

Hughes House II Apartments (the “Project” or “HH2”)

GENERAL CONTRACTOR REQUEST FOR PROPOSALS



Southeast Corner of Avenue G & Amanda St.
Fort Worth, Texas 76105

302 Unit Mixed-Income Housing Tax Credit (“LIHTC”) Multifamily
Development

Submittal due date: Friday, November 14th, 2025 by 2:00 PM

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SECTION 1 – GENERAL INFORMATION & REQUIREMENTS

1.12 GENERAL INFORMATION

Fort Worth Housing Solutions (“Owner”) in partnership with McCormack Baron Salazar (“Developer”) and Ojala Partners, LP (“Development Consultant”) are seeking to select a General Contractor for the Project, in accordance with the terms, conditions, and requirements set forth in this Request for Proposal. The Owner is soliciting RFP’s from qualified General Contractors and has incorporated the information necessary to prepare the submittal for the construction of the 302-unit Mixed-Income development in Fort Worth, TX located at the southeast corner of Avenue G and Amanda Street. The Project is located on approximately 15 acres and will consist of one clubhouse that is approximately ~6,000 square feet, pool and amenity area, multiple parks and playgrounds, a fenced dog park, and fourteen (14) residential 3-story walk-up buildings and seven (7) residential 2-story walk-up buildings containing one, two, three, and four-bedroom apartments with a total net rentable area of 336,569 square feet.

The Owner and Developer will rank the bids in the order that they provide the “best value” for the Project based on the information submitted although the “lowest price” will play a large factor in the selection process. Respondents shall consider only those clarifications and interpretations that the Developer issues by addenda prior to the submittal deadline. Interpretations or clarifications in any other form will not be binding on the Owner and should not be relied on in preparing your proposal.

1.2 CONTRACT

Any contract resulting from this solicitation will be in the form of a to-be determined Contractor Agreement. The Contractor Agreement will be sent out by no later than October 22nd, 2025. Respondent agrees that submittal of their proposal indicates acceptance of all terms and conditions as set forth in the to-be determined Contractor Agreement unless otherwise noted in the RFP response. Please include any requested contract changes at the time of submittal.

1.3 CLARIFICATIONS AND INTERPRETATIONS

Any clarifications or interpretations of the RFP that materially affect or change its requirements will be issued by the Architect as an addendum. All such addenda issued by the Architect before the proposals are due are to be considered as part of the bid and Respondents shall acknowledge receipt of and incorporate each addendum into the Proposal. Respondents should coordinate site visits with the Developer.

1.4 SUBMISSION OF PROPOSALS

The Owner will receive bids at the time and location described below.

Requests for Clarification Deadline: Friday, October 24th, 2025 at 12:00 PM CST

Submittal Deadline: Friday, November 14th, 2025 by 2:00 PM CST

Proposals / bids are to be submitted via email to: Jake Seideman JRS@OjalaHoldings.com, Daniel Smith DLS@OjalaHoldings.com, Bradley Johnson

BJJ@OjalaHoldings.com, Lorraine Ward Lorraine.Ward@McCormackBaron.com, and Mike Saunders Mike.Saunders@McCormackBaron.com

Proposals that are received late could disqualify the Respondent from the evaluation process.

1.5 POINT-OF-CONTACT

The Owner has designated Jake Seideman as its main Point of Contact for this Project, with copy to Lorraine Ward and Mike Saunders. No questions or concerns will be accepted after **Friday, October 24th, 2025 at 12:00 PM CST**. All responses will be sent to all parties via addenda's posted by email.

Any questions or concerns regarding the plans or specifications are to be submitted in writing via e-mail to the attention of:

- Jake Seideman, Vice President of Construction: JRS@OjalaHoldings.com
- Bradley Johnson, Development Manager: BJJ@OjalaHoldings.com
- Lorraine Ward, Director of Design & Construction: Lorraine.Ward@McCormackBaron.com
- Mike Saunders, Senior Vice President & Director of Design: Mike.Saunders@McCormackBaron.com

Any questions or concerns regarding compliance with Davis Bacon wage and labor requirements, certified pay wages, M/WBE, Section 3, or the Build America, Buy America ("BABA") Act are to be submitted in writing via e-mail to the attention of:

- Melanie Campbell, Co-President: Melanie@CVRAssociates.com with copy to Monique Chavoya, SVP, McCormack Baron Salazar: Monique.Chavoya@mccormackbaron.com

1.6 EVALUATION OF PROPOSALS

The evaluation of the bids shall be based on the submitted response to the actual criteria in Section 2, including the Pricing and Delivery proposal forms. All properly submitted Proposals will be reviewed, evaluated and ranked by the Owner and Developer.

1.7 OWNER'S RESERVATION OF RIGHTS

The Owner and Developer may evaluate the bids based on the anticipated completion of all or any portion of the Project. The Owner and Developer reserves the right to divide the Project into multiple parts, to reject any and all Proposals and re-solicit for new Proposals, or to reject any and all Proposals and temporarily or permanently abandon the project. Owner and Developer make no representations, written or oral, that it will enter into any form of agreement with any Respondent to this request for bids for any project and no such representation is intended or should be construed by the issuance of this request for bids.

1.8 ACCEPTANCE OF EVALUATION METHODOLOGY

By submitting its Proposal in response to this request for bids, Respondent accepts the evaluation process and acknowledges and accepts that determination of the "Best Value" firm will require subjective judgments by the Developer and Owner.

1.9 NO REIMBURSEMENT FOR COSTS

Respondent acknowledges and accepts that any costs incurred from the Respondent's participation in this request for bids shall be at the sole risk and responsibility of the Respondent.

1.10 PROJECT PLANNING SCHEDULE

Key project planning schedule milestones are:

• RFP Distributed to General Contractors	10/2/2025
• Bids Due to Owner	11/14/2025
• Owner reviews bids	11/21/2025
• Owner makes General Contractor selection	11/24/2025
• [TENTATIVE] Final GMP negotiations	1/2/2026
• [TENTATIVE] GMP Execution *Respondent acknowledges NTP will be issued approximately 30 days after final GMP and agrees to hold pricing until NTP is issued	3/1/2026
• [TENTATIVE] Owner issues Notice to Procure	3/1/2026
• [TENTATIVE] Closing and Ground Breaking	3/18/2026
• [TENTATIVE] Owner issues Notice To Proceed (NTP)	3/19/2026

1.11 INSTRUCTIONS FOR OBTAINING BID DOCUMENTS

The final Plans and Specifications construction documents will only be available online; contact Jake Seideman at JRS@OjalaHoldings.com for download link. Online access will be provided to bidders only.

Respondent is responsible for the cost and coordination of printing any additional bid documents and distributing them to their respective subcontractors / suppliers for pricing. Respondent will be notified by the Architect of any changes to the Bid Documents during the submittal period via addendum.

1.12 OWNER'S SPECIAL CONDITIONS & SUPPLEMENTAL INFORMATION

- The Respondent's construction services scope of work includes but is not limited to the following:
 - Prepare and maintain a complete CPM schedule of construction, updated bi-weekly.
 - Compliance Monitoring and Enforcement of all federal funding regulations including Davis Bacon wage and labor requirements, certified pay wages, Section 3, HUD Safe Harbor Standards, BABA Act, and "best efforts" M/WBE
 - Please see Exhibit F for more information on Davis Bacon requirements. Please note that a portion of the projects sources of funds have this requirement. These funds were awarded by HUD, Fort Worth Housing Solutions and the City of Fort Worth
 - Please provide an alternate deduct price for the removal of Section 3 compliance from your base bid

- It is the development team's understanding that the BABA Act will only apply to steel and iron materials. The development team will provide clarification on the applicability of the BABA Act by no later than October 22nd, 2025.
- Closely supervise all work, ensuring adherence to specification, quality standards, schedule and costs.
- Conduct weekly project subcontractor meetings, create agendas, take and issue minutes, highlight problems or required decisions, administer corrections as specified by the design team.
- Prepare and administer subcontractor payments in a timely manner.
- Manage all required reports, permits and inspections.
- Coordinate with the subcontractors / suppliers, including but not limited to:
 - Exterior / non-code required signage
 - Fitness Equipment Vendor
 - Third party inspection firms
 - FF&E Vendors
- Provide detailed pricing as may be requested by the Developer or Owner for changes to the Scope of Work (if any). The respondent is responsible for promoting the competitive pricing of any changes.
- Manage all aspects of approved changes to the Scope of Work.
- In conjunction with the Architect / Owner, create a comprehensive punch list and cause the correction of each deficiency within 15 calendar days after Substantial Completion.
- Provide all documentation of guarantees, warranties and manuals to the Project Manager.
- Maintain a complete set of as-built documents as the project progresses.
- Coordinate the receipt of and become solely responsible for materials furnished by the Owner, as directed by the Developer or Owner.
- Respondent is responsible for staying within the property boundaries during construction and has not assumed the owner has aerial rights over adjacent properties
- Assist in obtaining all necessary municipal and governmental agency permits, approvals, etc.

