



LG-0004 Pre-Qualification for Geotechnical Services

Oklahoma Department of Transportation

2024

RED ROCK CONSULTING

PO Box 30591
Edmond, Oklahoma 73003
405-562-3328

RED ROCK CONSULTING

July 18, 2024

Oklahoma Department of Transportation
Project Management Division
200 Northeast 21st Street
Oklahoma City, Oklahoma 73105-3204

Attention: Ms. Kristen Wallace

Re: Letter of Interest
LG-0004 Pre-Qualification for Geotechnical Investigation Services

Dear Ms. Wallace,

Please accept our qualifications for LG-0004 Pre-Qualification for Geotechnical Investigation Services. Enclosed you will find our team organization chart, company profile, references and CAP Form 255. Red Rock Consulting is proud of the experience and history of projects completed on time and below budget, both of which will be assets to future Oklahoma Department of Transportation local government projects.

Red Rock Consulting is a woman-owned, small business specializing in geotechnical engineering. Red Rock Consulting is certified by ODOT as a Disadvantaged Business Enterprise and by the SBA as a Woman-Owned Small Business. Our company began in 2009 with 8 county bridge projects. Since then, we have successfully completed more than 85 local government bridge and roadway projects. We look forward to continuing the tradition.

Thank you for the opportunity to present our team's qualifications. If you have any questions, feel free to contact us at 405-562-3328.

Yours very truly,
RED ROCK CONSULTING, LLC



Jeremy Basler, PE
Geotechnical Manager

TEAM ORGANIZATION

ENGINEERING

Kristi Simpson, PE, LEED AP
Project Engineer

Jeremy Basler, PE
Geotechnical Manager

Dawson Wiseman, EI
Project Specialist

Emma Coggin-Low, EI
Project Specialist



LAB TESTING

Chad Pierson
Manager, ODOT Certified

DRILLING

Todd Simpson
OWRB Licensed Driller

Brad Bettes
OWRB Licensed Driller



RESILIENT MODULUS

Naji Khoury, PhD, PE
Consultant

PEDOLOGICAL SURVEY

James Nevels, PhD, PE
Consultant

FWD TESTING

Naji Khoury, PhD, PE
Consultant

EXPERIENCE

Red Rock Consulting began in 2009 with strictly local government projects. Over the past 15 years, our team has successfully completed nearly 1,600 total projects, with more than half being ODOT projects and 85 being ODOT local government projects. **We grew the company by consistently providing solid engineering and communicating with the client, which are key to providing the best geotechnical solution to any project.** Red Rock Consulting's history of ODOT project experience through the years is summarized in the table below. **For more information about specific projects, refer to our CAP 255 section of this submittal.**

Red Rock Consulting's History of ODOT Projects

	County Bridge	County Road	State Bridge	State Road	Embkmt	Wall	Cut	Maint Facility
2009	5	2	0	0	0	0	0	0
2010	4	4	0	2	0	0	0	3
2011	6	4	20	21	5	4	0	0
2012	7	2	14	28	0	0	0	3
2013	7	4	18	17	7	6	1	4
2014	5	4	25	75	10	2	3	6
2015	11	1	16	63	8	4	1	2
2016	5	2	18	40	5	2	0	1
2017	1	2	19	18	11	8	1	0
2018	1	1	10	39	8	3	3	0
2019	1	0	13	12	2	3	0	0
2020	1	0	10	18	1	2	0	0
2021	0	0	11	22	2	3	1	0
2022	1	0	8	25	5	2	2	0
2023	1	1	11	22	3	4	1	0
2024	1	1	4	16	1	2	0	0

Although we now provide geotechnical engineering services for all kinds of projects, county road and bridge projects have remained a favorite project type of Red Rock employees due to the project locations, the people involved, the quick turnaround and the challenge of providing solutions for projects with small budgets.

