



## **Aviation Experience**

Geotechnical Engineering  
Construction Materials Testing



## OFFICE LOCATIONS

### San Antonio

142 Chula Vista  
San Antonio, TX 78232  
P (210) 308-5884

### Austin

13581 Pond Springs Rd,  
Ste 210  
Austin, TX 78729  
P (512) 428-5550

### Eagle Pass

1295 Thompson Road  
Eagle Pass, TX 78852  
P (830) 757-8891

### Corpus Christi

5233 IH-37, Ste B-12  
Corpus Christi, TX  
78408  
P (361) 288-2670

### Dallas-Fort Worth

1312 E Corporate Dr,  
Ste B-1  
Arlington, TX 76006  
P (817) 812-3500

## CERTIFICATIONS

Texas Board of Professional Engineers  
Firm Registration No. F-32

Texas Board of Professional Geoscientists  
Firm Registration No. 50302

TxDOT Certified Testing Laboratory  
Austin, Dallas, & San Antonio

### TxDOT Pre-Certifications #428

- 12.1.1 - Asphaltic Concrete
- 12.1.2 - Portland Cement Concrete
- 12.1.3 - Materials Engineering
- 12.1.4 - Asphaltic Concrete Placement
- 12.1.5 - Portland Cement Concrete Placement
- 12.1.6 - Embankment / Subgrade / Backfill / Base Production
- 12.1.7 - Embankment / Subgrade / Backfill / Base Placement
- 12.2.1 - Plant Inspection and Testing
- 14.1.1 - Soil Exploration
- 14.2.1 - Geotechnical Testing
- 14.3.1 - Transportation Foundation Studies
- 14.4.1 - Building Foundation Studies
- 14.5.1 - Evaluation & Design of Geotechnical Related Structures

Texas Comptroller of Public Accounts  
Historically Underutilized Business (HUB)

City of Austin  
Minority Business Enterprise (MBE)

SCTRCA  
Small Business Enterprise (SBE)  
Minority Business Enterprise (MBE)  
Hispanic American Business Enterprise (HABE)  
Disadvantage Business Enterprise (DBE)

NCTRCA  
Minority Business Enterprise (MBE)

American Association of State Highway & Transportation Officials (AASHTO)

American Materials Reference Laboratory (AMRL)

United States Army Corps of Engineers (USACE)  
Validated Laboratory

## AT A GLANCE



Arias & Associates, Inc., dba ARIAS, is a registered firm in good standing with the Texas Board of Professional Engineers and Land Surveyors (TBPELS) providing Geotechnical Engineering and Construction Materials Testing Services with a full-time staff of over 100 team members between our five (5) office locations in San Antonio, Arlington, Austin, Corpus Christi, and Eagle Pass, Texas. During our 26 years in business, we've completed over 13,500 Geotechnical Engineering and Construction Materials Testing projects across the state of Texas.

### GEOTECHNICAL ENGINEERING SERVICES

- Subsurface Exploration Programs
- Expansive Soil Mitigation Recommendations
- Laboratory Testing
- Ground Improvement & Soil Modification
- Subgrade Evaluation
- Plan & Specifications Review
- Pavement Evaluation
- Groundwater Studies Foundation Analyses
- Forensic Evaluation and Recommendations
- Local & Global Stability Analyses
- In Situ Testing & Observation
- Materials Evaluation
- Foundation & Pavement Recommendations

### CONSTRUCTION MATERIALS TESTING SERVICES

- Foundation Construction
- Earthwork & Site Preparation
- Aggregate Materials
- Asphalt Materials
- Portland Cement Concrete
- Concrete & Asphalt Mix Designs
- Post-Tension Concrete
- Pre-Cast Concrete Components
- Soils & Soil / Lime / Cement Mixtures
- Drilled Pier & Pilot Hold Observation
- Masonry & Grout
- Special Inspections
- Structural & Reinforcing Steel
- Certified Welding Inspections

ARIAS has an established in-house laboratory that meets the standards of the American Standard Testing Materials (ASTM) specifications of ASTM E-329 for Inspection and Testing Agencies for soil, concrete, steel, and bituminous materials as used in construction. We maintain testing equipment to provide the testing needs required by the project specifications. All of our equipment is calibrated by an independent testing agency in accordance with the National Bureau of Standards. In addition, ARIAS is accredited by the American Association of State Highway & Transportation Officials (AASHTO), the United States Army Corps of Engineers (USACE), and the Texas Department of Transportation (TxDOT).