Note: this is not an all-inclusive list; please refer to all related Construction Documents for complete description of Scope of Work.

2. Critical Project milestones

The detailed schedule is itemized in Section 1.10 of this RFP.

3. The Owner, Architect, and Civil Engineer will be responsible for obtaining the Grading Permit, Building Permit and IPRC permits for this project and the cost of the building permits shall be excluded from Respondent's bid. Owner will pay the cost of all Sewer Tap Fees, Water Tap Fees, Park Fees, and Platting Fees directly; therefore, these fees shall be excluded from Respondent's bid.

Respondent shall secure and pay for all other permits and governmental fees, licenses, and inspections necessary for proper execution and completion of the Work; including trade permits for plumbing, electrical, mechanical and fire protection as well as fire hydrant installation and inspection fees. **It is Owner's intent to contract directly with a third-party inspection firm (rather than working directly with the city) to help expedite the inspection process. Owner will incur costs of 3rd party inspections and it should not be included in Respondent's bid.**

4. The Owner will retain and pay directly for the soils and construction materials testing for the project. Respondent will be responsible for scheduling and coordinating all required soils and construction materials testing and inspections.
5. Respondent will be responsible for providing the Owner with a final set of As-Built drawings at the completion of the Project as well as a Warranty Binder and Operations Manual inclusive of all approved submittals and shop drawings as part of the project Closeout Documentation at Respondent's cost.
6. Respondent will be responsible for all Storm Water Prevention Compliance.
7. Respondent will be responsible for coordination for all work by public & private utility providers, such as telephone, cable, internet and electricity.
8. **Public Utility Infrastructure**
 - a. Beyond the private on-site building scope of work mentioned herein, the Project also includes a Public work (separate bid process) with two separate Infrastructure Plan Review Center ("IPRC") Scopes of Work.
 - b. The Public Work bid process overlaps that of the private bid process. Once that contractor is selected, further detail on deliverables and correspondence will be provided to Private GC's in April (prior to the bid deadline) to affirm general requirements and other plan & cost contingencies. If private bidders are certified to perform public work in the City of Fort Worth – we welcome your bid for both scopes. To the extent necessary, it will be the responsibility of the Respondent, as "Private" GC, to coordinate with the Public GC on the following:
 - i. OAC Meetings
 - ii. Site safety / phasing / access / utilization
 1. Please reference the above exhibit (showing the approximate public work areas highlighted in red, and the site boundary in blue) in correspondence with the full set of public plans for an understanding of where the public work will occur.
 - c. IPRC #1 – Public Water & Sewer – IPRC24-0009 – This work is on /adjacent to the private site.
 - d. IPRC #2 – Public Drainage & Lighting – IPRC24-0038 - This work is on /adjacent to the private site.

- e. The public plans will be provided separately (see Exhibit F) for the aforementioned considerations and should be bid separately from the private scope of work.
9. Respondent will be responsible for the cost of onsite security of the construction site and any losses in materials and schedule due to theft. At minimum, 6' construction fencing with mesh screening shall be installed on or before date of mobilization by Respondent as site security is paramount to the project.
10. This project has various parties that should be named additional insured's on all required insurance certificates prior to the start of work. The following entities, at minimum, should be listed on all required insurance certificates:
 - Cavile Public Facility Corporation
 - McCormack Baron Salazar
11. Insurance Requirements (see Exhibit B)
12. Contractor contingency shall not be more than 1.0% of the hard costs, net of fee, general conditions, and general requirements. Owner is carrying a contingency and will be in control of those funds for the duration of the Project.
13. There will be no Contractor allowances permitted for the Project by the Respondent. Respondent should provide hard numbers for every aspect of the Project in the RFP submission unless specified by the Owner.
14. There will be no Contractor originated Additive Change Orders allowed for the Project by Respondent. Respondent should use the RFP / Bidding period as a "due diligence period" to ask any questions or clarifications required and to discover any errors, omissions and inconsistencies in the plans and specifications that require attention by the Architect. Lack of adequate review and understanding of the Bid documents prior to Proposal submission is NOT justification for Change Orders after the Contract is awarded. Respondent must list all add-ons, conditions and exclusions to pricing at submission of Proposal.
15. For all Owner originated Additive Change orders (if any), there should be no changes to the General Conditions or markups above the subcontractor's cost.
16. Shared Savings: For any cost savings achieved below Respondent's GMAX amount, please list Respondents proposed cost sharing structure with Owner.
17. Value Engineering Recommendations: The Owner appreciates all Respondents suggestions for value engineering submitted during the RFP process.
18. Liquidated Damages: The unit delivery schedule is paramount due to tax credit financing implications and therefore liquidated damages will be considered.

19. Sales Tax Exemption: Because this project is a public/private partnership it is sales tax exempt. Sales tax shall not be included in the Materials Payment amount. Owner shall be responsible for obtaining and providing to Respondent the forms of sales tax exemption certificates for the Project signed by the tax-exempt entity. Respondent and each Subcontractor purchasing materials shall fill out, execute and present to Owner sales-tax-exemption certificates and maintain a record of such certificates for Project close out. Respondent shall include a total bid amount inclusive of sales tax. Respondent shall also provide a net total removing estimated sales tax and include a line item clearly indicating the estimated sales tax total.
20. Respondent shall include a separate percentage breakdown of material vs labor costs by Division.

Bid Alternates and Breakouts

Deductive Alternates:

1. The GC's are encouraged to identify any potential VE items as part of the value added review of the bids
2. Respondent shall provide a deductive alternate for Section 3 compliance

Additive Alternates:

- a. None at present

Bid Breakouts

1. Performance and Payment bond will be required by construction lender and investor
2. Detailed break out of earthwork, specifically of costs that are related to building grading vs site grading. This impacts the tax credit calculations and financing of the project.

3. SECTION 2 – REQUIREMENTS FOR PROPOSAL

2.1 CRITERIA ONE: RESPONDENT’S CONSTRUCTION PHASE SERVICES

Describe your plan for providing Construction Phase Services required for this Project.

Confirm in graphic form the proposed construction team, lines of authority and the estimated percent of time these individuals will be involved in this Project for Construction Services. Please include resumes for key construction individuals, as well as project experience (i) within City of Fort Worth and (ii) with LIHTC projects.

Describe what you perceive are potential construction issues that may affect the critical path timeline for this Project including any schedule conflicts caused by the corresponding Public Work.

2.2 CRITERIA TWO: RESPONDENT’S PROJECT PLANNING AND SCHEDULING

Provide a Primavera, ProCore, or similar schedule for this Project (the Project scheduling software used by Respondent to be approved by Owner) and identify specific critical process, phases, milestones, approvals, and procurements anticipated.

Respondent agrees to provide list of all subcontractor bids at time of GMP execution. Evaluation of Subcontractor credit worthiness may be performed by Owner and Developer and financial statements may be requested by Owner for Respondent’s major subcontractors at Owner’s discretion.

2.3 CRITERIA THREE: RESPONDENT’S JOB SITE SAFETY PROGRAM

Describe your job site safety program for this Project and specific safety policies in which employees must be in compliance.

2.4 CRITERIA FOUR: RESPONDENT’S WARRANTY AND SERVICE SUPPORT PROGRAM

Describe your warranty service support philosophy and warranty service implementation plan for this Project. Describe how you will measure the quality of service provided to the Owner for this Project.

