ADDENDUM 2

PROJECT NAME: Nani Falcone Park

DATE: March 28, 2025

PROJECT NO: 23-04001

This addendum is separated into sections for convenience; however, all respondents, bidders, contractors, subcontractors, material men, and other parties must be responsible for reading the entire addendum. The failure to list an item or items in all affected sections of this addendum does not relieve any party affected from performing as per instructions, providing that the information is set forth one time any place in this addendum. These documents will be attached to and will become part of the Contract Documents for this project. The respondent/bidder is required to acknowledge the receipt of this addendum.

GENERAL:

1. The following changes and/or additions to the Contract Documents, via this addendum, must apply to proposals made for and to the execution of the various parts of the work affected thereby.

2. Careful note of the Addendum must be taken by all interested parties and all trades affected must be fully advised in their performance of the work involved.

3. This Addendum is hereby made part of the project requirements and contract documents for the above reference project. Ensure to acknowledge this Addendum in CivCast when downloading this Addendum. Acknowledgement of this Addendum is a requirement in order to submit bid in CivCast. This addendum consists of the items and their associated attachments as listed below:

A. ADMINISTRATIVE CHANGES TO BID DOCUMENTS:

1. Current Bid Opening Date: Friday, March 28,2025
2. New Bid Opening Date: Friday, April 4, 2025
3. Add Geo-Technical Report

B. CHANGES TO PLANS / SPECIFICATIONS:

1. Updated Civil Sheet (C-5)

C. QUESTIONS & RESPONSES:

1. **QUESTION**: WHAT DETAIL SHOULD BE USED FOR THE ASPHALT DESIGN?**ANSWER**: PLEASE REFER TO THE UPDATED CIVIL SHEET (C-5), WHICH INCLUDES A TABLE OUTLINING THE RECOMMENDED PAVING DESIGN AS SPECIFIED IN THE GEOTECHNICAL REPORT.

SIGNED AND SEALED BY CONSULTANT (Engineer/Architect of Record)

By signing and sealing this addendum, the Engineer/Architect of Record acknowledges that the sign/seal is only for changes/clarifications to the items associated with the Engineer's/Architect's work referenced in this addendum.

Jaime E. Contreras

Jaime Contreras
Procurement Manager
Finance Department - Procurement Division

END OF ADDENDUM NO. 2

Geotechnical Engineering Study

Nani Falcone Community Park
New Parking Area
San Antonio, Texas

Arias Job No. 2014-297

ARIAS & ASSOCIATES
Geotechnical • Environmental • Testing

Prepared For
City of San Antonio

April 14, 2014

ARIAS & ASSOCIATES
Geotechnical • Environmental • Testing

April 14, 2014
Arias Job No. 2014-297

VIA Email: mark.wittlinger@sanantonio.gov

Mr. Mark Wittlinger
City of San Antonio (COSA)
Transportation and Capital Improvements (TCI)
114 W. Commerce, 7th Floor
San Antonio, Texas 78205

RE: Geotechnical Engineering Study
New Parking Area
Nani Falcone Community Park
Mystic Park and Bandera Road
San Antonio, Texas

Dear Mr. Wittlinger:

This report presents the results of a Geotechnical Engineering Study for proposed new Parking Area at the Nani Falcone Community Park located near Mystic Park and Bandera Road in San Antonio, Texas. This study was performed in general accordance with Arias & Associates, Inc. Proposal No. 2014-297, dated March 25, 2014. Notice-to-proceed was provided in an e-mailed letter, dated March 25, 2014, by Mr. Mark Wittlinger, with the City of San Antonio.

The purpose of this geotechnical engineering study was to establish pavement engineering properties of the subsurface soil and groundwater conditions present at the site. The scope of the study is to provide geotechnical engineering criteria for use by design engineers in preparing the pavement design. Our findings and recommendations should be incorporated into the design and construction documents for the proposed development.

The long-term success of the project will be affected by the quality of materials used for construction and the adherence of the construction to the project plans and specifications. The quality of construction can be evaluated by implementing Quality Assurance (QA) testing. As the Geotechnical Engineer of Record (GER), we recommend that the earthwork and foundation construction be tested and observed by Arias in accordance with the report recommendations. A summary of our qualifications to provide QA testing is discussed in the "Quality Assurance Testing" section of this report. Furthermore, a message to the Owner with regard to QA testing is provided in the ASFE publication included in Appendix E.

Thank you for the opportunity to be of service to you.

Sincerely,
Arias & Associates, Inc.
TBPE Registration No: F-32

Jerry D. Shepherd, P.E.
Senior Geotechnical Engineer
4-14-14

STATE OF TEXAS
JERRY D. SHEPHERD
112142
LICENSED
PROFESSIONAL ENGINEER

Christopher M. Szymczak, P.E.
Senior Geotechnical Engineer

1295 Thompson Rd
Eagle Pass, Texas 78852
(830) 757-8891
(80) 757-8899 Fax

(210) 308-5886 Fax

5233 IH 37, Suite B-12
Corpus Christi, Texas 78408
(361) 288-2670
(361) 288-4672 Fax

5213 Davis Boulevard, Suite G
North Richland Hills, TX 76180
(817) 812-3500

REPORT FORMAT INFORMATION

This report is organized into two separate, but equally important sections.

Section I - *Synopsis* is a summary of our geotechnical recommendations specific to this project.

Section II - The *Main Report* contains more detailed information including pavement design parameters and site work recommendations.

A study of both of the above referenced sections is recommended for the Project Team Members. Arias & Associates, Inc. cautions that Section I is a consolidated quick reference overview of the more detailed geotechnical recommendations contained in Section II and should not be utilized exclusively from the remainder of the report.

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Tables

SECTION I: SYNOPSIS

This synopsis includes a brief description of the project, subsurface findings, recommendations for pavement design and specific items of concern from a geotechnical standpoint for consideration during the design, construction, and maintenance phases of this project.

Table 1: Project Description

Project:	Parking Area at Nani Falcone Community Park
Project Location:	Near Mystic Park and Bandera Road San Antonio, Texas
Proposed Development:	New Parking Area Pavement

Table 2: Existing Conditions at Time of Geotechnical Study

Ground Cover:	Short native grass cover
Predominant Soil Types:	CLAYEY GRAVEL with SAND (GC), SANDY FAT CLAY (CH), CLAYEY SAND with GRAVEL (SC)
Groundwater Depth Measured:	No Groundwater Observed
Estimated Potential Vertical Rise (PVR)	5 to 6 inches

Table 3: Recommended Pavement Sections

Layer	**Material (see notes)**	**Flexible Asphaltic Concrete**			
		Light Duty		**Medium Duty**	
Surface	HMAC	3”	3”	3”	3”
Base	Flexible Base	8”	8”	12”	12”
Subgrade	Geogrid	no	yes	no	yes
	Lime Treated	6”	--	6”	--

Notes:

1. “Light Duty” consists of parking and/or service drives for passenger vehicles only. “Medium Duty” consists of service drives for passenger vehicles and occasional single-unit trucks. Garbage dumpster pads and dock areas (including areas of truck turning and maneuvering) for delivery vehicles should be constructed using “Heavy Duty” concrete paving. ***Truck entrance roads should include 8 inches of concrete pavement.***
2. Design CBR value of 2.0 and design modulus of subgrade reaction (k-value) of 75 pci.
3. In lieu of lime stabilization of the subgrade, Tensar geogrid TX-140 installed on top of a 6-inch thick moisture conditioned compacted subgrade may be utilized for flexible asphaltic concrete pavement.