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Red Rock Consulting has completed geotechnical projects for ODOT directly as a geotechnical consultant and as a subconsultant to civil consultants working for ODOT. The Red Rock team has observed and been a part of the interview and selection process, scoping and negotiation meetings and completing and invoicing projects. **ODOT policies and procedures we have learned through our experience with ODOT projects is briefly summarized below.**

- State of Oklahoma County Highway System Design Guidelines Manual, 2013
 - ❖ Pavement Design
 - ❖ Specifications for Geotechnical Investigations for
 - Roadway Design
 - Bridges and Related Structures
- State of Oklahoma DOT Roadway Design & Bridge Division
 - ❖ Geotechnical Fee Schedule
 - ❖ Specifications for the Geotechnical Investigations for
 - Roadway Design, August 2021
 - Bridges and Related Structures, August 2021
- Applicable ASTM and AASHTO specifications
- FHWA's Geotechnical Engineering Circular No. 5 (GEC5), 2017
- Contracting, task order and supplemental processes
- Invoicing protocol for streamlining payment

Following a great start to the company by working on local government projects, Red Rock Consulting's geotechnical projects eventually grew into larger and more complex highway projects for ODOT's Bridge and Roadway Divisions. Through the progression of these projects we have gained valuable experience in project management before and after the field investigation as well as experience in the field for a wide range of project types. **The experience going beyond scheduling and utility locators includes:**

- Environmental permitting and regulations
- Securing site access from landowners
- Permitting and coordination with railroad entities
- Coordination of multiple, project specific subconsultants (bulldozer, traffic control, railroad flagger, barge, crane, FWD, etc.)

In addition to the progression in size, the complexity of the ODOT projects has grown as well. **All technical analysis is performed in our office by Red Rock employees.** Additionally, professional relationships with leading researchers and geotechnical consultants across the country help when there are new or difficult conditions on a project, whether it be on site, in the lab or during the analysis. **Some examples of our growing technical capabilities beyond basic geotechnical principles are listed below.**

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- Embankment and cut slope stability analysis
- Foundation soil settlement analysis
- Retaining wall design, global and compound stability analysis
- Pavement evaluation and design (1993 AASHTO design equation and AASHTO Pavement ME design methods)
- Problem soil evaluation, remediation (heave/ settlement, sulfates, dispersion)
- Wick drain applications, design
- Auger cast pile, helical pile, friction pile and GeoPier applications, basic design

Experience with different design variables comes with years of evaluating actual situations in the field and providing engineering recommendations in various locations and subsurface situations. Knowing Oklahoma's soil and geologic conditions is key to successful field investigations and accurate geotechnical recommendations. **Conditions specific to Oklahoma geotechnics can include:**

- Various soil conditions: expansive, sulfates, dispersive, collapsible, fully softened
- Unique soil conditions: caliche, gypsum, mine spoils
- Various bedrock: shale, sandstone, limestone, chert, granite, basalt, marl
- Unique bedrock conditions: karstic limestone, degradable shales, variable layers
- Geotextile separation
- Geogrid reinforcement
- Extreme temperatures
- Groundwater issues and variable conditions
- Drainage and flooding issues

The senior Red Rock team members have provided geotechnical services in Oklahoma for more than 20 years. Living in Oklahoma allows us to continuously monitor the bridge and roadway designs in place and in use. This Oklahoma experience will serve the Red Rock team well while providing geotechnical services for ODOT's local government projects.

ABILITY

Red Rock Consulting's ability to perform geotechnical services for ODOT has been demonstrated time and time again over the last 15 years. As the number of ODOT projects increased over the years, the size and complexity of the geotechnical work grew from small to large. From single-span county bridges to barge-drilling for a 39-span bridge across the Red River. And from two lane gravel county roads to multi-laned highways atop 40-foot tall embankments on expansive, compressible soils. Through the progression of these projects we have gained valuable experience in the field and in evaluating geotechnical aspects of a wide range of project types.

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We have the team you want with the abilities you need. A team made up of technical geotechnical professionals, the most capable and experienced drillers, the largest variety of in situ and laboratory testing capabilities for soils and bedrock, and the most experienced specialty geotechnical subconsultants (when needed). The team faces each new challenge head-on with a problem-solving mentality and a positive attitude. Red Rock's engineers (2 PEs and 2 EIs) work as a team with the drillers, soils lab and any necessary subconsultants to provide the best overall result. We have 3 drilling crews and have the ability to hire additional contract drill crews as necessary. Our soils lab is ODOT certified and continually participates in the AMRL proficiency testing program.