2.5 CRITERIA FIVE: MWBE EXPERIENCE AND GOALS

As a Public-Private Partnership, the ownership team is committed to promoting full and equal business opportunity for all businesses to supply the goods and services needed to develop the project and seeks to encourage the use of certified historically underutilized businesses (HUBs). It is the goal of the project to award a fair share of contracts to disadvantaged business enterprises (“DBEs”), small business enterprises (“SBEs”), minority business enterprises (“MBEs”), and women’s business enterprises (“WBEs”). Please describe your firms experience with hiring such firms and what you believe may be an attainable goal for sub-contracting out a portion of the work to such enterprises while maintaining competition and quality of work standards. Ownership has established a good faith target goal aligned with City of Fort Worth’s Program Guidelines of 25 percent (25%).

2.6 CRITERIA SIX: HUD AND TDHCA ELIGIBILITY

Confirm your eligibility to participate in projects assisted by HUD and TDHCA and certify that you are not debarred or on a non-participation list.

SECTION 3 – FORMAT OF PROPOSALS

3.1 GENERAL INSTRUCTIONS

Proposals shall be prepared simply and economically, providing a straightforward and concise description of the Respondent's ability to meet the requirements of this RFP. Emphasis shall be on the quality, completeness, clarity of content, responsiveness to the requirements, and an understanding of Owner's needs.

Respondents shall carefully read the information contained in this RFP and submit a complete response to all requirements and questions as directed.

Proposals and any other information submitted by Respondents in response to this RFP shall become the property of the Owner.

Proposals that are qualified with conditional clauses, alterations, items not called for in the RFP documents, or irregularities of any kind are subject to rejection by the Owner, at its option.

The Owner makes no representations of any kind that an award will be made as a result of this RFP. The Owner reserves the right to accept or reject any or all Proposals, waive any formalities or minor technical inconsistencies, or delete any item/requirements from this RFP when deemed to be in Owner's best interest.

Proposals shall include answers to questions identified in Section 2 of the RFP. It is not necessary to repeat the question in the Proposals; however, it is essential to reference the question number with the corresponding answer.

To streamline the evaluation process, all Respondents shall organize their proposals in accordance with the Construction Specifications Institute's division order. Each division shall include a detailed cost breakdown, a general scope of work, and any other relevant supporting documentation.

Failure to comply with all requirements contained in this Request for Proposal may result in the rejection of the Proposal.

3.2 DELIVERY METHOD

Email the Proposal to Owner's representative at the email address provided in Section 1.4, along with a link to any attachments or exhibits as necessary if not provided via email.

Exhibit A – Link to Plans

https://www.dropbox.com/scl/fo/twuqmczh58ns21aftoicf/AFcNTGsuoy_08yKd6MeNqI0?rlkey=45p4jogaap90s078cm0gvalfy&st=anecypmx&dl=0

Exhibit B – Insurance Requirements

(Separately Attached)

Exhibit F

INSURANCE REQUIREMENTS

OWNER-FURNISHED INSURANCE

- **BUILDERS RISK INSURANCE.**

Owner will provide Builder's Risk insurance for the benefit of Contracting Party, Prime Subcontractor and all Subcontractors and Sub-subcontractors that shall be in force during the term of this Agreement (and, in any event, through at least final completion of the Work, at which time Owner shall procure customary property insurance with respect to the Work). This Builder's Risk insurance shall insure against all risks of physical loss and/or damage, to all buildings, structures, materials and real property to be incorporated into and forming part of the Project, whether or not such buildings, structures, materials or real property will have been supplied or made available to eligible Subcontractors and Sub-subcontractors by Prime Subcontractor. The Builder's Risk coverage shall have a deductible of no more than \$25,000 per occurrence and will include coverage for materials in transit or temporarily stored off-Site.

The Builder's Risk insurance policy shall be endorsed to add Prime Subcontractor and all eligible Subcontractors as additional named insureds, as their interests may appear and to waive the carrier's right of recovery under subrogation against Prime Subcontractor and all eligible Subcontractors whose interests are insured under such policy. Deductible amounts of the Builder's Risk Insurance policy shall be payable by Contracting Party. All Builder's Risk Insurance losses will be adjusted with and payable to Owner, Contracting Party or Prime Subcontractor for the benefit of all parties as their interest may appear.

The Owner, Contracting Party and Prime Subcontractor waive all rights against (1) each other and any subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Consultants or separate contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by Builder's Risk insurance required herein or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contracting Party, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Consultants, separate contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this Exhibit F shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

If during the construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of this Exhibit F for damages caused by fire or other causes of loss covered by this separate property insurance.

PRIME SUBCONTRACTOR/SUBCONTRACTOR/SUB-SUBCONTRACTOR-FURNISHED INSURANCE

Prime Subcontractor shall not commence the Work under this Agreement until it has obtained insurance in compliance to the following requirements:

- **COVERAGE AND LIMITS**

Prime Subcontractor will purchase and maintain (with companies licensed to do business in the State of Texas and having rates of *Best's Insurance Guide A/VIII*, or better) insurance coverages and amounts as set forth below:

TYPE	AMOUNT	OTHER REQUIREMENTS
1. Workers' Compensation and Employer's Liability	Statutory workers' compensation coverage Employers Liability \$1,000,000 each accident \$1,000,000 policy limit bodily injury by disease \$1,000,000 each employee, bodily injury by disease	1. Waiver of subrogation in favor of Insured Parties (hereafter defined). 2. No "alternative" forms of coverage will be permitted. 3. Insured Parties will be names as an "alternate employer".
2. Commercial General Liability (Occurrence Basis)	\$1,000,000 per occurrence \$2,000,000 general aggregate \$2,000,000 product-completed operations aggregate limit. \$1,000,000 personal and advertising injury limit \$50,000 fire legal liability \$5,000 medical expense limit	1. ISO form CG 0001, or equivalent 2. Insured Parties will be named as "additional insureds" on ISO Forms CG 2010 0704 and 2037 0704, or equivalent. The additional insured endorsement(s) must provide coverage for both ongoing and completed operations. 3. Waiver of subrogation in favor of Insured Parties 4. Aggregate limit of insurance (per project) endorsement. 5. Deletion of exclusions for liability assumed under contract (personal and advertising injury) 6. No modification which would make Prime Subcontractor's policy excess over or contributory with Contracting Party's liability insurance 7. Defense will be provided as an additional benefit and not included within the limit of liability 8. There will be no coverage exclusions for, residential/habitational work, subsidence and earth movement.
3. Business Automobile Liability (Occurrence Basis)	Combined single limit for bodily injury and property damage of \$1,000,000 per occurrence or its equivalent.	1. ISO form CA 0001 or equivalent 2. Insured Parties will be named as "additional insureds" 3. Waiver of subrogation in favor of Insured Parties 4. Includes owned, hired and non-owned vehicles
4. Umbrella Liability	\$5,000,000	1. Written on an umbrella basis above the coverage referenced above and follow form. 2. Same inception and expiration dates as commercial general liability insurance
5. Professional Liability Insurance (Errors & Omissions)	\$1,000,000 Professional Liability Policy if Prime Subcontractor performs design/build work unless otherwise agree to by Contracting Party	1. To be maintained for at least two years after the Date of Final Completion
5. Contractor's Equipment Coverage	100% replacement cost of all of Prime Subcontractor's equipment and other property	1. Waiver of subrogation in favor of Contracting Party. 2. Name Insured Parties: Prime Subcontractor. 3. Contain only standard printed exclusions. 4. Equipment floater to cover Subcontractors' and Sub-subcontractors' equipment.

• **OTHER REQUIREMENTS**

Any aggregate limit which is reduced below 75% of the limit required by this Agreement because of losses incurred must be reinstated by Prime Subcontractor. No deductible or self-insured retention in excess of \$50,000 without the prior written approval of Contracting Party; provided, however, the deductible or self-insured retention of up to \$50,000 for Professional Liability Insurance is approved by Contracting Party.