4. Hot-mix asphaltic concrete (HMAC) should be TxDOT Standard Specifications Item 340 Type D.
5. Flexible base should be TxDOT Standard Specifications Item 247, Type A , Grade 1 or 2.

Table 4: Project Compaction, Moisture and Testing Requirements

Description	Material	Percent Compaction	Optimum Moisture Content	Testing Requirement
		According to Standard Proctor ASTM D 698 (Except as Noted)		
Pavement Areas	Scarified On-site Soil (Subgrade)	≥ 95%	0 to +4%	1 per 5,000 SF; min. 3 tests
	General Fill (Onsite Material)	≥ 95%	0 to +4%	1 per 5,000 SF; min. 3 per lift
	Base Material	≥ 95% **(ASTM D 1557)**	±3%	1 per 5,000 SF; min. 3 per lift
	Hot-mix asphaltic concrete	91% to 95% Theoretical Lab Density (TEX 207 F)	Not applicable	1 per 5,000 SF; min. 3 per lift
Non-Paved Areas	General Fill (On-site Material)	≥ 95%	0 to +4%	1 per 5,000 SF; min. 3 per lift

SECTION II: MAIN REPORT

PROJECT AND SITE DESCRIPTION

Since only one (1) boring was performed for this project, the risk of missing potential subsurface variations increases. That is, there is an increased risk that the boring could miss fill conditions, water bearing gravels, expansive soils, or other condition that may detrimentally affect the performance of the planned site improvements. Our recommendations are based on the interpreted soil conditions identified by the single boring. The City should be aware of the risks associated with the reduced geotechnical scope.

The proposed project will include a new drive and parking area to be designed for 25,000 ESALs at the Nani Falcone Community Park located near Mystic Park and Bandera Road in San Antonio, Texas. A Site Vicinity Map of the project area is included as Figure 1 in Appendix A of this repot.

At the time of our field drilling and sampling, existing vegetation consisted generally of short native grasses. Site photographs taken during the field exploration can be found in Appendix A.

SOIL BORING AND LABORATORY TESTS

As requested, one (1) soil boring, designated as Boring B-1 was drilled and sampled to a depth of about 10 feet. The soil boring was drilled at the approximate location shown on the Boring Location Plan provided as Figure 2 in Appendix A. The boring was drilled on March 28, 2014, and the boring depth was measured from below the existing ground surface at that time. The boring was sampled in general accordance with ASTM D 1586 for Split Spoon sampling techniques as described in Appendix D. A truck-mounted drill rig using continuous flight augers together with the sampling tool noted was used to secure the subsurface soil samples. The open borehole was backfilled using soil cuttings generated from the drilling process at completion of the boring.

Soil classifications and borehole logging were conducted during the exploration by one of our engineering technicians working under the supervision of our Geotechnical Engineer. Final soil classifications, as seen on the boring log included in Appendix B, were determined in the laboratory based on laboratory and field test results and applicable ASTM procedures.

As a supplement to the field exploration, laboratory testing was conducted to determine soil water content, Atterberg Limits, percent passing the US Standard No. 200 sieve and soluble sulfate content. The laboratory results are reported in the attached boring logs included in Appendix B with the exception of the soluble sulfate content results which are shown in Table

6 subsequently. A key to the terms and symbols used on the log is also included in Appendix B. The soil laboratory testing for this project was done in accordance with applicable ASTM procedures with the specifications and definitions for these tests listed in the Appendix C. Remaining soil samples recovered from this exploration will be routinely discarded following submittal of this report.

SUBSURFACE CONDITIONS

Local geology and generalized stratigraphy and groundwater conditions are discussed in the following sections. The subsurface and groundwater conditions are based on conditions encountered at Boring B-1 to the explored depths of approximately 10 feet measured from the existing ground surface March 28, 2014.

Geology

The earth materials underlying the project site have been regionally mapped as clays and sands of the Austin Chalk Group (Kau). Austin Chalk Group clays generally consist predominantly of brown and tan clay, overlying tan marlstone. The clays generally exhibit a very high shrink/swell potential. Locally, the materials encountered in the boring consist primarily of CLAYEY GRAVEL (GC), FAT CLAY (CH) and CLAYEY SAND (SC).

Site Stratigraphy and Engineering Properties

The generalized subsurface stratigraphy encountered at this site is summarized in Table 5 given subsequently. *The presence and thickness of the various subsurface materials can be expected to vary away from the exploration location.* The descriptions conform to the Unified Soils Classification System.

Table 5: Generalized Soil Conditions

Stratum	Depth (ft)	Material Type	PI range	-200 range	N range
I	0 to 4	Dark brown CLAYEY GRAVEL with SAND (GC), medium dense to dense	70*	42*	25 - 33
II	4 to 7	Tan SANDY FAT CLAY (CH), very hard	56*	62*	50/6"*
III	7 to 10	Tan CLAYEY SAND with GRAVEL (SC), very dense	30 - 33	28*	63 – 50/3"

Where: Depth - Depth from existing ground surface at the time of geotechnical study, feet
PI - Plasticity Index, %
-200 - Percent Passing #200 Sieve, %
N - Standard Penetration Test (SPT) N-Value, blows per foot
* - Only one test performed

Groundwater

A dry soil sampling method was used to obtain the soil samples at the project site. Groundwater was not encountered within the boring during the soil sampling activities which were performed on March 28, 2014.

Groundwater levels will often change significantly over time and should be verified immediately prior to construction. Water levels in open boreholes may require several hours to several days to stabilize depending on the permeability of the soils. Groundwater levels at this site may differ during construction because fluctuations in groundwater levels can result from seasonal conditions, rainfall, drought, or temperature effects. Pockets or seams of gravels, sands, silts or open fractures and joints can store and transmit "perched" groundwater flow or seepage.

Sulfate Test Results

Laboratory testing was conducted on two (2) selected samples recovered from the boring drilled at the site to determine the soluble sulfate content. Testing was performed in general accordance with TxDOT test method Tex-145-E "Determining Sulfate Content in Soils." The results indicate that the soluble sulfate contents of the samples tested were about 120 parts per million (ppm). The results are indicative of low soil sulfate content at this site. Therefore, lime or cement stabilization of the onsite soils can be considered for this site. A summary of the sulfate test results is provided below in Table 6.

Table 6: Soluble Sulfate Test Results

Boring No.	Approx. Sample Depth (ft)	Material Description	Soluble Sulfate Content (ppm)
B-1	0 to 2	CLAYEY GRAVEL with SAND (GC)	120
B-1	8 to 10	CLAYEY SAND with GRAVEL (SC)	120

Note:

1. Approximate sample depth is referenced from the existing ground surface at the time of the geotechnical field exploration performed on March 28, 2014.

PAVEMENT RECOMMENDATIONS

We are providing design pavement section thicknesses based on the traffic volume of 25,000 ESALs provided to us by the client.

The pavement recommendations were prepared in accordance with the 1993 AASHTO Guide for the Design of Pavement Structures for asphalt. We have anticipated that one (1) heavy delivery truck per day will be expected. Concrete paving is recommended in heavy truck traffic areas. Asphalt paving may be used for areas that will accommodate primarily

passenger vehicles. The following design parameters and assumptions were used in our analysis:

Table 7: Pavement Design Assumptions

Traffic Load for Light Duty Pavement	25,000 equivalent single axle loads (ESALs)
Average Daily Truck Traffic vehicle with at least 6 Wheels	One (1)
Raw Subgrade California Bearing Ratio (CBR)	2 for moderate to high plasticity compacted clay (GC-CH) subgrade
Raw Subgrade Modulus of Subgrade Reaction, k in pci	75 for moderate to high plasticity compacted clay (GC-CH) subgrade

Options for section thickness for flexible pavements are provided in SECTION I: Recommended Pavement Sections, Table 3. If more heavy-duty truck traffic is anticipated, we should be contacted to provide additional recommendations.