With the most qualified team, significant in-state geotechnical experience and capacity to take on more work, Red Rock Consulting is fully able to provide geotechnical engineering services for local government projects, continuing the tradition of successful project partnership with ODOT.

COMPANY INFORMATION

Red Rock Consulting is a woman-owned engineering firm specializing in geotechnical engineering. Since 2009, Red Rock Consulting has been providing superior geotechnical engineering services on a wide variety of projects ranging from roads and bridges to large university and commercial developments to multi-state petroleum pipelines and facilities. We combine technical expertise with skilled project management and responsive personal service to deliver solid results on time and within budget.

Our staff of 8 is based in Edmond, Oklahoma, and consists of 4 engineers, an ODOT certified soils lab technician, 2 lab assistants, and an administrative professional. Red Rock Consulting's ODOT approved soils laboratory is second to none in the state of Oklahoma and we have more in situ soil and rock testing field equipment than any of our competitors. We have the most experienced and reliable drillers around. The senior team members of Red Rock Consulting and DSO have been working together in a seamless partnership for more than 15 years. **For more information about our capabilities, refer to the *Experience and Specialized Qualifications* portions of this submittal.**

Clients of Red Rock Consulting are confident in more than just our team and equipment capabilities, they are also confident in our results. **An engineer is on-site during drilling for every project**, which is invaluable to the quality of the report. Engineers are frequently in the lab visiting about projects and scheduling as well as performing the more intricate testing. Geotechnical reports are checked and re-checked with an internal quality control program.

SPECIALIZED QUALIFICATIONS

PEOPLE

At Red Rock Consulting, we take pride in being a more technical geotechnical engineering firm. All our engineers have master's degrees in civil engineering with a focus in geotechnical engineering. They also have extensive soils laboratory experience, excellent project management skills and are all-around good people that are easy to communicate with and care about doing a good job, no matter how big or small the project may be. By keeping core team members in place over the years and adding new staff with different backgrounds, the experience and technical expertise remains and becomes more diverse as the company grows.

FIELD TESTING EQUIPMENT

Advanced field testing equipment to evaluate soils in situ are essential to any highly technical geotechnical investigation. Red Rock Consulting has the following in situ soil and rock field testing equipment in addition to typical field (drilling and testing) equipment:

- Flat Plate Dilatometer (DMT)
- Menard G Am II Pressuremeter (PMT)
- Piston Tube Sampler
- Dynamic Cone Penetrometer (DCP)
- Electrical Resistivity Meter
- Shear Vane
- Pavement Core Trailer

In addition to Red Rock Consulting's field testing equipment, our on call subconsultants also have highly specialized in situ field testing equipment. Dr. Naji Khoury maintains falling weight deflectometer (FWD) pavement testing equipment here in Oklahoma. We contract with Dr. Khoury's crew when we need to evaluate existing pavement and subgrade layers in place, such as for a proposed mill and overlay project. Dr. Jim Nevels is always available for performing in situ testing of overburden materials with his cone penetrometer test (CPT) rig. We hire Dr. Nevels and his CPT rig when we need more in-depth and continuous information about soft, compressible soils. Examples of situations where a CPT rig might be useful could include embankment foundation soil settlement or slope failure projects.

SOILS LABORATORY

The Red Rock Consulting soils lab is ODOT approved and continually participates in the AMRL proficiency testing program. Our soils lab technician is ODOT certified and we have the ability to hire another ODOT certified lab technician as needed. Our soils mechanics lab is run by a professional engineer and has testing capabilities not found in-house in the other geotechnical labs in Oklahoma. Advanced testing equipment to evaluate soils in the lab are critical to any

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highly technical geotechnical investigation. Highly technical soils testing equipment in-house allows for less sample disturbance, more oversight and quicker turnaround time. Red Rock Consulting has the soil mechanics lab equipment necessary to perform the tests listed below in addition to typical geotechnical lab equipment for soil classifications and gradations.

