equipment; grout mix design; grouting procedures; monitoring equipment and field monitoring procedures; method and field procedures for determining the cessation of grouting; and the preparation and submittal of grout field inspection reports.
 - Grout pumps, standby grout pumps, and appurtenances (hoses, valves, connections, necessary hardware, etc.) capable of supplying 800 psi of grout pressure to the tip of post-grouted shafts. All grout pumps must be piston pumps with a minimum of 4 pistons and capable of supplying a continual flow of grout at the rated pressure. Details of proposed grout pumps including manufacturer, model, and operating specifications must be included in the base-grout installation plan submittal.
 - Instrumentation equipment for monitoring and measuring grout pressure and volume. Details of instrumentation provided including equipment specifications, setup, calibration documentation, data acquisition, and reporting procedures must be included in the base-grout installation plan submittal.
 - Instrumentation and survey equipment including reference beam and support for monitoring and measuring movement of the drilled shaft due to base-grout placement. Details of instrumentation and survey equipment provided including specifications, setup, calibration documentation, data acquisition and reporting procedures must be included in the base-grout installation plan submittal.
 - Submittal of grouting inspection reports to include field inspection forms and inspection notes; details of grout mix, recordings of instrumentation readings to determine cessation of grouting and lock-off of grout pressure; grout pressure plots, record of grout volume pumped verses time; maximum upward displacement of shaft and summary conclusion of grouting acceptability.

Request for Pre-Certification

Contractors seeking Departmental pre-certification to complete the base-grouted drilled shafts must submit eleven (11) copies of the following information to the Wisconsin Department of Transportation. Submittals are due on or before January 5, 2015, 4:00pm CST. Submittals after this time will not be accepted. Electronic submittals are not allowed.

Address or deliver submittals to:

Mr. Robert Arndorfer
Wisconsin Department of Transportation
3502 Kinsman Boulevard

Madison, WI 53704
robert.arndorfer@dot.wi.gov

RFQ Submittal Requirements for Large-diameter, Base-grouted Drilled Shaft Construction

If seeking pre-certification to install large-diameter, base-grouted drilled shafts on WisDOT projects, submit the following information regarding the installation of these drilled shafts:

1. Drilled Shaft Installation Plan

Provide a drilled shaft installation plan addressing the hereinbefore listed contract requirements for installation of base-grouted large diameter (6 feet and larger) drilled shafts. The submitted installation plan may be used as the contractual final drilled shaft installation plan specifically approved by the Department, if it meets the requirements set forth in the contract. The submitted drilled shaft installation plan should include the following:

- A. A listing of the type and number of individual pieces of equipment anticipated to be used on the project (including equipment photographs and specifications).
- B. The proposed staffing for the project.
- C. The planned production rate and timeline of the installation of a drilled shaft from the start of drilling through the final concrete placement and completion of the shaft.
- D. Procedure for placing reinforcing steel and concrete.
- E. Approach for casing installation and shaft excavation when boulders, cobbles and other obstructions are encountered during construction of the drilled shafts.
- F. Method of maintaining stability of the bottom of the excavation.
- G. Details of slurry operations, if it is required.
- H. Methods of handling and disposal of spoil excavation, waste slurry, waste concrete, and drilled shaft cutoffs. This should be addressed by the drilled shaft contractor even though it may be the responsibility of the general contractor.
- I. Casing removal procedures, if used.

2. Base-Grouting Plan

Provide a base-grouting plan addressing the hereinbefore listed contract requirements for performing base-grouting of 6 feet and larger diameter drilled shafts. The submitted base grouting plan may be used as the contractual final base-grouting plan specifically approved by the Department, if it meets the requirements set forth in the contract. At a minimum, the submitted base-grouting plan must include the following:

- A. Grout system details. Provide manufacturer, name, model and operating specifications of all components of the grout system and grouting equipment proposed to be used. This includes details of the grout cell at the base of the shafts, grout pumps and appurtenances (hoses, valves, connections, necessary hardware, etc.), grout plant or mixers, and grout piping details.
- B. Grout mix design.
- C. Grouting procedures.
- D. Method and field procedure for determining when grouting is completed.