A heavy-duty truck traffic section is recommended for use at entrances, driveways, dumpsters pads and channeled traffic areas. Areas subjected to truck traffic stopping, starting, loading, unloading or turning should not utilize asphalt pavement. For these areas a concrete section is recommended.

Performance and Maintenance Considerations

Our pavement recommendations have been developed to provide an adequate structural thickness to support the anticipated traffic volumes. Some shrink/swell movements due to moisture variations in the underlying soils should be anticipated over the life of the pavements. The owner should recognize that over a period of time, pavements may crack and undergo some deterioration and loss of serviceability. We recommend the project budgets include an allowance for maintenance such as patching of cracks.

It has been our experience that pavement cracking will provide a path for surface runoff to infiltrate through the pavements and into the subgrade. Once moisture is allowed into the subgrade, the potential for pavement failures and potholes will increase. We recommend the owners implement a routine maintenance program with regular site inspections to monitor the performance of the site pavements.

Additional crack sealing will likely be required over the design life of the pavements. Crack sealing is a proven, routine, maintenance practice successfully used by TxDOT, and other government agencies to preserve pavements and prevent accelerated wear and deterioration. Failure to provide routine crack-sealing will increase the potential for pavement failures and potholes to develop.

Pavement Subgrade and Section Materials Recommendations

Recommendations for pavement subgrade preparation and section materials are shown in the following table.

Table 8: Subgrade and Section Materials

Subgrade Preparation Prior to Pavement Section Construction	
Minimum undercut depth	6 inches or as needed to remove organics and existing pavement
Reuse excavated soils	Provided they are free of roots and debris and meet the material requirements for their intended use
Horizontal extent for undercut	2 feet beyond the paving limits
Exposed subgrade (before lime-treatment or moisture conditioning)	Proof roll with rubber tired vehicle weighting at least 20 tons such as a loaded dump truck with Geotechnical Engineer's representative present during proof rolling
Pumping/rutting areas discovered during proof rolling	Remove to firmer materials and replace with compacted general or select fill under direction of Geotechnical Engineer's representative
Fill Requirements for Grade Increases	
General fill type	Material free of roots, debris and other deleterious material with a maximum rock size of 3 inches; on-site clays having CBR $\geq$ 2 may be used. Imported fill materials used under pavements should have a CBR value of at least 2 and a soluble sulfate content of less than 500 PPM.
Minimum general fill thickness	As required to achieve grade
Maximum general fill loose lift thickness	8 inches
General fill compaction and moisture criteria	ASTM D 698 $\geq$ 95% compaction at 0 to +4 from optimum

Subgrade Treatment Option - Moisture Conditioning	
Depth of moisture conditioning	9 inches (disk in place and moisture condition)
Compaction and moisture criteria	ASTM D 698 ≥ 95% compaction at 0 to +4 from optimum
Subgrade Treatment Option – Lime Treatment	
Soluble Sulfate Content of Subgrade	The subgrade materials should be tested for soluble sulfate content before using the lime treatment as an option. The subgrade soil should have a soluble sulfate content of less than 500 PPM.
Treatment depth	6 inches
Treatment type	Hydrated lime
Application rate (estimated)	6 - 8% by dry weight
Soil dry unit weight (estimated)	105 pcf but may be variable
Determination of application rate	The actual application rate should be determined by laboratory testing of soil samples taken after the pavement subgrade elevation has been achieved. The quantity of lime should be sufficient to result in a pH of at least 12.4 when tested in accordance with ASTM C 977, Appendix XI. Alternately, the optimum lime content may be determined through Atterberg limits testing on treated samples with varying percentages of lime. The optimum lime content should result in a PI of 20 or less.
Treatment procedure	TxDOT Item 260 and 264
Treatment layer compaction and moisture criteria	ASTM D 698 ≥ 95% compaction at 0 to +4 from optimum
Pavement Section Materials	
Flexible Base Material Type	TxDOT Item 247, Type A, Grade 1 or 2
Maximum Flexible Base Loose Lift Thickness	8 inches
Hot Mix Asphaltic Concrete (HMAC) Type	TxDOT Standard Specifications Item 340 Type D (PG 76 or higher grade binder)
In-Place Density and Moisture Verification Testing	
Testing frequency (Subgrade)	1 test per 5,000 square feet per lift with minimum of 3 tests per lift

To prevent degradation of the prepared subgrade, paving preferably should be placed within 14 days. If pavement placement is delayed, protection of the subgrade surface with an emulsion-based sealer should be considered. Alternately, the paving section could be slightly overbuilt so blading performed to remove distressed sections does not reduce the treated subgrade thickness.

CONSTRUCTION CRITERIA

Site Preparation

Strip away existing topsoil, grass, organics, and deleterious debris as needed and dispose outside of the pavement areas. Additional excavation may also be necessary due to encountering deleterious materials such as concrete or undesirable soft and wet subgrade conditions. The site representative of the geotechnical engineer should observe undercutting operations. Unless passing density reports are provided for a specific area, existing fill soils found during the excavation should be considered as uncertified and removed to suitable natural soils.

After the surface materials are removed, proof rolling of the exposed surface with a heavily loaded dump truck or pneumatic tired roller should be performed. Any areas which excessively yield or pump under the wheel loading should be undercut to the depth specified by the geotechnical engineer's representative and replaced with compacted general fill to existing grade as specified. The voids in undercut areas can be backfilled and compacted with on-site general fill materials. The backfill should be placed and compacted in accordance with the General Fill requirements in Table 4 in Section I.

At least one density test should be conducted per 5,000 square feet of parking lot area per lift of prepared fill and subgrade or a minimum of three density tests should be taken per lift within the parking lot area.

Drainage

Good positive drainage during and after construction is very important to reduce expansive soil volume changes that can detrimentally affect the performance of the planned development. Proper attention to surface and subsurface drainage details during the design and construction phase of development can prevent many potential soil shrink-swell related problems during and following the completion of the project.

Earthwork Acceptance

Exposure to the environment may weaken the soils at the pavement subgrade level if the subgrade remains exposed for long periods of time. Therefore, it is recommended that all excavations be extended to final grade and constructed as soon as possible in order to reduce potential damage to the subgrade. If the subgrade soils are exposed to severe drying

or wetting, the unsuitable soil must be re-conditioned or removed as appropriate and replaced with compacted fill, prior to placing any subsequent pavement layers. The subgrade should be free of loose soil, ponded water or debris and should be observed prior to placing any subsequent pavement layers by the geotechnical engineer or his representative.

Pavement should not be placed on soils that have been disturbed by rainfall or seepage. If the subgrade soils are softened by surface water intrusion during exposure or by desiccation, the unsuitable soils must be removed and replaced with compacted select fill prior to placement of any pavement.

Subgrade preparation and fill placement operations should be monitored by the soils engineer or his representative. As a guideline, at least one in-place density test should be performed for each 5,000 sq. ft. of compacted surface per lift or a minimum of three tests per lift. Any areas not meeting the required compaction should be recompacted and retested until compliance is met.

Trench Excavations

Excavations should comply with OSHA Standard 29CFR, Part 1926, Subpart P and all State of Texas and local requirements. Trenches 20 feet deep or greater require that the protective system be designed by a registered professional engineer. A trench is defined as a narrow excavation in relation to its depth. In general, the depth is greater than the width, but the bottom width of the trench is not greater than 15 feet. Trenches greater than 5 feet in depth require a protective system such as trench shields, trench shoring, or sloping back the excavation side slopes.