- Consolidated Undrained (CU), Unconsolidated Undrained (UU) and Consolidated Drained (CD) Triaxial Compression
- One – Dimensional Consolidation, One Dimensional Swell/ Collapse
- Direct Shear
- Permeability
- Uniaxial (Unconfined) Compression for Soil and Rock
- Hydrometer and Double Hydrometer, Pinhole Dispersion, Crumb Test
- Slake Durability
- Soil Resistivity, pH, Soluble Sulfates
- California Bearing Ratio (CBR), Standard Proctor
- Point Load for Broken Rock

CAPACITY

It is anticipated that future ODOT local government projects would take 3 to 5 weeks to complete, depending upon the size and complexity of the project. Red Rock Consulting has several projects pending with consultants. All these projects are on different schedules, which means they will begin and end at various times. Most geotechnical projects take 4 to 6 weeks to complete. The rotation is steady, but by no means overwhelming. The Red Rock team has the capacity to take on much more than the current workload.

PAST PERFORMANCE

Red Rock Consulting has a proven track record of completing geotechnical projects for ODOT in a timely, professional manner with accurate engineering judgement. The positive performance of Red Rock Consulting for ODOT and, specifically, the local government division, over the past 15 years is indicative of the quality to be expected with the Red Rock team. Our clients rely on us to perform the geotechnical investigation and provide a concise, accurate and informative report on time and within the negotiated fee. This is how Red Rock Consulting has built a large clientele of the most respected agencies, consultants and owners. **References have been provided on the following page.**

REFERENCES

“Red Rock Consulting has always been Poe’s “go-to” geotechnical partner for all of our transportation engineering needs. They have an outstanding team of technical staff with the experience to handle all of our most complex geotechnical challenges. Red Rock has always provided us with exceptional expertise and professionalism. They are dedicated to providing the highest quality services. Their thoroughness in conducting site investigations ensures comprehensive and accurate assessments, which form the foundation for a successful project outcome. Red Rock’s knowledge of ODOT and municipal guidelines, reliability, and commitment to excellence make them an invaluable partner in achieving project success.”

Matt Brown, PE, PMP – Roadway Project Manager/Vice President, Poe & Associates, Inc

“Red Rock Consulting has been part of the Grossman and Keith team for multiple ODOT bridge and roadway projects. It is always a pleasure to do business with those that share your desire to produce quality work. They are timely, responsive and, on more than one occasion, have gone above and beyond to keep the project moving forward. We will continue to call on their geotechnical expertise for our future ODOT projects.”

Brad Donwerth, PE – Vice President, Grossman & Keith Engineering Co

“Red Rock Consulting has distinguished themselves with their level of responsiveness throughout the development process on numerous projects. Kristi has established a culture of exceeding expectations among her entire staff. The presentation and quality of their work is among the best we’ve experienced within the geotechnical industry.”

Chad Grinsteiner, PE, SE – Structures Department Manager, CEC

“Kristi and Jeremy have been friends of Olsson for many years and Red Rock Consulting has developed into one of our “go-to” firms for our transportation projects. We have always appreciated how easy they are to work with, their responsiveness and their expertise. We look forward to continuing to work with them for many years to come.”

Russell Beaty, PE – Transportation Team Leader, Olsson

“Kristi and the Red Rock Consulting staff have always been a brilliant source of geotechnical knowledge for our engineering design team. They are experts in not only the stuff below the surface, but a tremendous resource for pavement design and challenging sub-surface bases.”

J Bret Cabbiness, PE - Senior Project Manager, Garver

“Red Rock Consulting has performed geotechnical services for several of our ODOT bridge and roadway projects. Their knowledge as the premier geotechnical company in Oklahoma serves them well to be a great assistance on projects within the state. Their staff is both local and extremely knowledgeable of the requirements for the Oklahoma Department of Transportation. We would recommend using them on any ODOT project within the state.”

Don Steel, PE – Project Manager, CP&Y

“CEC routinely uses Red Rock Consulting for geotechnical engineering and pavement design needs on our transportation design projects. The personnel at Red Rock are very knowledgeable of what ODOT requires and expects for the geotechnical engineering portion of their projects and they are always very responsive to our needs.”

J Taylor Barnes, PE – Transportation Practice Leader, CEC

This form, or its pages, may be copied or computer generated, but not altered.

CAP Form M255 is the companion form to CAP Form M254 which permits Architects, Landscape Architects, Engineers and Land Surveyors to respond to invitations to be considered for design projects from the State of Oklahoma. It permits consultants to tailor their response to the specific project being considered by an agency.