- E. Monitoring procedures and monitoring equipment proposed to be used. Provide details of instrumentation and survey equipment including specifications, setup, calibration documentation, data acquisition and reporting procedures in the base-grout installation plan.
- F. Descriptions and submittal of grouting field inspection reports to include field inspection forms and inspection notes; details of grout mix, recordings of instrumentation readings to determine cessation of grouting and lock-off of grout pressure; grout pressure plots, record of grout volume pumped verses time; maximum upward displacement of shaft and a summary of grouting acceptability. Provide an example completed form and details of the data acquisition and submittal in the base-grout installation plan.

3. Quality Control Process (QCP)

Submit a detailed quality control process plan describing specific quality control methods and procedures that will be employed in the field to ensure the drilled shafts and base-grouting meet all the requirements of the contract documents as described in this RFQ. The QCP should address all quality requirements related to materials, equipment, and installation of the base grouted foundation drilled shafts, including preparation, execution of work, monitoring and documentation. Some components of the QCP may be the responsibility of others, but the QCP should address all aspects assuming the pre-certified base grouted drilled shaft contractor is responsible for the entire plan. The plan should define specific quality control and quality assurance procedures for such items including, but not limited to:

- Foundation drilled shaft concrete mix.
- Foundation drilled shaft location and plumbness.
- Excavation methods and excavation stability methods including slurry, if required.
- Temporary casing installation and removal, if used.
- Bottom of excavation cleanout.
- Reinforcing steel cage assembly, placement and alignment.
- CSL tube placement and alignment.
- Concrete mix design and placement operations.
- Procedures to ensure concrete tremie remains within the concrete during placement.
- Base grouting procedures and monitoring.

4. Experience and Qualifications of Proposed Staff.

Submit information on staff proposed for the installation of large diameter base-grouted drilled shafts that include specifics on roles and job responsibilities performed on previous projects. Once accepted, the proposed staff listed will be considered a requirement of the contractor's pre-certification. In cases where the same individual will assume multiple responsibilities, the project specific experience for each responsibility must be clearly stated within the submittal narrative.

Project-specific contract documents may allow consideration of using differing contractor personnel from those listed in the contractor's RFQ. Contractor requests for substitution for any pre-certified personnel will be reviewed by the Department. The Department will have final authority for approval or denial of such requests.

Submission of resumes which include general experience, skills and knowledge must be supplemented by specific narrative and supplemental information which addresses the requested experience and knowledge of proposed staff. Submission of general resumes without addressing the items highlighted below will be a basis of submittal rejection.

- A. Experience and qualifications of proposed field engineer/superintendent.