- **EVIDENCE OF INSURANCE REQUIRED**

Prime Subcontractor shall not commence any Work of any kind under this Agreement until all the insurance requirements contained in this Exhibit F have been provided and complied with, and until a Certificate of Insurance has been provided to Contracting Party's. Evidence to be delivered to Contracting Party prior to commencing operations at the Site and at least 5 days prior to the expiration of current policies. **The "ACORD Form 25 Certificates of Liability Insurance" is required where reference is made herein to a "Certificate of Insurance"**. The Certificate of Insurance must specify the additional insured status and waivers of subrogation, state the amounts of all deductibles and self-insured retentions, set forth notice requirements for cancellation, material change, or non-renewal of insurance and be accompanied by copies of all required endorsements. If requested in writing by Contracting Party, Prime Subcontractor shall provide Contracting Party a certified copy of any or all insurance policies or endorsement required under this Exhibit F.

- **INSURANCE TERM**

Except for as otherwise provided below, any and all insurance required by this Exhibit F shall be maintained until the Date of Final Completion. Commercial General Liability Insurance and the Umbrella Liability Coverage Associated therewith shall be maintained for a minimum period of two years after the Date of Final Completion.

- **MANDATORY 30-DAY NOTICE OF CANCELLATION**

Contracting Party shall, without exception, be given not less than 30-day's notice prior to cancellation of insurance for other than non-payment of premium. Non-payment of premium shall require ten-day's notice of cancellation. Confirmation of this mandatory notice of cancellation shall appear on the Certificate of Insurance and on any and all insurance policies required by this Exhibit F.

- **ADDITIONAL INSURED STATUS**

Each insurance policy described in this Exhibit F permitting an additional insured endorsement shall be endorsed, using additional insured endorsement ISO Form CG 2010 1185 or CG 2010 0704 or CG 2037 0704 (or broader endorsement) to name as additional insureds Owner, Ojala [PROJECT NAME] GP, LLC, Contracting Party, Fort Worth, Texas and each of their partners, officers, directors, members, owners, agents, employees and Lenders (collectively, the "Insured Parties").

- **PRIMARY COVERAGE**

The coverage required to be procured by Prime Subcontractor/Subcontractor pursuant to this Exhibit F shall be primary insurance and non-contributory with respect to any insurance.

- **OTHER INSURANCE PROVISIONS**

Prime Subcontractor shall include terms substantially the same as stated herein in all contracts with Subcontractors, including a waiver of subrogation in favor of Owner, Contracting Party, and Lender and the naming of Contracting Party, and Lender as an additional insured with respect to claims arising out of operations performed pursuant to or incidental to this Agreement, whether by Prime Subcontractor or its Subcontractors. In addition, any Material Supplier(s) delivering materials (for the Project) to the Site shall maintain Business Automobile Liability insurance coverage satisfying the minimum limits and other requirements set forth above in this Exhibit F with respect to Business Automobile insurance coverage to be maintained by Prime Subcontractor.

Should Subcontractors engage a lower-tier Sub-subcontractor, the same conditions will apply under this Agreement to each lower-tier Sub-subcontractor. Copies of certificates of insurance for lower-tier Sub-subcontractor must be filed with Prime Subcontractor within five (5) business days before a Subcontractor is on the Site. Failure to provide evidence of such insurance can result in Subcontractor being removed from the Site until proper coverage is verified. Any cost of resulting delay will be to the account of Subcontractor.

The amount and types of insurance coverages required herein shall not be construed to be a limitation of the liability on the part of Prime Subcontractor and Subcontractors, (or Material Suppliers, with respect to any required Business Automobile Liability insurance coverage) or any lower-tier Sub-subcontractor. Any type of insurance or any increase of limits of liability not described above which Prime Subcontractor or a Subcontractor requires for its own protection or on account of statute shall be its own responsibility and at its own expense. The carrying of the insurance described

shall in no way be interpreted as relieving Prime Subcontractor, Subcontractors, or Sub-subcontractors of any responsibility or liability under this Agreement.

In the event of failure of Prime Subcontractor, Subcontractors, (or Material Suppliers, with respect to any required Business Automobile Liability insurance coverage) or Sub-subcontractors to furnish and maintain said insurance and to furnish satisfactory evidence thereof, Contracting Party shall have the right to take out and maintain same coverages for all parties on behalf of Prime Subcontractor, Subcontractors, (Material Suppliers, with respect to any required Business Automobile Liability insurance coverage) or Sub-subcontractors who also agree to furnish all necessary information and to pay the cost thereof to Contracting Party immediately upon presentation of a premium invoice.

Contracting Party, at its sole discretion, may consider reduced coverage amounts submitted in writing by Prime Subcontractor, Subcontractor, (Material Supplier, with respect to any required Business Automobile Liability insurance coverage) or Sub-subcontractor for specific Subcontract or Sub-subcontractors. Acceptance of a non-conforming certificate of insurance by Contracting Party shall not constitute a waiver of any rights of Contracting Party under this Agreement.

EXHIBIT C – GEOTECHNICAL REPORT

(Separately Attached)

GEOTECHNICAL ENGINEERING REPORT

DRAFT



HUGHES HOUSE II
FORT WORTH, TEXAS

GEOTECHNICAL ENGINEERING REPORT

Hughes House II
Fort Worth, Texas

Prepared by:



Riner Engineering, Inc., a UES Company

Prepared for:

McCormack Baron Salazar Development Inc.
100 North Broadway Suite 100
St. Louis, Missouri 63102

Attention: Mr. Mike Saunders, AIA, LEED Green Associate

March 26, 2024

RINER Project No. 24-0104



Riner
Engineering
A UES Company

Houston
Fort Worth
San Antonio
Dallas
Austin

March 26, 2024

Mr. Mike Saunders, AIA, LEED Green Associate
Senior Vice President, Director of Design
McCormack Baron Salazar Development Inc.
100 North Broadway Suite 100
St. Louis, Missouri 63102

Re: GEOTECHNICAL ENGINEERING REPORT
Hughes House II
Fort Worth, Texas
RINER Project No. 24-0104

Dear Mr. Saunders:

Riner Engineering, Inc. (RINER), a UES Company, is pleased to submit this Geotechnical Engineering Report for the referenced project. We appreciate the opportunity of working with you. Please contact us if you have any questions or require additional services.

Respectfully submitted,

Md. Rakib Hasan, Ph.D., P.E.
Senior Geotechnical Engineer

Reza Keshavarz, Ph.D., P.E.
North Texas Director

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- Appendix B - Boring Location Diagram
- Appendix C - Boring Logs and Laboratory Results
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- Appendix F - Geologic Information
- Appendix G - Unified Soil Classification System

DRAFT

GEOTECHNICAL ENGINEERING REPORT

Hughes House II
Fort Worth, Texas

1.0 INTRODUCTION

Project Location. The project is located between Avenue G and Calumet Street, from Amanda Avenue to the west of Liberty Street in Fort Worth, Texas. The general location and orientation of the site are provided in Appendix A - Project Location Diagrams.

Project Description. The project consists of twenty-one (21) wood-framed apartment buildings and townhomes, a swimming pool, an amenity building, a maintenance building, ± 500 LF of public roadway per City of Fort Worth, and private paving areas.

Project Authorization. This geotechnical study was authorized by Mr. Mike Saunders, AIA, Senior Vice President, Director of Design, with McCormack Baron Salazar Development Inc. and performed in accordance with RINER Proposal No. P24-0113 dated January 22, 2024.

Purpose and Methodology. The principal purposes of this study were to evaluate the general soil conditions at the proposed site and to develop geotechnical engineering design recommendations. To accomplish its intended purposes, this study was conducted in the following phases:

1. Drill sample borings to evaluate the soil conditions at the boring locations and to obtain soil samples;
2. Conduct laboratory tests on selected samples recovered from the borings to establish the pertinent engineering characteristics of the soils; and
3. Perform engineering analyses, using field and laboratory data, to develop design criteria.

Required Review. Detailed design plans were not available at the time of preparation of this report. Recommendations in our report are contingent upon RINER reviewing and verifying that the site grading, foundation plans, and loadings are in general conformance with our recommendations provided in this report.