The Contractor's "Competent Person" shall perform daily inspections of the trench to verify that the trench is properly constructed and that surcharge and vibratory loads are not excessive, that excavation spoils are sufficiently away from the edge of the trench, proper ingress and egress into the trench is provided and all other items are performed as outlined in these OSHA regulations. It is especially important for the inspector to observe the effects of changed weather conditions, surcharge loadings, and cuts into adjacent backfills of existing utilities. The flow of water into the base and sides of the excavation and the presence of any surface slope cracks should also be carefully monitored.

Although the geotechnical report provides an indication of soil types to be anticipated, actual soil and groundwater conditions will vary along the trench route. The "Competent Person" must evaluate the soils and groundwater in the trench excavation at the time of construction to verify that proper sloping or shoring measures are performed.

General Site Earthwork Recommendations

If fill is needed to raise site grade outside of the pavement area, general fill obtained from on-site excavations may be used. Requirements for compacted general fill are outlined in the following table.

Table 9: Site Work (Non Structural/General) Fill Requirements

Stripping Depth	6 inch minimum or as needed to remove vegetation
Non Structural/General Fill Type	On-site material free of roots, debris and other deleterious material with a maximum particle size of 3 inches
Maximum Non Structural/General Fill Loose Lift Thickness	9 inches

Positive drainage is very important to reducing soil volume changes that can detrimentally affect the performance of the planned development. Proper attention to surface and subsurface drainage details during the design and construction phase of development can prevent many potential soil shrink-swell related problems during and following the completion of the project.

GENERAL COMMENTS

The scope of this study is to provide geotechnical engineering criteria for use by design engineers in preparing the pavement designs. Environmental studies of any kind were not a part of our scope of work or services.

This report was prepared as an instrument of service for this project exclusively for the use of City of San Antonio and the project design team. If the development plans change relative to overall site layout, size, or anticipated loads or if different subsurface conditions are encountered, we should be informed and retained to ascertain the impact of these changes on our recommendations. We cannot be responsible for the potential impact of these changes if we are not informed.

Geotechnical Design Review

Arias should be given the opportunity to review the design and construction documents. The purpose of this review is to check to see if our geotechnical recommendations are properly interpreted into the project plans and specifications. Please note that design review was not included in the authorized scope and additional fees may apply.

Subsurface Variations

Soil and groundwater conditions may vary beyond the boring location. Transition boundaries or contacts, noted on the boring log to separate soil types, are approximate. Actual contacts may be gradual and vary at different locations. The contractor should verify that similar conditions exist throughout the proposed area of excavation. If different subsurface conditions or highly variable subsurface conditions are encountered during construction, we should be contacted to evaluate the significance of the changed conditions relative to our recommendations.

Quality Assurance Testing

The long-term success of the project will be affected by the quality of materials used for construction and the adherence of the construction to the project plans and specifications. As Geotechnical Engineer of Record (GER), we should be engaged by the Owner to provide Quality Assurance (QA) testing. Our services will be to evaluate the degree to which constructors are achieving the specified conditions they're contractually obligated to achieve, and observe that the encountered materials during earthwork for pavement installation are consistent with those encountered during this study. In the event that Arias is not retained to provide QA testing, we should be immediately contacted if differing subsurface conditions are encountered during construction. Differing materials may require modification to the recommendations that we provided herein. A message to the Owner with regard to the project QA is provided in the ASFE publication included in Appendix E.

Arias has an established in-house laboratory that meets the standards of the American Standard Testing Materials (ASTM) specifications of ASTM E-329 defining requirements for Inspection and Testing Agencies for soil, concrete, steel and bituminous materials as used in construction. We maintain soils, concrete, asphalt, and aggregate 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), and also maintains AASHTO Materials Reference Laboratory (AMRL) and Cement and Concrete Reference Laboratory (CCRL) proficiency sampling, assessments and inspections.

Furthermore, Arias employs a technical staff certified through the following agencies: the National Institute for Certification in Engineering Technologies (NICET), the American Concrete Institute (ACI), the American Welding Society (AWS), the Precast/Prestressed Concrete Institute (PCI), the Mine & Safety Health Administration (MSHA), the Texas Asphalt Pavement Association (TXAPA) and the Texas Board of Professional Engineers (TBPE). Our services are conducted under the guidance and direction of a Professional Engineer (P.E.) licensed to work in the State of Texas, as required by law.

Standard of Care

Subject to the limitations inherent in the agreed scope of services as to the degree of care and amount of time and expenses to be incurred, and subject to any other limitations contained in the agreement for this work, Arias has performed its services consistent with that level of care and skill ordinarily exercised by other professional engineers practicing in the same locale and under similar circumstances at the time the services were performed.

Information about this geotechnical report is provided in the ASFE publication included in Appendix D.

APPENDIX A: FIGURES AND SITE PHOTOGRAPHS

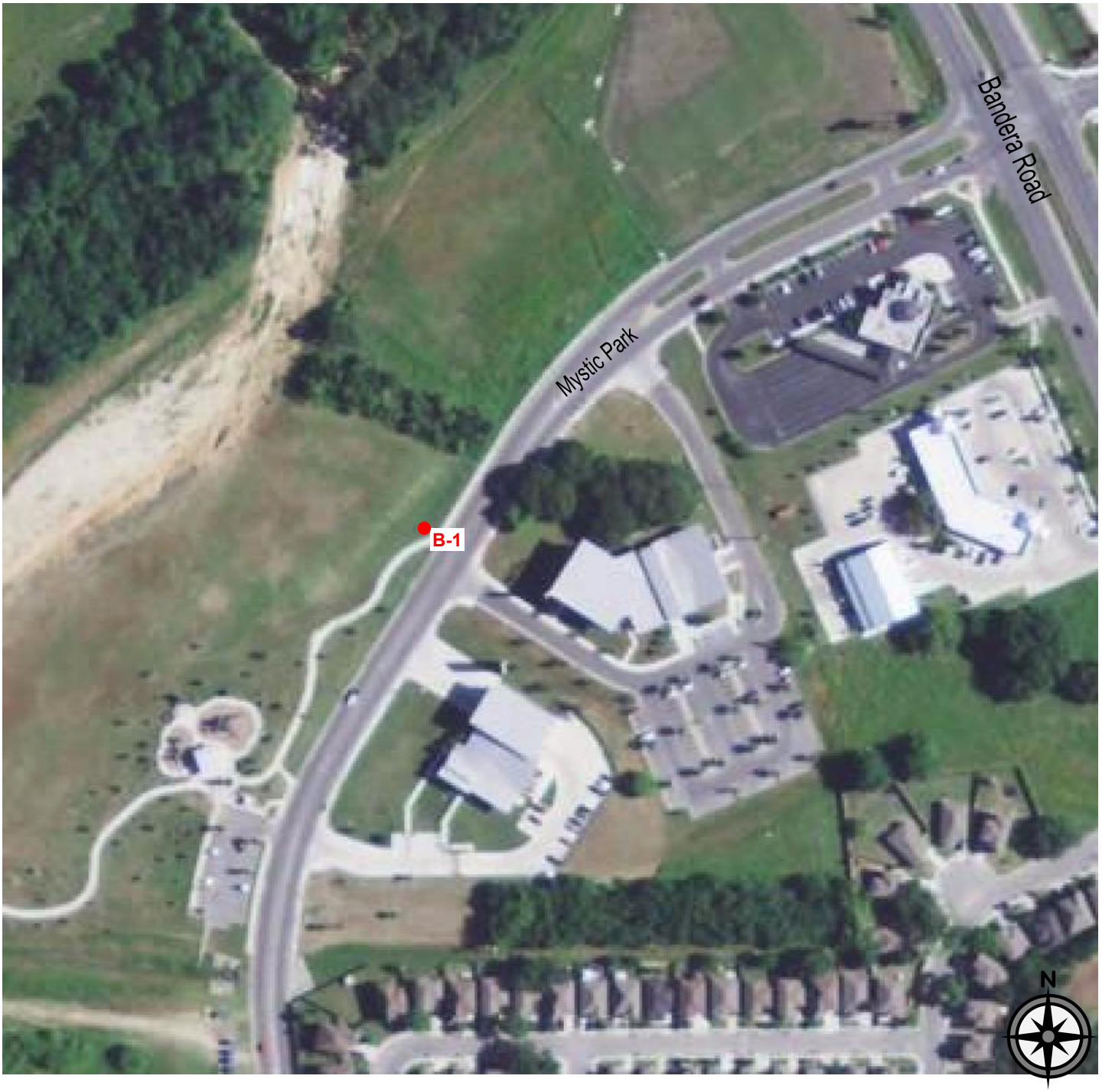
ARIAS & ASSOCIATES, INC.
Geotechnical • Environmental • Testing
TBPE Registration No. F-32
142 Chula Vista
San Antonio, Texas 78232
Office: (210) 308-5884 Fax: (210) 308-5886