This form is used in conjunction with CAP Form M254 in the same manner as Federal Standard Forms 254 and 255 are used for Federal selections. CAP Form M255 is to be used for a specific project and CAP Form M254 is used to be registered for consideration. **These forms have been designed to be as similar as possible to the Federal forms but SF254 and SF255 may NOT be used for State registration and selection.**

This form is divided into (6) break sections.

Section 6 (a. through g.) are expected to be reused for all proposed team members for the specific project being responded to. Use as many sheets as necessary, simply provide the proper page numbering in the bottom right for final submission.

Return this completed form to the agency issuing the invitation with a letter requesting consideration for the proposed project.

Instructions for Completing (Numbers below correspond to numbers contained on form.)

1. Enter the description of the project, as it appears in the letter you received announcing the project. If the agency has used a number to identify the project, include that number.
- 2a. Enter the date of the letter soliciting the project. You must reply to the Using Agency as specified, to be considered. This completed form must accompany your Letter of Interest.
- 2b. Enter the name of the Using Agency from which you received the announcement letter.
- 2c. Provide the CAP Solicitation Number of this response.
- 3a. List the legal name and address of the firm or joint-venture submitting this form.
- 3b. All firms, other than individuals practicing under their own license, or joint ventures must be certified by the Oklahoma Board of Registration for Professional Engineers and Land Surveyors or the Oklahoma Board of Governors for Licensed Architects and Landscape Architects.
- 3c. Enter the firm's EIN/TIN.
- 3d. Enter the name, title, and email of the principal representing the firm or joint-venture submitting this form.
- 3e. Enter the address of the office that will perform the work on this project, if it is different from that shown in item 3a.
4. List the number of personnel, by discipline, to be used on **this specific project**. List them only once by primary function. If functions are not shown, add them in the blanks provided.
5. If a joint-venture is planned for this project, list the member firms and their respective areas of expertise here. All members must be registered with Construction and Properties. Provide total number of employees permanently employed by the firm listed. Do not include employees of consultants or sub-consultants. A separate, complete CAP Form M255 is required for additional consultants or sub-consultants.
6. This page is for the resumes of the key personnel. It may be copied as necessary. It should be noted that Oklahoma law requires that design work for Oklahoma projects require the seals of architects and engineers licensed in the State of Oklahoma. Images and/or photographs are not requested and should not be provided.
7. This page is for the listing of projects accomplished by the (P)artnership, (C)orporation, (J)oint-(V)enture, or (I)ndividual, which best represents the qualifications of the firm for the type of project similar to the one announced. Do not include projects of consultants or sub-consultants. Images and/or photographs are not requested and should not be provided.
8. This area may be used to provide any other information not covered elsewhere on the form, which is pertinent to this project. List any special qualifications, which are applicable to this project. Images and/or photographs are not requested and should not be provided.
9. All prospective consultants must be aware of the quoted section of law from Title 61 of the Oklahoma Statutes. The signature in Item 11 acknowledges that the excerpt has been read and the information provided is accurate.
10. A principal of the firm must sign and date the questionnaire for it to be accepted. Either original or electronic signatures are required.



1. Project Name / Location for which Firm is responding:

FOR OFFICIAL STATE RECEIVED STAMP

Procurement Division

CAP Form M255
Consultant Services for a
Specific Project

2a. Firm (or Joint-Venture) Legal Name and Address / City, ST ZIP:

3d. Name, Title, & Email of Principal Contact:

2c. Using Agency originating Solicitation:

2a. CAP Solicitation Number:

2b. Date of Solicitation:

3a. Firm (or Joint-Venture) Legal Name and Address / City, ST ZIP:

3b. Certificate of Authority Number:

3e. Address / City, ST ZIP of office to perform work, if different from Item 3a:

3c. EIN/TIN:

4. Personnel by Discipline: (List each person only once, by primary function.)

Administrative

Economists

Mechanical Engineers

Architects

Electrical Engineers

Mining Engineers

CAD/CADD Technicians

Estimators

Planners: Urban/Regional

Chemical Engineers

Geologists

Sanitary Engineers

Civil Engineers

Hydrologists

Soil Engineers

Construction Inspectors

Interior Designers

Specification Writers

Draftsmen

Landscape Architects

Structural Engineers

Ecologists

Land Surveyors

Surveyors

Total Personnel

5a. If submittal is by a JOINT-VENTURE, list participating firms and outline specific areas of responsibility (including administrative, technical and financial) for each firm: All firms and the joint venture MUST be registered with Construction and Properties, cap@omes.ok.gov.