Cautionary Statement Regarding Use of this Report. As with any geotechnical engineering report, this report presents technical information and provides detailed technical recommendations for civil and structural engineering design and construction purposes. RINER, by necessity, has assumed the user of this document possesses the technical acumen to understand and properly utilize the information and recommendations provided herein. RINER strives to be clear in its presentation and, like the user, does not want potentially detrimental misinterpretation or misunderstanding of this report. Therefore, we encourage any user of this report with questions regarding its content to contact RINER for clarification.

Clarification will be provided verbally and/or issued by RINER in the form of a report addendum, as appropriate.

Report Specificity. This report was prepared to meet the specific needs of the client for the specific project identified. Recommendations contained herein should not be applied to any other project at this site by the client or anyone else without the explicit approval of RINER.

This Report is NOT a Specification. Recommendations in this report are not specifications. Geotechnical engineering requires significant experience and professional judgment. Conditions vary in the field which require and/or allow modification to recommendations provided herein at the discretion of the Geotechnical Engineer of Record.

2.0 FIELD STUDY

Subsurface study. The subsurface study for this project is summarized in the following table. Boring locations are provided in Appendix B - Boring Location Diagram.

Boring Nos.	Depth, feet bgs ¹	Date Drilled	Location ²
B-01 to B-23	15 to 20	01/31/2024 to 02/09/2024	Building Areas
B-24	20	01/31/2024	Swimming Pool Area
B-25 to B-30	5	01/31/2024 to 02/08/2024	Paving Areas
B-31 and B-32	15	02/01/2024	Public Roadway Alignment
Notes: 1. bgs = below ground surface 2. Boring locations provided in Appendix B - Boring Location Diagram were not surveyed and should be considered approximate. Borings were located by recreational hand-held GPS unit. Horizontal accuracy of such units is typically on the order of 20-feet.			

Boring Logs. Subsurface conditions were defined using the sample borings. Boring logs generated during this study are included in Appendix C - Boring Logs and Laboratory Results. Borings were advanced between sample intervals using continuous flight auger drilling procedures.

Cohesive Soil Sampling. Cohesive soil samples were generally obtained using Shelby tube samplers in general accordance with American Society for Testing and Materials (ASTM) D1587. The Shelby tube sampler consists of a thin-walled steel tube with a sharp cutting edge connected to a head equipped with a ball valve threaded for rod connection. The tube is pushed into the undisturbed soils by the hydraulic pulldown of the drilling rig. The soil specimens were extruded from the tube in the field, logged, tested for consistency using a hand penetrometer, sealed and packaged to maintain "in situ" moisture content.

Consistency of Cohesive Soils. The consistency of cohesive soil samples was evaluated in the field using a calibrated hand penetrometer. In this test a 0.25-inch diameter piston is pushed into the undisturbed sample at a constant rate to a depth of 0.25-inch. The results of these tests are tabulated at the respective sample depths on the boring logs. When the capacity of the penetrometer is exceeded, the value is tabulated as 4.5+.

Split Spoon Sampling (SPT). Granular soil samples and some cohesive soil samples were generally obtained using split-barrel sampling procedures in general accordance with ASTM D1586. In the split-barrel procedure, a disturbed sample is obtained in a standard 2-inch outside diameter (OD) split barrel sampling spoon driven 18-inches into the ground using a 140-pound (lb) hammer falling freely 30 inches. The number of blows for the last 12-inches of a standard 18-inch penetration is recorded as the Standard Penetration Test resistance (N-value). The N-values are recorded on the boring logs at the depth of sampling. Samples were sealed and returned to our laboratory for further examination and testing.

Groundwater Observations. Groundwater observations are shown on the boring logs.

Borehole Plugging. Upon completion of the borings, the boreholes were backfilled from the top and plugged at the surface.

3.0 LABORATORY TESTING

RINER performs visual classification and any of a number of laboratory tests, as appropriate, to define pertinent engineering characteristics of the soils encountered. Tests are performed in general accordance with ASTM or other standards and the results included at the respective sample depths on the boring logs or separately tabulated, as appropriate, and included in Appendix C - Boring Logs and Laboratory Results. Laboratory tests and procedures routinely utilized, as appropriate, for geotechnical studies are tabulated in the following table.

Test Procedure	Description
ASTM D7928	Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis
ASTM D1140	Standard Test Methods for Amount of Material in Soils Finer than the No. 200 (75- μ m) Sieve
ASTM D2166	Standard Test Method for Unconfined Compressive Strength of Cohesive Soil
ASTM D2216	Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D2487	Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D2488	Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)
ASTM D2937	Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method
ASTM D4220	Standard Practices for Preserving and Transporting Soil Samples
ASTM D4318	Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

Test Procedure	Description
ASTM D4546	Standard Test Methods for One-Dimensional Swell or Settlement Potential of Cohesive Soils
Manufacturer's Instructions	Soil Strength Determination Using a Torvane
Tex-145-E	Determining Sulfate Content in Soils - Colorimetric Method

4.0 SITE CONDITIONS

4.1 General

Review of Aerial Photographs. Historical aerial photographs of the site were reviewed for potential past alterations to the site which could impact geotechnical design conditions. Specifically, aerial photographs were reviewed to visually assess obvious areas of significant past fill on site. Aerial photographs reviewed for this study are identified in the following table and are included in Appendix D - Aerial Photographs.

Aerial Photographs Reviewed	
Year	Observations Since Prior Aerial Photograph
2001	The site was occupied by apartment/townhome buildings and associated pavement.
2007	No visible changes were noted.
2014	No visible changes were noted.
2020	Existing buildings and associated pavement were demolished and removed from site.
2023	Signs of earthwork and presence of stockpiles were noted on the west side of the site.
2024	Signs of farther earthwork was noted on the west side of the site.

Site Fills Based on Aerial Photographs Review. Aerial photographs indicate the site was occupied by buildings before 2020. Signs of earthwork and stockpiles were also noted in 2023 and 2024. Our review revealed the possibility of fill material presence at the site. Existing fill recommendations are provided in Section 5.11.

Potential Existing Foundations. Demolition considerations for the potential existing foundations are provided in Section 5.7.

Limitations. Due to the intermittent nature and relatively low resolution of aerial photographs, as well as our lack of detailed information regarding the past land use of the site, our review should not be interpreted as eliminating the possibility of cuts and/or fills on site which could detrimentally affect future construction.

Topography. A United States Geological Survey (USGS) topographic map of the site is provided in Appendix E - USGS Topographic Map.

4.2 Geology

Geologic Formation. Based on available surface geology maps and our experience, it appears this site is located in the Grayson Marl and Main Street Limestone, Undivided Formation near the mapped contact with Woodbine Formation. A geologic atlas and USGS formation description are provided in “Appendix F - Geologic Information”. The Grayson Marl and Main Street Limestone, Undivided Formation generally consists of interbedded marl (limey shale) and limestone. Residual soils associated with this undivided formation generally consist of clay soils with moderate to very high shrink/swell potential.

4.3 Soil/Rock/Fill

Stratigraphy. Descriptions of the various strata and their approximate depths and thickness per the Unified Soil Classification System (USCS) are provided on the boring logs included in “Appendix C - Boring Logs and Laboratory Results”. Terms and symbols used in the USCS are presented in “Appendix G - Unified Soil Classification System”. A summary of the stratigraphy indicated by the borings is provided in the following table.

Generalized Subsurface Conditions at Proposed Building Locations (Borings B-01 to B-23) ¹			
Nominal Depth, feet bgs (Except as Noted)		General Description	Detailed Description of Soils/Materials Encountered
Top of Layer	Bottom of Layer		
0	0 to 6	FILL	Soft to very stiff LEAN CLAY (CL)/ SANDY LEAN CLAY (CL)/ LEAN CLAY WITH SAND (CL)/ CLAYEY SAND (SC)/ SANDY FAT CLAY (CH)/ FAT CLAY WITH SAND (CH)/ SILTY CLAY (CL-ML). ²
0 to 6	8 to 18	VARIABLE BETWEEN LEAN TO FAT CLAY, CLAYEY SAND, AND CLAYEY GRAVEL	Soft to hard SANDY LEAN CLAY (CL)/ LEAN CLAY WITH SAND (CL)/ FAT CLAY (CH)/ SANDY FAT CLAY (CH)/ FAT CLAY WITH SAND (CH)/ CLAYEY SAND (SC), and medium dense to very dense CLAYEY SAND (SC)/ CLAYEY GRAVEL (GC)/ POORLY GRADED SAND (SP)
8 to 18	20	CEMENTED SAND/ SANDSTONE	Reddish brown and light brown CEMENTED SAND/ SANDSTONE. ³
Notes: 1. Boring Termination Depth = 15 to 20 feet bgs. 2. Fill was not encountered in Borings B-18 and B-21. 3. CEMENTED SAND/ SANDSTONE was not encountered in Borings B-02 to B-04, B-06, B-09, B-17, B-18, B-19, and B-22.			