VICINITY MAP

Proposed Parking Area – Nani Falcone Community Park
Mystic Park west of Bandera Road
San Antonio, Texas

Date: April 8, 2014	Job No.: 2014-297
Drawn By: TAS	Checked By: JDS
Approved By: CMS	Scale: N.T.S.

Figure 1



ARIAS & ASSOCIATES, INC.
Geotechnical • Environmental • Testing
TBPE Registration No. F-32
142 Chula Vista
San Antonio, Texas 78232
Office: (210) 308-5884 Fax: (210) 308-5886

BORING LOCATION PLAN

Proposed Parking Area – Nani Falcone Community Park
Mystic Park west of Bandera Road
San Antonio, Texas

REVISIONS:		
No.:	Date:	Description:

Date: April 8, 2014	Job No.: 2014-297
Drawn By: TAS	Checked By: JDS
Approved By: CMS	Scale: N.T.S.

Figure 2

Photo 1 – View looking towards the southwest at the drilling operations of Boring B-1.

ARIAS & ASSOCIATES, INC.
Geotechnical • Environmental • Testing
TBPE Registration No. F-32
142 Chula Vista
San Antonio, Texas 78232
Office: (210) 308-5884 Fax: (210) 308-5886

SITE PHOTOS

Proposed Parking Area – Nani Falcone Community Park
Mystic Park west of Bandera Road
San Antonio, Texas

Date: April 8, 2014	Job No.: 2014-297
Drawn By: TAS	Checked By: JDS
Approved By: CMS	Scale: N.T.S.

Appendix A

APPENDIX B: BORING LOGS AND KEY TO CLASSIFICATION SYMBOLS

Boring Log No. B-1

Project: **Proposed Parking Area**
Nani Falcone Community Park
Mystic Park, San Antonio, Texas

Location: See Boring Location Plan

Sampling Date: 3/28/14

Coordinates: N29°31'29.6" W98°38'33.9"

Backfill: Cuttings

Soil Description	Depth (ft)	SN	WC	PL	LL	PI	N	-200
CLAYEY GRAVEL with Sand (GC), dense, dark brown STRATUM I		SS	16				33	
	2							
- medium dense below 3 ft.		SS	10	28	98	70	25	42
	4							
SANDY FAT CLAY (CH), very hard, tan STRATUM II		SS	16	26	82	56	50/6"	62
	6							
CLAYEY SAND with Gravel (SC), very dense, tan STRATUM III		SS	11	16	49	33	63	28
	8							
		SS	11	18	48	30	50/3"	
Borehole terminated at 9.3 feet								

Groundwater Data:
During drilling: Not encountered

Field Drilling Data:
Coordinates: Hand-held GPS Unit
Logged By: W. Persyn
Driller: Eagle Drilling, Inc.
Equipment: Truck-mounted drill rig

Single flight auger: 0 - 9.3 ft

Nomenclature Used on Boring Log

Split Spoon (SS)

WC = Water Content (%)
PL = Plastic Limit
LL = Liquid Limit
PI = Plasticity Index
N = SPT Blow Count

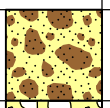
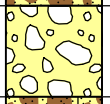
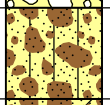
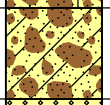
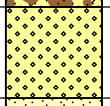
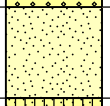
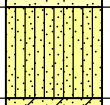
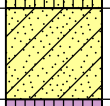
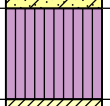
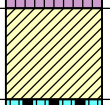
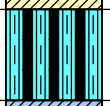
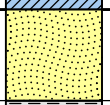
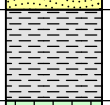
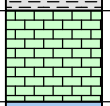
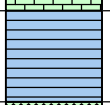
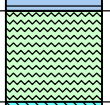
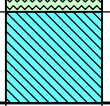
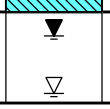
-200 = % Passing #200 Sieve

2014-297.GPJ 4/10/14 (BORING LOG SA13-02.ARIASSA12-01.GDT.LIBRARY2013-01.GLB)

Arias & Associates, Inc.

Job No.: 2014-297

KEY TO CLASSIFICATION SYMBOLS USED ON BORING LOGS

MAJOR DIVISIONS			GROUP SYMBOLS		DESCRIPTIONS
COARSE-GRAINED SOILS More Than Half of Material LARGER Than No. 200 Sieve size	GRAVELS More Than Half of Coarse Fraction is LARGER Than No. 4 Sieve Size	Clean Gravels (Little or no Fines)	GW		Well-Graded Gravels, Gravel-Sand Mixtures, Little or no Fines
			GP		Poorly-Graded Gravels, Gravel-Sand Mixtures, Little or no Fines
		Gravels With Fines (Appreciable Amount of Fines)	GM		Silty Gravels, Gravel-Sand-Silt Mixtures
			GC		Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS More Than Half of Coarse Fraction is SMALLER Than No. 4 Sieve Size	Clean Sands (Little or no Fines)	SW		Well-Graded Sands, Gravelly Sands, Little or no Fines
			SP		Poorly-Graded Sands, Gravelly Sands, Little or no Fines
		Sands With Fines (Appreciable Amount of Fines)	SM		Silty Sands, Sand-Silt Mixtures
			SC		Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS More Than Half of Material is SMALLER Than No. 200 Sieve Size	SILTS & CLAYS	Liquid Limit Less Than 50	ML		Inorganic Silts & Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands or Clayey Silts with Slight Plasticity
			CL		Inorganic Clays of Low to Medium Plasticity, Gravelly Clays, Sandy Clays, Silty Clays, Lean Clays
	SILTS & CLAYS	Liquid Limit Greater Than 50	MH		Inorganic Silts, Micaceous or Diatomaceous Fine Sand or Silty Soils, Elastic Silts
			CH		Inorganic Clays of High Plasticity, Fat Clays
FORMATIONAL MATERIALS	SANDSTONE				Massive Sandstones, Sandstones with Gravel Clasts
	MARLSTONE				Indurated Argillaceous Limestones
	LIMESTONE				Massive or Weakly Bedded Limestones
	CLAYSTONE				Mudstone or Massive Claystones
	CHALK				Massive or Poorly Bedded Chalk Deposits
	MARINE CLAYS				Cretaceous Clay Deposits
	GROUNDWATER				Indicates Final Observed Groundwater Level Indicates Initial Observed Groundwater Location

Arias & Associates, Inc.