SAIA CONRAC



ARIA Apron



CCIA E GA Apron



## FIRM OVERVIEW



### OUR MOTTO

## DEVELOPING FOUNDATIONS IN LIFE

### FIRM HISTORY

Arias & Associates, Inc. dba ARIAS was formed in 1996, by Robert P. Arias, P.E. Mr. Arias is a native of San Antonio with more than 40 years of engineering experience. To date we've completed over 13,500 Geotechnical Engineering and Construction Materials Testing projects across the state of Texas. We currently have over 100 team members between our five (5) office locations in San Antonio, Austin, Corpus Christi, Dallas-Fort Worth, and Eagle Pass, Texas.



Founder & CEO  
Robert Arias, P.E.

ARIAS brings a unique combination of technical experience, local knowledge, and a highly successful project completion record. Our mission, first and foremost, is to serve our clients quickly, accurately, and efficiently by providing optimum Geotechnical Engineering and Construction Materials Testing Services along with unbeatable client care. Our philosophy is that quality, response, and efficiency can all be achieved; in fact, they all go together. A quality work product, done correctly the first time, is the least costly.

We understand the impact our services have on any project and are confident in our ability to exceed client expectations. Our team has provided Geotechnical Engineering and Construction Materials Testing Services for various municipal, federal, educational, and private clients in Texas. Over the years, we have developed an expertise for airport projects including construction and renovations for numerous runways, taxiways, aprons, hangars, facilities, parking lots, roads, and other projects. Some of these clients include Dallas Love Field Airport, San Antonio International Airport (SAIA), Stinson Municipal Airport, Austin-Bergstrom International Airport (ABIA), Corpus Christi International Airport (CCIA), and Del Rio International Airport (DRIA).

ARIAS' Professional Engineers and Project Managers each have 8 to 50+ years of experience successfully completing similar projects. ARIAS employs a technical staff certified through one or more of the following agencies: The National Institute for Certification in Engineering Technologies (NICET), the American Concrete Institute (ACI), the American Welding Society (AWS), the Pre-cast/Prestressed Concrete Institute (PCI), the Post-Tensioned Institute (PTI), Texas Asphalt Pavement Association (TXAPA), and the Texas Board of Professional Engineers (TBPE). All work is conducted under the guidance and direction of a Registered Professional Engineer (P.E.) licensed to work in the State of Texas, as required by law.

ARIAS is proud to be certified by the South Central Texas Regional Certification Agency (SCTRCA) as a Disadvantaged Business Enterprise (DBE), a Small Business Enterprise (SBE), a Minority Business Enterprise (MBE), and a Hispanic American Business Enterprise (HABE). We are also certified as a Minority Business Enterprise (MBE) by the North Central Texas Regional Certification Agency (NCTRCA) and a Historically Underutilized Business (HUB) by the State. Additionally, we are designated as a Minority Business Enterprise (MBE) by the City of Austin.



## GEOTECHNICAL ENGINEERING SERVICES

Our geotechnical engineering services involve exploration of the subsurface, laboratory testing of subsurface samples, engineering analysis, and development of recommendations for various types of projects. ARIAS' licensed geotechnical engineers and engineers-in-training have diverse project experiences with earth materials including soil, rock, and groundwater. Geotechnical engineering services would include, but not be limited to the following:

- Project Plan & Specification Reviews
- Feasibility Studies for New Construction / Major Renovation Projects
- Field Exploration & Laboratory Analysis
- Surface Soil Boring Drilling & Sampling
- Laboratory Testing of Soil and Rock Materials per ASTM Specifications
- Site Preparation & Development
- Grading
- Foundation Design Recommendations
- Pavement Design
- Retaining Wall Recommendations
- Geotechnical Reporting
- Surface Drainage
- Expansive Soil Mitigation Recommendations
- Groundwater Studies Foundation Analyses
- Forensic Evaluation and Recommendations

Our team brings a unique combination of technical experience, local knowledge, and a highly successful project completion record. Expansive soil related foundation movements and pavement distress, drilled pier installation difficulties, groundwater issues, building pad quality control, and concrete quality issues are all important construction concerns for any construction projects. By considering these concerns in conjunction with the Owner's procedures, needs, and goals, ARIAS is able to provide exceptional professional services for projects.