Generalized Subsurface Conditions at Proposed Swimming Pool Location (Boring B-24) ¹			
Nominal Depth, feet bgs (Except as Noted)		General Description	Detailed Description of Soils/Materials Encountered
Top of Layer	Bottom of Layer		
0	4	FILL	Stiff SANDY LEAN CLAY (CL)/ LEAN CLAY WITH SAND (CL)
4	18	CLAYEY SAND	Very dense CLAYEY SAND (SC)
18	20	FAT CLAY	Hard FAT CLAY (CH)
<u>Note:</u> 1. Boring Termination Depth = 20 feet bgs.			

Generalized Subsurface Conditions at Proposed Paving Locations (Borings B-25 to B-30) ¹			
Nominal Depth, feet bgs (Except as Noted)		General Description	Detailed Description of Soils/Materials Encountered
Top of Layer	Bottom of Layer		
0	0 to 5	FILL	Stiff to very stiff SANDY LEAN CLAY (CL)/ LEAN CLAY WITH SAND (CL)/ SANDY FAT CLAY (CH)/ FAT CLAY WITH SAND (CH). ²
0 to 5	5	CLAYEY SAND/ LEAN CLAY/ FAT CLAY	Stiff to very stiff CLAYEY SAND (SC)/ SANDY LEAN CLAY (CL)/ LEAN CLAY WITH SAND (CL)/ FAT CLAY (CH)
<u>Notes:</u> 1. Boring Termination Depth = 5 feet bgs. 2. Fill was not encountered in Boring B-29.			

Generalized Subsurface Conditions at Proposed Public Roadway Alignment (Borings B-31 and B-32) ¹			
Nominal Depth, feet bgs (Except as Noted)		General Description	Detailed Description of Soils/Materials Encountered
Top of Layer	Bottom of Layer		
0	7	FILL	Very stiff SANDY LEAN CLAY (CL)/ LEAN CLAY WITH SAND (CL). ²
7 to 15	15	FAT CLAY/ LEAN CLAY	Stiff to hard SANDY FAT CLAY (CH)/ FAT CLAY WITH SAND (CH)/ LEAN CLAY
<u>Notes:</u> 1. Boring Termination Depth = 15 feet bgs. 2. Fill was not encountered in Boring B-31.			

Swell Potential based on Atterberg Limits. Atterberg (plastic and liquid) limits were performed on 38 shallow soil samples obtained at depths between 0- and 12-feet bgs. The plasticity index of the samples was between 7 and 48 with an average of 27 indicating that the soils have a moderate to high potential for shrinking and swelling with changes in soil moisture content.

Swell Tests. Swell tests were performed on selected clay soil samples. Swell test details are provided in “Appendix C - Boring Logs and Laboratory Results”. The results of the tests are summarized in the following table.

Boring No.	Avg. Depth (ft.)	Initial Moisture Content, w, %	Liquid Limit, LL	Plasticity Index, PI	Applied Overburden Stress (psi)	Swell (%)
B-01	7	17.8	38	26	6.1	-0.18
B-02	3	19.1	Test not performed		2.6	-0.83
B-03	1	13.0	27	14	0.9	-0.20
B-04	3	22.5	55	39	2.6	-0.61
B-06	3	19.2	41	27	2.6	-0.10
B-07	3	22.0	Test not performed		2.6	-0.07
B-08	3	19.5	43	28	2.6	-0.30
B-09	3	18.6	Test not performed		2.6	-0.29
B-10	5	16.4	Test not performed		4.3	-0.01
B-11	3	18.5	40	24	2.6	0.04
B-12	1	13.7	Test not performed		0.9	0.20
B-13	3	15.7	31	19	2.6	-0.09
B-14	1	12.8	27	11	0.9	0.80
B-14	3	18.6	Test not performed		2.6	0.61
B-15	3	12.4	Test not performed		2.6	-0.66
B-16	3	13.3	61	47	2.6	4.88
B-17	7	14.5	60	45	6.1	1.86
B-18	3	19.5	Test not performed		2.6	1.25
B-18	7	15.1	Test not performed		6.1	1.31
B-19	3	16.2	55	37	2.6	3.38
B-20	3	18.8	60	44	2.6	1.73
B-20	5	18.0	33	18	4.3	0.01
B-21	1	15.5	Test not performed		0.9	0.01
B-21	3	24.0	74	37	2.6	1.19
B-22	1	9.2	36	25	0.9	-2.58
B-22	3	16.4	Test not performed		2.6	-0.54
B-23	1	11.5	29	16	0.9	-0.56
B-24	3	17.4	28	14	2.6	0.09
B-25	3	10.5	29	17	2.6	-0.57
B-26	1	14.6	52	38	0.9	2.54
B-27	3	17.1	37	24	2.6	-4.19
B-28	1	16.0	27	11	0.9	0.89
B-29	5	11.9	53	41	4.3	4.51
B-30	3	16.0	36	21	2.6	0.76
B-31	1	13.6	Test not performed		0.9	0.00
B-32	3	15.8	30	16	2.6	-0.44

Soluble Sulfate Testing. Soluble sulfate testing (Tex-145-E) was performed for this project. The results are summarized in the table below.

Boring No.	Depth (feet, bgs)	Sulfate Content (ppm)
B-01	4-6	133
B-02	0-2	227
B-03	4-6	347
B-06	4-6	500
B-07	4-6	533
B-08	0-2	180
B-09	2-4	573
B-10	4-6	693
B-11	2-4	933
B-11	4-6	307
B-13	4-6	1,853
B-14	2-4	207
B-16	4-6	926
B-17	2-4	527
B-18	2-4	1,067
B-18	4-6	2,547
B-18	6-8	627
B-19	4-6	573
B-20	0-2	280
B-21	0-2	273
B-22	2-4	707
B-24	0-2	273
B-24	2-4	913
B-25	0-2	700
B-26	2-4	961
B-27	0-2	287
B-28	2-4	333
B-30	4-5	287
B-32	0-2	607

4.4 Groundwater

Groundwater Levels. The borings were advanced using auger drilling and intermittent sampling methods in order to observe groundwater seepage levels. Groundwater levels encountered in the borings during this study are identified in the following table.

Boring No.	Depth Groundwater Initially Encountered (feet, bgs)	Groundwater Depth after 15 Minutes (feet, bgs)
B-07	18.0	18.0
B-10	7.0	7.0
B-12	17.0	17.0
B-13	17.0	17.0
B-14	12.0	12.0

Boring No.	Depth Groundwater Initially Encountered (feet, bgs)	Groundwater Depth after 15 Minutes (feet, bgs)
B-22	17.0	17.0
B-24	15.0	15.0
All other borings	Not Encountered	Not Encountered

Long-term Groundwater Monitoring. Long-term monitoring of groundwater conditions via piezometers was not performed during this study and was beyond the scope of this study. Long-term monitoring can reveal groundwater levels materially different than those encountered during measurements taken while drilling the borings.

Groundwater Fluctuations. Future construction activities may alter the surface and subsurface drainage characteristics of this site. It is difficult to accurately predict the magnitude of subsurface water fluctuations that might occur based upon short-term observations. The groundwater level should be expected to fluctuate throughout the years with variations in precipitation.