APPENDIX C: LABORATORY AND FIELD TEST PROCEDURES

FIELD AND LABORATORY EXPLORATION

The field exploration program included drilling at selected locations within the site and intermittently sampling the encountered materials. The boreholes were drilled using either single flight auger (ASTM D 1452) or hollow-stem auger (ASTM D 6151). Samples of the upper soils encountered were obtained using a split-barrel sampler while performing the Standard Penetration Test (ASTM D 1586) and ASTM D 1587 for thin-walled tubes, or by taking material from the auger as it was advanced (ASTM D 1452). The sample depth interval and type of sampler used is included on the soil boring log. Arias' field representative visually logged each recovered sample and placed a portion of the recovered sampled into a plastic bag for transport to our laboratory.

SPT N values and blow counts for those intervals where the sampler could not be advanced for the required 18-inch penetration are shown on the soil boring log. If the test was terminated during the 6-inch seating interval or after 10 hammer blows were applied used and no advancement of the sampler was noted, the log denotes this condition as blow count during seating penetration.

Arias performed soil mechanics laboratory tests on selected samples to aid in soil and rock classification and to determine engineering properties. Tests commonly used in geotechnical exploration, the method used to perform the test, and the column designation on the boring log where data are reported are summarized as follows:

Test Name	Test Method	Log Designation
Water (moisture) content of soil and rock by mass	ASTM D 2216	WC
Liquid limit, plastic limit, and plasticity index of soils	ASTM D 4318	PL, LL, PI
Amount of material in soils finer than No. 200 sieve	ASTM D 1140	-200

The laboratory results are reported on the boring logs.

APPENDIX D: ASFE INFORMATION – GEOTECHNICAL REPORT

Important Information about Your

Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely, on Your ASFE-Member Geotechncial Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your ASFE-member geotechnical engineer for more information.

ASFE
THE BEST PEOPLE ON EARTH

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@asfe.org www.asfe.org

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APPENDIX E: QUALITY ASSURANCE TESTING

A Message to Owners

Construction materials engineering and testing (CoMET) consultants perform quality-assurance (QA) services to evaluate the degree to which constructors are achieving the specified conditions they're contractually obligated to achieve. Done right, QA can save you time and money; prevent unanticipated-conditions claims, change orders, and disputes; and reduce short-term and long-term risks, especially by detecting molehills before they grow into mountains.

Done right, QA can save you time and money; prevent claims and disputes; and reduce risks. Many owners don't do QA right because they follow bad advice.

Many owners don't do QA right because they follow bad advice; e.g., "CoMET consultants are all the same. They all have accredited facilities and certified personnel. Go with the low bidder." But there's no such thing as a standard QA scope of service, meaning that – to bid low – each interested firms *must* propose the cheapest QA service it can live with, jeopardizing service quality and aggravating risk for the entire project team. Besides, the advice is based on misinformation.

Fact: ***Most CoMET firms are not accredited,*** and the quality of those that are varies significantly. Accreditation – which is important – nonetheless means that a facility met an accrediting body's minimum criteria. Some firms practice at a much higher level; others just barely scrape by. And what an accrediting body typically evaluates – management, staff, facilities, and equipment – can change substantially before the next review, two, three, or more years from now.

Most CoMET firms are not accredited. It's dangerous to assume CoMET personnel are certified.

Fact: ***It's dangerous to assume CoMET personnel are certified.*** Many have no credentials at all; some are certified by organizations of questionable merit, while others have a valid certification, but *not* for the services they're assigned.

Some CoMET firms – the "low-cost providers" – *want* you to believe that price is the only difference between QA providers. It's not, of course. Firms that sell low price typically lack the facilities, equipment, personnel, and insurance quality-oriented firms invest in to achieve the reliability concerned owners need to achieve quality in quality assurance.

ASFE THE GEOPROFESSIONAL BUSINESS ASSOCIATION
8811 Colesville Road
Suite G106
Silver Spring, Maryland 20910
Voice: 301.565.2733
Fax: 301.589.2017
E-mail: info@asfe.org
Internet: www.asfe.org

Firms that sell low price typically lack the facilities, equipment, personnel, and insurance quality-oriented firms invest in to achieve the reliability concerned owners need to achieve quality in quality assurance.

To derive maximum value from your investment in QA, require the CoMET firm's project manager to serve actively on the project team from beginning to end, a level of service that's relatively inexpensive and can pay huge dividends. During the project's planning and design stages, experienced CoMET professionals can help the design team develop uniform technical specifications and establish appropriate observation, testing, and instrumentation procedures and protocols. They can also analyze plans and specs much as constructors do, looking for the little errors, omissions, conflicts, and ambiguities that often become the basis for big extras and big claims. They can provide guidance about operations that need closer review than others, because of their criticality or potential for error or abuse. They can also relate their experience with the various constructors that have expressed interest in your project.

To derive maximum value, require the project manager to serve actively on the project team from beginning to end.

CoMET consultants' construction-phase QA services focus on two distinct issues: those that relate to geotechnical engineering and those that relate to the other elements of construction.

The geotechnical issues are critically important because they are essential to the "observational method" geotechnical engineers use to significantly reduce the amount of sampling they'd otherwise require. They apply the observational method by developing a sampling plan for a project, and then assigning field representatives to ensure samples are properly obtained, packaged, and transported. The engineers review the samples and, typically, have them tested in their own laboratories. They use the information they derive to characterize the site's subsurface and develop *preliminary* recommendations for the structure's foundations and for the specifications of various "geo" elements, like excavations, site grading, foundation-bearing grades, and roadway and parking-lot preparation and surfacing.

Geotechnical engineers cannot finalize their recommendations until they or their field representatives are on site to observe what's excavated to verify that the subsurface conditions the engineers predicted are those that actually exist.

When unanticipated conditions are observed, recommendations and/or specifications should be modified.

Responding to client requests, many geotechnical-engineering firms have expanded their field-services mix, so they're able to perform overall construction QA, encompassing – in addition to geotechnical issues – reinforced concrete, structural steel, welds, fireproofing, and so on. Unfortunately, that's caused some confusion. Believing that all CoMET consultants are alike, some owners take bids for the overall CoMET package, including the geotechnical field observation. *Entrusting geotechnical field observation to someone other than the geotechnical engineer of record (GER) creates a significant risk.*

Geotechnical engineers cannot finalize their recommendations until they are on site to verify that the subsurface conditions they predicted are those that actually exist. Entrusting geotechnical field observation to someone other than the geotechnical engineer of record (GER) creates a significant risk.

GERs have developed a variety of protocols to optimize the quality of their field-observation procedures. Quality-focused GERs meet with their field representatives before they leave for a project site, to brief them on what to look for and where, when, and how to look. (***No one can duplicate this briefing***, because no one else knows as much about a project's geotechnical issues.) And once they arrive at a project site, the field representatives know to maintain timely, effective communication with the GER, because that's what the GER has trained them to do. By contrast, it's extremely rare for a different firm's field personnel to contact the GER, even when they're concerned or confused about what they observe, because they regard the GER's firm as "the competition."

Divorcing the GER from geotechnical field operations is almost always penny-wise and pound-foolish. Still, because owners are given bad advice, it's commonly done, helping to explain why ***"geo" issues are the number-one source of construction-industry claims and disputes.***

Divorcing the GER from geotechnical field operations is almost always penny-wise and pound-foolish, helping to explain why "geo" issues are the number-one source of construction-industry claims and disputes.