We own and maintain both laboratory and field-testing equipment to service the testing needs required by individual project specifications, including testing equipment for asphalt, soil, concrete, and aggregates. Additionally, we maintain a vehicle fleet of full size trucks for our personnel to travel to and from project sites in order to perform field services. Each of these vehicles is equipped with a mobile phone, GPS device, fire extinguisher, first-aid kit, Personal Protective Equipment (PPE), and a complete set of field-testing equipment for asphalt, soils, concrete, and aggregates.

Upon receipt of a Geotechnical Engineering assignment, the project principal will assign an ARIAS Geotechnical Engineering Project Manager. Prior to developing a boring plan for a proposed Geotechnical Engineering project, the ARIAS Project Manager would review any available information such as the NRCS Soil Survey, old borings, and retrievable documents including geologic and USDA maps. In addition, field reconnaissance to determine site access and to identify existing conditions would be performed. The ARIAS Geotechnical Engineering Project Manager would also meet with the Project Team in order to discuss and coordinate the project scope and requirements in order to fully understand the needs and goals of the Project Team. Discussions at this time would typically include anticipated boring depths and locations and potential conflicts, as well as anticipated types of project elements and depths or loads, foundation types, pavement types and traffic loads, and cut/fill areas.



*Drilled Pier Drilling*



*Soil Samples*



*Sieve Analysis Lab Testing*

**WE KNOW HOW OUR SERVICES IMPACT A PROJECT'S DESIGN, CONSTRUCTION, AND PERFORMANCE.**



## GEOTECHNICAL ENGINEERING SERVICES

Based upon the initial meeting(s) and all information gathered, we would then prepare a cost estimate proposal for Geotechnical Engineering services for the specific project. Upon approval, we would coordinate our boring locations, utility clearances, and drilling schedule with appropriate and Project Team personnel.

Upon receipt of any applicable permits and utility clearance approval, mobilization of the drill rig(s), crew and ARIAS field representatives would then follow. We would utilize a sub-consultant to drill the soil borings required. The soil borings and sampling would be performed in accordance with applicable ASTM guidelines and standards (ASTM D1586 for Split Spoon Sampling and ASTM D1587 for Shelby Tube Sampling). Materials would be sampled to the depths determined previously in the proposal. Samples of the encountered earth materials would be obtained and logged and groundwater observations would be made and recorded during the drilling operations by our Geotechnical Logger. If groundwater is encountered, the groundwater levels within the open borehole(s) would be recorded at the time of drilling and immediately following drilling. After completion, the test borings would be backfilled with materials specified by requirements, and samples obtained would be returned to the ARIAS laboratory for testing, evaluation, and further study.

The samples transported to our laboratory by our field personnel will be reviewed by the Geotechnical Engineering Project Manager who would assign the appropriate laboratory tests. Laboratory tests, performed in accordance with ASTM procedures, would likely include, but not necessarily be limited to, the following:

- Moisture Content Tests (ASTM D2216)
- Atterberg Limits (Liquid and Plastic Limits) for
- Determination of PI (ASTM D4318)
- Percent Finer than the #200 Sieve (ASTM D1140)
- Particle Size Distribution Hydrometer (ASTM D422)
- Unconfined Compressive Strength (ASTM D2166)
- Dry Density (ASTM D2937)
- Percent Swell (ASTM D4546)
- Sulfate Tests (ASTM C1580)

The results of the laboratory tests along with the field logs would be utilized to construct computer-generated boring logs showing the soil classifications, test results, and groundwater observations. Engineering analysis would be performed in order to provide appropriate Geotechnical Engineering related design parameters and construction considerations for the particular project. A Geotechnical Engineering report would be prepared by the ARIAS Geotechnical Engineering Project Manager and this report would be reviewed, edited and approved by the Senior Author. The Senior Author would be one of ARIAS' Senior Geotechnical Engineers. Once reviewed and approved by the Senior Author, the Geotechnical Engineering Report would be signed, sealed, and submitted to the appropriate recipients.