5.0 ANALYSIS AND RECOMMENDATIONS

5.1 Seismic Site Classification

The seismic site classification is based on the 2018 International Building Code (IBC) and is a classification of the site based on the type of soil/rock encountered at the site and their engineering properties. The field study did not include a 100-foot-deep boring. Therefore, the soil/rock properties are unknown in sufficient detail. This section states that where site-specific data are not available to a depth of 100-feet, appropriate soil properties are permitted to be estimated by the registered design professional preparing the soil investigation report based on known geologic conditions. Per Table 20.3-1 of ASCE 7-10, the seismic site classification for this site is C.

5.2 Potential Vertical Rise (PVR)

Potential Vertical Rise. Potential Vertical Rise, PVR, is the calculated upward heave of the ground surface due to expansive soils related to weather-related changes in soil moisture in the active zone. PVR only applies to upward movement. The term settlement applies to downward movement related to loads on the soil.

Problem Discussion. Most clay soils swell when subjected to increases in moisture content. Swelling clay soils exert an outward pressure that can easily exceed 5,000 psf when subjected to moisture increases. Swell potential and swell pressures are a function of several factors including clay mineralogy and antecedent moisture condition. Generally, for a given clay soil,

the drier the soil the greater its potential to swell and the higher its swell pressure. Conversely, wetter soils generally have a lower potential to swell and have lower swell pressures. The potential for a clay soil to swell is a variable and cannot be separated from its moisture condition.

The overburden pressure at a given depth above the groundwater table is calculated as the unit weight of the soil times the depth. For a soil with a unit weight of 125 pcf, the overburden pressure at 10-feet would be 1,250 psf (125 pcf x 10-feet). Thus, the swell pressure can exceed the overburden at depths of over 40-feet. This means soils at 40-feet exposed to changes in moisture can impact movements at the ground surface.

For a clay soil to swell or shrink, it must be subjected to increases or decreases in moisture content, respectively. The predominant way clay soils are subjected to increases or decreases in moisture content is the weather. As would be expected, extended periods of wet weather cause soil to get wetter and extended dry weather cause soil to get drier. The longer the period of wet or dry weather, the deeper the influence of the weather. Vegetation also causes variations in soil moisture content. Shallow rooted grass and bushes have a shallower impact, deep rooted trees have a deeper impact.

For a clay soil at a given depth to influence surface heave, two things must happen: (1) the soil must be subjected to an increase in moisture, and (2) the swell pressure of the soil must exceed the overburden pressure. Swell is typically calculated by assuming an “active” zone, a depth of soil impacted by weather which predominantly affects surface movements due to soil swell. Expansive soils below the active zone are typically ignored as they are assumed to be exposed to lower increases in moisture, experience higher overburden pressures, and have a less significant impact on the surface heave than the soils in the active zone.

“Deep-seated” soil movement is swelling of the clay soils below the active zone and above the equilibrium depth. The equilibrium depth is the depth at which the overburden pressure and clay swell pressure are equal. Deep-seated soil movement is caused by changes in moisture that are typically not related to weather or vegetation. They can be caused by man-made influences such as leaking deep water or sewer lines. They can be caused by natural influences such as fluctuations in soil moisture content or groundwater levels. They are notoriously hard to accurately predict and may or may not actually occur. Unless stated otherwise, we have not included the effects of deep-seated soil movement in our Potential Vertical Rise (PVR) calculation. The inclusion of deep-seated soil movement drastically increases the depth of the building pad preparation required and may make a slab-on-grade target PVR of 1-inch theoretically unattainable. The inclusion or exclusion of deep-seated soil movement is a matter of professional opinion, on which there is no consensus among consultants. It is also a matter of risk tolerance and cost, of which, the user of this report is being made aware.

As evidenced in this discussion, calculation of PVR is based on soil data, model assumptions, experience, and professional judgment. PVR is a calculated estimate and should not be construed to be an absolute number or a guarantee of performance. PVR can be higher or

lower depending on actual site conditions. The PVR estimate we provide is our best estimate of what will be encountered and the user of this report with doubts is encouraged to get another professional opinion prior to using this report. However, based on this discussion, the reader understands variations between the model and reality can introduce significant differences in calculated PVR. The user of this report understands and accepts this risk. If this risk is intolerable, the user of this report should be prepared to utilize a structural slab suspended adequately above the subgrade surface and supported on deep foundations.

Differential swelling of clay soil is generally most pronounced around the perimeter of slabs or pavement where weather and/or vegetative influences are greatest. Unstiffened slabs or paving are generally prone to cracking around 5- to 10-feet from and parallel to the slab edge due to differential soil movements. If this expected cracking is unacceptable or needs to be minimized, the structural engineer should consider slab stiffening using grade beams and/or a flexible slab/wall connection design. We should be consulted by the structural engineer for clarifications and input regarding this type of slab movement if it is deemed critical.

Maintaining a consistent moisture content in the soil is the key to minimizing both heave and shrinkage related structural problems. Therefore, building maintenance and control of water are paramount in the performance of a slab-on-grade and shallow foundations.

PVR or Equivalent Calculations. The PVR or its equivalent can be estimated several ways. RINER utilizes the TxDOT method and swell tests to provide the best possible understanding of expected PVR and its variability.

Calculated PVR using TxDOT Method Tex-124-E. PVR calculations were performed in general accordance with the Texas Department of Transportation (TxDOT) Method Tex-124-E. The Tex-124-E method is empirical and is based on the Atterberg limits and moisture content of the subsurface soils. The calculated PVR is an empirical estimate of a soil's potential for swell based upon the soil's plasticity index, applied loading (due to structures or overburden), and antecedent moisture condition. The PVR calculated using TxDOT Method Tex-124-E is about 1- to 4-inches assuming an average antecedent moisture condition. The calculated PVR is consistent with soil moisture conditions at the time this study was conducted. A X-feet zone of seasonal moisture variation was used in our analysis based on local experience.

Calculated PVR using Swell Test Results. The equivalent PVR based on the swell test results is about 1- to 4-inches. The PVR based on swell test results is dependent on the moisture conditions at the time of testing. A 12-foot zone of seasonal moisture variation was used in our analysis based on local experience.

Soil Moisture Confirmation Prior to Construction. The calculated PVR can vary considerably with prolonged wet or dry periods. We recommend the moisture content for the upper 12-feet (active zone) of soils within the building pad be assessed for consistency with this report prior to construction if:

1. An extended period of time has elapsed between the performance of this study and construction of the foundation, or
2. Unusually wet or dry weather is experienced between the performance of this study and construction of the foundation.

5.3 Sulfate Induced Heave

Sulfate/sulfide minerals, when exposed to water, will react with calcium-based additives (lime, cement, and Class CS fly ash) and clay soils to form ettringite. As the mineral ettringite forms, it can expand approximately 2 to 2.5 times its original volume. This process is known as sulfate induced heave and is the cause of swelling in the treated subgrade soils and the overlying pavement/slab structure. The table below presents the general guidelines for lime treatment and soil sulfate mitigation:

Soluble Sulfate Concentration (ppm)	General Guidelines for Soil Sulfate Mitigation
0 to 3,000	No restrictions
3,001 to 7,000	In a single application, add the prescribed total amount of lime. Uniformly mix the lime into the soil being treated. Lightly compact the mixture to seal and minimize carbonation. Maintain moisture content above the optimum moisture content of the soil being treated. Three days after the initial addition of lime, determine the soluble sulfate concentration at locations sampled as directed using Tex-145-E, and if the sulfate measurement has been reduced to 3,000 ppm or less, then no additional lime or mellowing time is necessary; however, if sulfate measurement has not been reduced to 3,000 ppm or less, then add 4% additional lime. Uniformly mix the lime into the pretreated soil. Lightly compact the mixture to seal and minimize carbonation and mellow an additional 7 days while maintaining moisture content above optimum. Reprocess the soil-lime mixture to meet the gradation requirements in TxDOT Item 260 - Lime Treatment, Table 1, and compact it at the optimum moisture content.
Greater than 7,000	RINER must provide specific recommendations on a case-by-case basis.

*Based on the testing results presented in Section 4.3, the sulfate content of tested soil samples is in the range of 133 ppm to 2,547 ppm indicating that the levels of sulfate are low. **Additional sulfate screening testing is recommended to be performed on potential material to receive lime treatment prior to construction.***

5.4 Construction Excavations

All excavations should be sloped, shored, or shielded in accordance with Occupational Safety and Health Administration (OSHA) excavation standards.