5b. Has this Joint-Venture previously worked together? Yes No If YES, how many times? _____

6. Brief resume of key persons, specialists, and individual consultants employed by sub-consultants anticipated for **this Specific Project**.

a. Name and Title: _____	a. Name and Title: _____
b. Project Assignment: _____	b. Project Assignment: _____
c. Name of firm with which associated: _____	c. Name of firm with which associated: _____
d. Years experience - with this firm: _____ with other firms: _____	d. Years experience - with this firm: _____ with other firms: _____
e. Education: Degree(s)/Year/Specialization _____	e. Education: Degree(s)/Year/Specialization _____
f. Active Registration (State/Year first registered/Discipline/Oklahoma License Number): _____	f. Active Registration (State/Year first registered/Discipline/Oklahoma License Number): _____
Oklahoma Certificate of Authority (if any): _____	Oklahoma Certificate of Authority (if any): _____
g. Dominate experience and qualifications <u>relevant</u> to this Specific Project: _____	g. Dominate experience and qualifications <u>relevant</u> to this Specific Project: _____

6. Brief resume of key persons, specialists, and individual consultants employed by sub-consultants anticipated for **this Specific Project**.

a. Name and Title: _____	a. Name and Title: _____
b. Project Assignment: _____	b. Project Assignment: _____
c. Name of firm with which associated: _____	c. Name of firm with which associated: _____
d. Years experience - with this firm: _____ with other firms: _____	d. Years experience - with this firm: _____ with other firms: _____
e. Education: Degree(s)/Year/Specialization _____	e. Education: Degree(s)/Year/Specialization _____
f. Active Registration (State/Year first registered/Discipline/Oklahoma License Number): _____ Oklahoma Certificate of Authority (if any): _____	f. Active Registration (State/Year first registered/Discipline/Oklahoma License Number): _____ Oklahoma Certificate of Authority (if any): _____
g. Dominate experience and qualifications <u>relevant</u> to this Specific Project: _____	g. Dominate experience and qualifications <u>relevant</u> to this Specific Project: _____

7. Work by firm or members which best illustrates current qualifications relevant to **this specific project** (list no more than 10 projects):

a. Project Name and Location	"P", "C", "JV" or "I"	b. Nature of Firms Responsibility	c. Project Owner's Name and Address	d. Completion Date	e. Est./Final Cost (000's) Entire Project Firm's Portion
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

8. Space provided for any additional relative information or description of resources supporting your firm's qualifications for **this Specific Project**.

9. 61 O.S., § 64. Offenses

Any consultant or person doing architectural, surveying or engineering work for the State of Oklahoma, their agents, servants or employees, who shall receive gratuity from any contractor or builder of any public building or works, or solicit, receive or make any political contribution from or to a contractor or a builder of any public building or works, or who attempts to interfere with the competitive bidding process of the State of Oklahoma in any manner, is guilty of a misdemeanor, and upon conviction thereof shall be fined not less than One Hundred Dollars (\$100.00) nor more than Five Hundred Dollars (\$500.00), and by imprisonment in the county jail for not less than six (6) months nor more than one (1) year. Any contractor or builder of any public building or works, their agents, servants or employees, who shall offer any gratuity or political contribution to any consultant doing architectural, surveying or engineering work for the State of Oklahoma, or who attempts to interfere with the competitive bidding process of the State of Oklahoma in any manner, is guilty of a misdemeanor, and upon conviction thereof shall be fined not less than One Hundred Dollars (\$100.00) nor more than Five Hundred Dollars (\$500.00), and by imprisonment in the county jail for not less than six (6) months nor more than one (1) year.

10. The undersigned hereby solemnly swears or affirms, under penalty of perjury, that the information stated herein is true and correct.

(Consultant Signature)

(Printed Name and Title)

(Date)

Return this form along with your letter expressing interest to the agency from whom you received the notice of this project.