Our reports will contain project location maps, boring location maps, geotechnical (geological) profiles, boring logs and other exhibits, as required, and will be presented in electronic format as well as bound paper documents if requested. At any time during design or construction of the project, ARIAS Geotechnical Engineering Engineers would be available to meet with the Owner and the Project Team in order to answer questions or to provide input, information, and interim or additional recommendations.

**ALL LABORATORY TESTING IS PERFORMED IN ACCORDANCE WITH ASTM GUIDELINES AND STANDARDS.**



*Soil Boring on a Drilling Rig*



## CONSTRUCTION MATERIALS TESTING SERVICES

ARIAS understands that Construction Materials Testing (CMT) has a significant impact on the success of a project. It is our goal to produce accurate and reliable test results, establishing specification compliance or non-compliance, in the least amount of time required. In short, it is our goal to **never**:

1. Pass what should have failed,
2. Fail what should have passed, or
3. Cause unnecessary delays.

These goals are critical to any construction project. Using digital technology to achieve these goals, we have developed a next-day reporting method and culture. By reporting accurate, quality, next-day results, we have found that Owner, Contractor, and Laboratory are all able to realize significant cost and schedule efficiencies.

Written assignments are generally made by email. Once an assignment is made, we set it up as a “Job” under the Project. At the time of assignment, we setup the Job in our accounting system (CORE), which feeds into our reporting database system, *MetaField*<sup>®</sup>. Specifically, we input the Project Name, Project Description, PO Number, Project address, travel distance, and Distribution names and email addresses. We then notify the Project Team and owner by email that we have received the written assignment, that we are ready for on-call requests for services, and provide dispatch contact information.

For CMT projects, Standard Specifications for the client will be set up in *MetaField*<sup>®</sup>, our reporting database. Any Special Provisions made to the test specifications are made in *MetaField*<sup>®</sup> at the Job assignment level. Thorough set up of the Contract, the Project, and each Job is critical to producing and distributing efficient, accurate and timely reports and invoices.

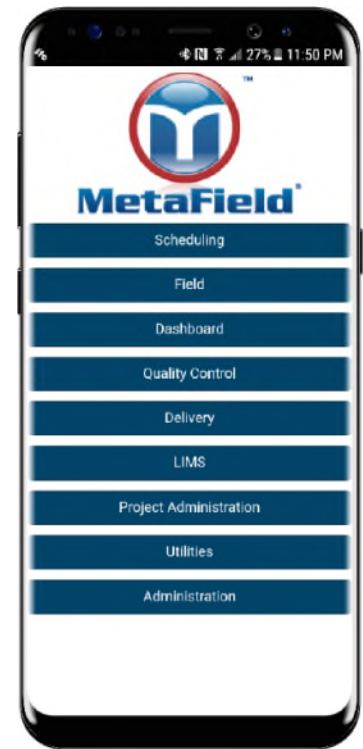
### CALL-OUT TESTING REQUESTS

Call-out requests are received at our office via phone. The request is received by our dispatcher at each office. The dispatcher immediately inputs the request into *MetaField*<sup>®</sup>, including the time of the request, name and phone number of the project manager. *MetaField*<sup>®</sup> provides the following benefits:

- Records all pertinent details, including requested service, time, and location details.
- Records in a cloud-based calendar, available to all other dispatchers, Project Principals, Project Managers, and Project Professionals.
- Alerts the user if the Technician assigned to the request is not certified as required by the contract.
- Notifies the Technician by text that he/she has a new assignment and provides the name and phone number of who made the request. Further details of the assignment can be accessed via the *MetaField*<sup>®</sup> app on the Technician’s cell phone.
- Tracks the status of each assignment through the following stages: Assigned, Accepted, Canceled, and Completed.

As the Technician performs the work, *MetaField*<sup>®</sup> also provides for the following advantages, as applicable for the assignment (soils, concrete, etc.):

- Controlled vocabulary for Locations of earthwork and concrete structures.
- Soil moisture and compaction specifications for each Location.



**THE METAFIELD<sup>®</sup> APP  
ALLOWS OUR TEAM  
TO EFFICIENTLY  
INPUT DATA TO OUR  
CLOUD-BASED  
WHILE AT THE JOB  
SITE.**