To derive the biggest bang for the QA buck, identify three or even four quality-focused CoMET consultants. (If you don't know any, use the "Find a Geoprofessional" service available free at www.asfe.org.) Ask about the firms' ongoing and recent projects and the clients and client representatives involved; *insist upon receiving verification of all claimed accreditations, certifications, licenses, and insurance coverages.*

Insist upon receiving verification of all claimed accreditations, certifications, licenses, and insurance coverages.

Once you identify the two or three most qualified firms, meet with their representatives, preferably at their own facility, so you can inspect their laboratory, speak with management and technical staff, and form an opinion about the firm's capabilities and attitude.

Insist that each firm's designated project manager participate in the meeting. You will benefit when that individual is a seasoned QA professional familiar with construction's rough-and-tumble. Ask about others the firm will assign, too. There's no substitute for experienced personnel who are familiar with the codes and standards involved and know how to:

- read and interpret plans and specifications;
- perform the necessary observation, inspection, and testing;
- document their observations and findings;
- interact with constructors' personnel; and
- respond to the unexpected.

Important: Many of the services CoMET QA field representatives perform – like observing operations and outcomes – require the good judgment afforded by extensive training and experience, especially in situations where standard operating procedures do not apply. You need to know who will be exercising that judgment: a 15-year "veteran" or a rookie?

Many of the services CoMET QA field representatives perform require good judgment.

Also consider the tools CoMET personnel use. Some firms are passionate about proper calibration; others, less so. Passion is a good thing! Ask to see the firm's calibration records. If the firm doesn't have any, or if they are not current, be cautious. *You cannot trust test results derived using equipment that may be out of calibration.* Also ask a firm's representatives about their reporting practices, including report distribution, how they handle notifications of nonconformance, and how they resolve complaints.

Scope flexibility is needed to deal promptly with the unanticipated.

For financing purposes, some owners require the constructor to pay for CoMET services. ***Consider an alternative approach*** so you don't convert the constructor into the CoMET consultant's client. If it's essential for you to fund QA via the constructor, have the CoMET fee included as an allowance in the bid documents. This arrangement ensures that you remain the CoMET consultant's client, and it prevents the CoMET fee from becoming part of the constructor's bid-price competition. (Note that the International Building Code (IBC) *requires the owner to pay* for Special Inspection (SI) services commonly performed by the CoMET consultant as a service separate from QA, to help ensure the SI services' integrity. Because failure to comply could result in denial of an occupancy or use permit, having a contractual agreement that conforms to the IBC mandate is essential.)

If it's essential for you to fund QA via the constructor, have the CoMET fee included as an allowance in the bid documents. Note, too, that the International Building Code (IBC) requires the owner to pay for Special Inspection (SI) services.

CoMET consultants can usually quote their fees as unit fees, unit fees with estimated total (invoiced on a unit-fee basis), or lump-sum (invoiced on a percent-completion basis referenced to a schedule of values). No matter which method is used, estimated quantities need to be realistic. Some CoMET firms lower their total-fee estimates by using quantities they know are too low and then request change orders long before QA is complete.

Once you and the CoMET consultant settle on the scope of service and fee, enter into a written contract. Established CoMET firms have their own contracts; most owners sign them. Some owners prefer to use different contracts, but that can be a mistake when the contract was prepared for construction services. *Professional services are different.* Wholly avoidable problems occur when a contract includes provisions that don't apply to the services involved and fail to include those that do.

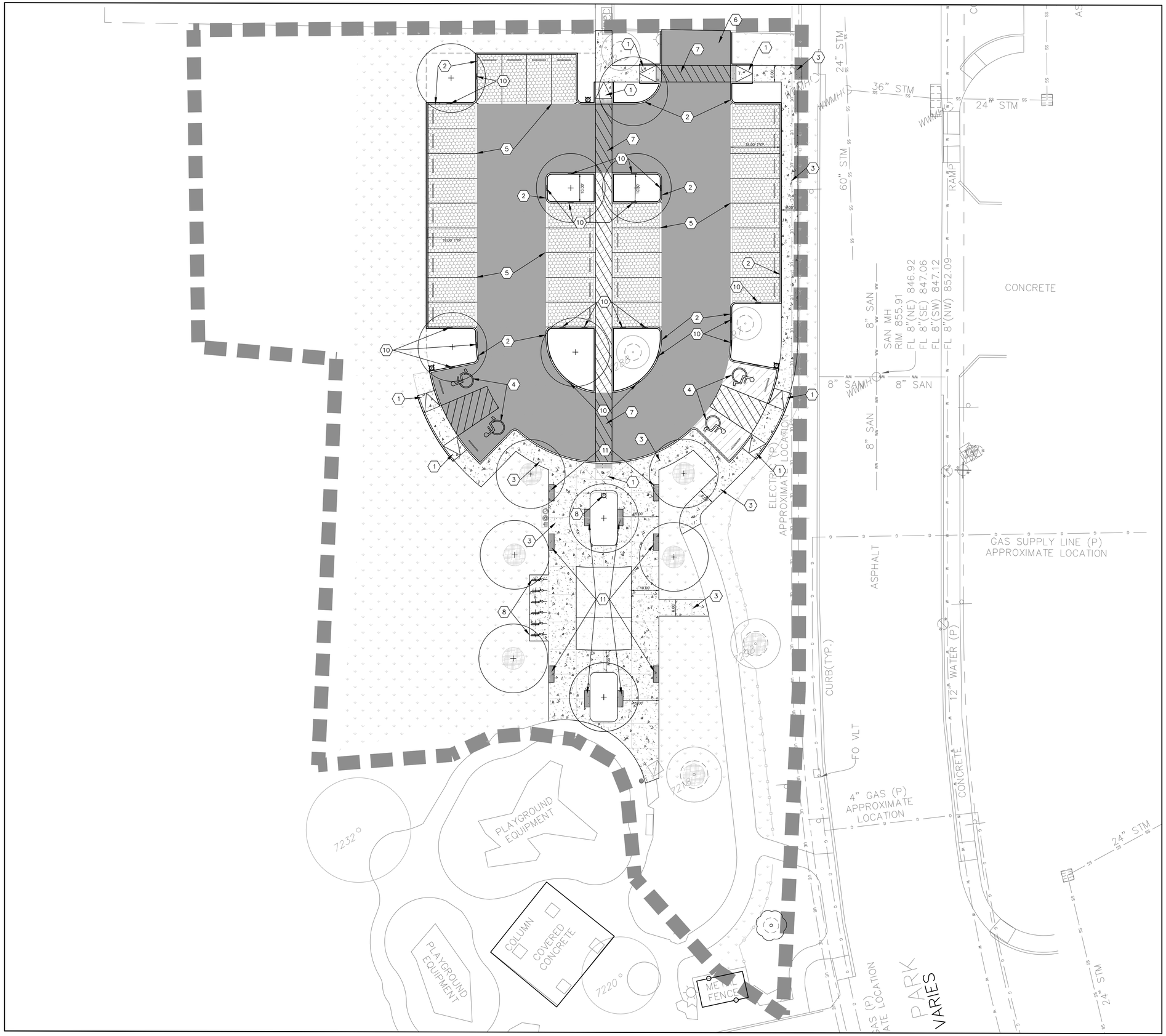
Some owners create wholly avoidable problems by using a contract prepared for construction services.