1. Individual who will be the drilling contractor's on-site person in charge of daily operations and be the contractor's main contact for the project.
 2. Must be an employee of the current company for at least one (1) year in good standing with three (3) years total experience performing specified work.
 3. Field experience with 6 feet and larger diameter drilled shafts. List projects and describe role and responsibilities.
 4. Field experience with base-grouted drilled shafts. List projects and describe role and responsibilities.
 5. Experience with construction methods and equipment included in the installation plan.
 6. List, as a minimum, three (3) references of project Owners or engineers familiar with the individual and provide address, phone, and e-mail contact information for each reference.
- B. Experience and qualifications of proposed on-site base-grouting expert.
1. Individual who will be the drilling contractor's on-site expert in charge of all aspects of the base-grouting of drilled shafts.
 2. It is permissible for the base-grouting expert to be a specialty subcontractor to the drilled shaft installation contractor. If the base-grouting expert is a subcontractor to the drilled shaft installation contractor, the base-grouting expert must be an employee of the base-grouting subcontractor entity for at least one (1) year in good standing with a minimum of three (3) years total drilled shaft base-grouting experience. Otherwise, the base grouting expert must be an employee of the current company for at least one (1) year in good standing with three (3) years total experience performing base grouting work.
 3. Field experience performing base-grouting of 6 feet and larger diameter drilled shafts on a minimum of three (3) projects within the last five (5) years. List projects and describe role and responsibilities.
 4. Experience with construction methods and equipment included in the installation plan.
 5. List, as a minimum, three (3) references of project Owners or engineers familiar with the individual and provide address, phone, and e-mail contact information for each reference.
- C. Experience and qualifications of crew foreman.
1. Must be employee of the current company for at least one (1) year in good standing with two (2) years total experience performing specified work.
 2. Experience with 6 feet and larger diameter drilled shafts.
 3. Experience with construction methods and equipment included in the installation plan.
- D. Experience and qualifications of drilling equipment operators.
1. Must be employee of the current company for at least one (1) year in good standing with two (2) years total experience performing specified work.
 2. Experience with 6 feet and larger diameter drilled shafts.
 3. Experience with construction methods and equipment included in the installation plan.
5. Corporate Experience, Qualifications, and References
- A. Provide a summary of the entity's project experience. The projects should focus on the entity's experience with the construction of base-grouted drilled shafts 6 feet and larger in diameter. List a minimum of five (5) projects completed in the last five (5) years. A minimum of three (3) of these projects must be on the construction of large diameter (6 feet and larger) **base-grouted** drilled shaft projects using similar construction methods and equipment as described herein. **Submission of general project information without addressing the items highlighted below**

will be a basis for submittal rejection. Provide the following for each project listed:

1. Project name and brief project description.
 2. Date construction was started.
 3. Date construction was completed.
 4. Name of project Owner.
 5. Name of key personnel who worked on project and positions held.
 6. Diameter of drilled shafts.
 7. Depth of drilled shafts.
 8. Number of shafts constructed.
 9. Total linear feet of shafts constructed.
 10. Approximate constructed value.
 11. Summary of construction method and equipment used.
 12. Summary and details of base-grouting method, procedures and equipment used.
 13. Number of shafts based-grouted.
 14. For at least one (1) project submit grouting criteria established for that project and a copy of a completed grout field inspection report / documentation noting grout volumes, pressure and shaft displacement measured in the field.
 15. Other specific information concerning large-diameter, base-grouted drilled shafts that displays competence in any requirements in this RFQ.
- B. Provide project Owner references for the projects listed for the item above. Provide affiliation, address, phone, and e-mail contact information for all references.

6. Corporate Experience, Qualifications, and References of Base-Grouting Subcontractor or Expert

This section is required only if the entity proposed to perform or direct the base-grouting work is different from, and a subcontractor to, the entity performing the drilled shaft installation work

- A. Provide a summary of the base-grouting subcontractor's project experience. The projects should focus on the base-grouting entity's experience with base-grouting large diameter (6 feet and larger) drilled shafts. List a minimum of five (5) projects completed within the last five (5) years. **Submission of general project information without addressing the items highlighted below will be a basis for submittal rejection.** Provide the following for each project listed:

1. Project name and brief project description.
2. Name of prime contractor and drilled shaft installer (if different) for which the base-grouting subcontractor performed the base-grouting work.
3. Date construction was started.
4. Date construction was completed.
5. Name of project Owner.
6. Name of key personnel who worked on project and positions held.
7. Diameter of drilled shafts.
8. Depth of drilled shafts.
9. Number of base-grouted shafts.
10. Approximate constructed value.
11. Summary and details of base-grouting method, procedures and equipment used.

Request for Qualifications

12. For at least one (1) project submit grouting criteria established for that project and a copy of a completed grout field inspection report / documentation noting grout volumes, pressure and shaft displacement measured in the field.
 13. Other specific information concerning large-diameter, base-grouted drilled shafts, that displays competence in any requirements in this RFQ.
- B. Provide project Owner references for the projects listed for the item above. Provide affiliation, address, phone, and e-mail contact information for all references.

DrilledShaft_Statewide_RFQ2_12-5-14.docx