This final note: CoMET consultants perform QA for owners, not constructors. While constructors are commonly allowed to review QA reports as a *courtesy*, you need to make it clear that constructors do *not* have a legal right to rely on those reports; i.e., if constructors want to forgo their own observation and testing and rely on results derived from a scope created to meet *only* the needs of the owner, they *must do so at their own risk*. In all too many cases where owners have not made that clear, some constructors have alleged that they did have a legal right to rely on QA reports and, as a result, the CoMET consultant – not they – are responsible for their failure to deliver what they contractually promised to provide. The outcome can be delays and disputes that entangle you and all other principal project participants. Avoid that. Rely on a CoMET firm that possesses the resources and attitude needed to manage this and other risks as an element of a quality-focused service. Involve the firm early. Keep it engaged. And listen to what the CoMET consultant says. A good CoMET consultant can provide great value.

For more information, speak with your ASFE-Member CoMET consultant or contact ASFE directly.

ASFE THE GEOPROFESSIONAL BUSINESS ASSOCIATION

8811 Colesville Road
Suite G106
Silver Spring, Maryland 20910
Voice: 301.565.2733
Fax: 301.589.2017
E-mail: info@asfe.org
Internet: www.asfe.org



16 0 8 16 32

1" = 16

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		PROPERTY LINE / R.O.W. LINE
(XXX)		RECORD INFORMATION
		LIGHT POLE
		GROUND LIGHT
		POWER POLE
		DOWN GUY
WTRMH		WATER MANHOLE
		WATER LINE MARKER
UMKR		UNDERGROUND CABLE MARKER
UMKR		UNDERGROUND GAS LINE MARKER
UMTM		UNDERGROUND TELEPHONE MARKER
GRSR		GAS RISER
TRSR		TELEPHONE RISER
SPK		SPRINKLER CONTROL BOX
	SW	SWITCH GEAR & PAD
	T	TRANSFORMER (SIZE VARIES)
		FIRE HYDRANT
		WATER VALVE
		WATER METER
	WM	WATER METER VAULT (SIZE VARIES)
		CABLE TV RISER
		ELECTRIC BOX
	EM	ELECTRIC METER
	GM	GAS METER
		GAS VALVE
TCB	TCB	TRAFFIC CONTROL BOX
TSP	TSP	TRAFFIC SIGNAL POST
		GRATE INLET
		CURB INLET (SIZE VARIES)
		GREASE TRAP (SIZE VARIES)
EMH		ELECTRIC MANHOLE (SIZE VARIES)
WWMH		WASTEWATER MANHOLE (SIZE VARIES)
SSMH		STORMSEWER MANHOLE (SIZE VARIES)
TMH	TMH	TELEPHONE MANHOLE (SIZE VARIES)
CO	CO	WASTEWATER CLEANOUT
X	X	WIRE FENCE
//	//	WOOD FENCE
		CHAIN LINK FENCE
	D	DUMPSTER
		CURB & GUTTER
		EDGE OF PAVEMENT
		FIRE LANE DESIGNATION
		HANDICAP ACCESS ROUTE
		CONCRETE SIDEWALKS
		WALL
		SIGN
		WHEELSTOP
		BOLLARD
	FFE	FINISH FLOOR ELEVATION
		HANDICAP SPACE
	CLASS ROUND	BIKE PARKING
		BARRICADE
		LIMITS OF CONSTRUCTION

PAVEMENT DESIGN:

1. CONTRACTOR TO REFER TO GEOTECHNICAL RECOMMENDATIONS FOR PAVEMENT DESIGN, BY ARIAS & ASSOCIATES., DATED 04/14/2014.
2. CONTRACTOR IS ALSO RESPONSIBLE TO VERIFY THAT THE REPORT HAS NOT BEEN MODIFIED PRIOR TO CONSTRUCTION.

GRAVEL WITH GEOGRID PARKING STALL

FLEXIBLE ASPHALTIC CONCRETE (LIGHT DUTY)

FLEXIBLE ASPHALTIC CONCRETE (MEDIUM DUTY)

FLEXIBLE ASPHALTIC CONCRETE (LIGHT DUTY)

3 INCH HOT-MIX ASPHALTIC CONCRETE MEETING THE REQUIREMENTS OF TxDOT ITEM 340 TYPE D. 8 INCH FLEXIBLE BASE MEETING TxDOT ITEM 247, TYPE A, GRADE 1 OR 2. IN LIEU OF LIME STABILIZATION OF THE SUBGRADE, TENSAR GEOGRID TX-140 INSTALLED ON TOP OF A 6 INCH THICK MOISTURE CONDITIONED COMPACTED SUBGRADE MAY BE UTILIZED FOR FLEXIBLE ASPHALTIC CONCRETE PAVEMENT.

FLEXIBLE ASPHALTIC CONCRETE (MEDIUM DUTY)

3 INCH HOT-MIX ASPHALTIC CONCRETE MEETING THE REQUIREMENTS OF TxDOT ITEM 340 TYPE D. 12 INCH FLEXIBLE BASE MEETING TxDOT ITEM 247, TYPE A, GRADE 1 OR 2. IN LIEU OF LIME STABILIZATION OF THE SUBGRADE, TENSAR GEOGRID TX-140 INSTALLED ON TOP OF A 6 INCH THICK MOISTURE CONDITIONED COMPACTED SUBGRADE MAY BE UTILIZED FOR FLEXIBLE ASPHALTIC CONCRETE PAVEMENT.

ACCESSIBILITY NOTES:

1. SLOPES ON ACCESSIBLE ROUTES SHALL COMPLY WITH TAS SECTION 402 INCLUDING A MAXIMUM CROSS SLOPE OF 1:48 AND MAXIMUM RUNNING SLOPE OF 1:20.
2. RAMPS ON ACCESSIBLE ROUTES SHALL COMPLY WITH TAS SECTION 405.
3. WALKING SURFACES THAT ARE A PART OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH TAS SECTION 403.
4. PAVERS IN ACCESSIBLE ROUTE SHALL BE NON-BEVELED TO MINIMIZE WHEELCHAIR VIBRATIONS.

GENERAL NOTES:

1. ALL DIMENSIONS TO THE CURBS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL SITE PLAN NOTES ARE ON THE SITE PLAN DETAILS SHEET, SHEET 9 & 10.
3. ALL IMPROVEMENTS SHALL BE MADE IN ACCORDANCE WITH THE RELEASED SITE PLAN. ANY ADDITIONAL IMPROVEMENTS WILL REQUIRE SITE PLAN REVISION OR CORRECTION AND APPROVAL OF THE DEVELOPMENT SERVICES DEPARTMENT.
4. ALL EXISTING STRUCTURES SHOWN TO BE REMOVED WILL REQUIRE A DEMOLITION PERMIT FROM THE CITY OF SAN ANTONIO DEVELOPMENT SERVICES DEPARTMENT.
5. SCREENING FOR SOLID WASTE COLLECTION AND LOADING AREAS SHALL BE THE SAME AS, OR OF EQUAL QUALITY TO, PRINCIPAL BUILDING MATERIALS.

SITE KEYNOTES

1. PEDESTRIAN RAMP
2. 6-INCH CURB
3. CONCRETE SIDEWALK
4. ACCESSIBLE PARKING
5. 4" PARKING STRIPING
6. ASPHALT DRIVEWAY
7. CROSSWALK STRIPING
8. BICYCLE PARKING
9. LIGHT POLE
10. SAW-TOOTH CURB (REF. LANDSCAPE FOR DETAIL)
11. LIMESTONE BENCH

STUDIO BALCONES

3908 AVENUE B
AUSTIN, TX 78751
OFFICE 512.383.8815
www.studiobalcones.com

JESSICA MILLIGAN
151196
LICENSED
LANDSCAPE
ARCHITECT
03/28/25

NANI FALCONE PARK
8716 MYSTIC PARK
SAN ANTONIO, TX 78254

ISSUED SETS:

Description	Date Issued
100% CD SET	11.08.2024

Project No. 2307

SITE PLAN

C-5