The contractor is responsible for designing any excavation slopes, temporary sheeting, or shoring. The design of these structures should include any imposed surface surcharges. Construction site safety is the sole responsibility of the contractor, who shall also be solely responsible for the means, methods, and sequencing of construction operations. The contractor should also be aware that slope height, slope inclination or excavation depths (including utility trench excavations) should in no case exceed those specified in local, state and/or federal safety regulations, such as OSHA Health and Safety Standard for Excavations, 29 CFR Part 1926, or successor regulations. Stockpiles should be placed well away from the edge of the excavation and their heights should be controlled so they do not surcharge the sides of the excavation. Surface drainage should be carefully controlled to prevent flow of water over the slopes and/or into the excavations. Construction slopes should be closely observed for signs of mass movement, including tension cracks near the crest or bulging at the toe. If potential stability problems are observed, a geotechnical engineer should be contacted immediately. Shoring, bracing or underpinning required for the project (if any) should be designed by a professional engineer registered in the State of Texas.

5.5 Groundwater Control

Groundwater was encountered at depths as shallow as 7.0-feet bgs during the subsurface study. If groundwater is encountered during excavation, dewatering to bring the groundwater below the bottom of excavations may be required. Dewatering could consist of standard sump pits and pumping procedures, which may be adequate to control seepage on a local basis during excavation. Supplemental dewatering will be required in areas where standard sump pits and pumping is not effective. Supplemental dewatering could include submersible pumps in slotted casings, well points, or eductors. The contractor should submit a groundwater control plan, prepared by a licensed engineer experienced in that type of work.

5.6 Earthwork

5.6.1 Site Preparation

In the area of improvements, all concrete, trees, stumps, brush, debris, septic tanks, abandoned structures, roots, vegetation, rubbish and any other undesirable matter should be removed and properly disposed. All vegetation should be removed and the exposed surface should be scarified to an additional depth of at least 6 inches. It is the intent of these recommendations to provide a loose surface with no features that would tend to prevent uniform compaction by the equipment to be used.

5.6.2 Proofroll

Building pad and paving subgrades should be proofrolled with a fully loaded tandem axle dump truck or similar pneumatic-tire equipment to locate areas of loose subgrade. In areas to be cut, the proofroll should be performed after the final grade is established. In areas to be filled, the proofroll should be performed prior to fill placement. Areas of loose or soft subgrade encountered in the proofroll should be removed and replaced with engineered fill, moisture conditioned (dried or wetted, as needed) and compacted in place.

5.6.3 Grading and Drainage

Every attempt should be made to limit the extreme wetting or drying of the subsurface soils because swelling and shrinkage of these soils will result. Standard construction practices of providing good surface water drainage should be used. A positive slope of the ground away from any foundation should be provided. Ditches or swales should be provided to carry the run-off water both during and after construction. Stormwater runoff should be collected by gutters and downspouts and should discharge away from the buildings.

Root systems from trees and shrubs can draw a substantial amount of water from the clay soils at this site, causing the clays to dry and shrink. This could cause settlement beneath grade-supported slabs such as floors, walks and paving. Trees and large bushes should be located a distance equal to at least one-half their anticipated mature height away from grade slabs.

Lawn areas should be watered moderately, without allowing the clay soils to become too dry or too wet.

5.6.4 Wet Weather/Soft Subgrade

Soft and/or wet surface soils may be encountered during construction, especially following periods of wet weather. Wet or soft surface soils can present difficulties for compaction and other construction equipment. If specified compaction cannot be achieved due to soft or wet surface soils, one of the following corrective measures will be required:

1. Removal of the wet and/or soft soil and replacement with select fill,
2. Chemical treatment of the wet and/or soft soil to improve the subgrade stability, or
3. If allowed by the schedule, drying by natural means.

Chemical treatment is usually the most effective way to improve soft and/or wet surface soils. RINER should be contacted for additional recommendations if chemical treatment is planned due to wet and/or soft soils.

5.6.5 Fill

Select Fill. The select fill should consist of soil with a liquid limit less than 35 and a Plasticity Index between 7 and 20. The select fill should be placed in loose lifts not exceeding 8-inches and should be compacted to at least 98 percent maximum dry density (per ASTM D-698) and at a moisture content between optimum and 4 percent above optimum moisture content. The subgrade to receive select fill should be scarified to a depth of 6 inches and compacted to 92 to 96 percent of the material's maximum standard Proctor dry density (ASTM D-698) at a workable moisture level at least 4 percentage points above optimum.

Lime-treated Native Clay Soil. Based on the laboratory testing conducted for this study on selected soil samples in our borings, the native clay on-site soils will not meet requirements for select fill. As an alternative to importing select fill, the native clay soil may be blended with lime to reduce the plasticity index to meet select fill requirements. Based on our experience, we expect that it will require between 6- and 10-percent lime (by dry unit weight) to reduce the plasticity index of the native clay soils to select fill requirements. Prior to selecting this alternative, lime series tests should be performed to assess the amount of lime required. *Lime treatment recommendations provided here assume the subgrade soil receiving lime treatment has sulfate concentrations less than 3,000 ppm. Additional sulfate screening testing is recommended to be performed on potential material to receive lime treatment prior to construction.*

General Fill. General fill may be placed in improved areas outside of building pad areas and below the required moisture conditioned depth in the building pad areas. The general fill should consist of material approved by the Geotechnical Engineer with a liquid limit of less than 50. General fill should be placed in loose lifts not exceeding 8-inches and should be uniformly compacted to a minimum of 98 percent maximum dry density (per ASTM D-698) and at a moisture content between optimum and 4 percent above optimum moisture content.

Fill Restrictions. Select fill and general fill should consist of those materials meeting the requirements stated. Select fill and general fill should not contain material greater than 4-inches in any direction, debris, vegetation, waste material, environmentally contaminated material, or any other unsuitable material.

Unsuitable Materials. Materials considered unsuitable for use as select fill or general fill include low and high plasticity silt (ML and MH), silty clay (CL-ML), organic clay and silt (OH and OL) and highly organic soils such as peat (Pt). These soils may be used for site grading and restoration in unimproved areas as approved by the Geotechnical Engineer. Soil placed in unimproved areas should be placed in loose lifts not exceeding 10-inches and should be compacted to at least 92 percent maximum dry density (per ASTM D-698) and at a moisture content within ± 4 percentage points of optimum.

Cautionary Note. It is extremely important that select fill placed within building pads be properly characterized using one or more representative proctor samples. The use of a proctor sample which does not adequately represent the select fill being placed can lead to erroneous compaction (moisture and density) results which can significantly increase the potential for swelling of the select fill. The plasticity index of select fill soils placed during construction should be checked every day to confirm conformance to the project requirements and consistency with the proctor being utilized.

5.6.6 Testing

Required Testing and Inspections. Field compaction and classification tests should be performed by RINER. Compaction tests should be performed in each lift of the compacted material. We recommend the following minimum soil compaction testing be performed: one test per lift per 2,500 square feet (SF) in the building pad, one test per lift per 5,000 SF outside the building pad, and one test per lift per 100 linear feet of utility backfill. If the materials fail to meet the density or moisture content specified, the course should be reworked as necessary to obtain the specified compaction. Classification confirmation inspection/testing should be performed daily on select fill materials (whether on-site or imported) to confirm consistency with the project requirements. The testing frequency recommended herein can be altered (increased or decreased) at the discretion of the geotechnical engineer of record.

Liability Limitations. Since proper field inspection and testing are critical to the design recommendations provided herein, RINER cannot assume responsibility or liability for recommendations provided in this report if construction inspection and/or testing is performed by another party.

5.7 Demolition Considerations

Applicability. Recommendations in this section apply to the removal of any existing foundations, utilities or pavement which may be present on this site.

General. Special care should be taken in the demolition and removal of existing floor slabs, foundations, utilities and pavements to minimize disturbance of the subgrade. Excessive disturbance of the subgrade resulting from demolition activities can have serious detrimental effects on planned foundation and paving elements.

Existing Foundations. Existing foundations are typically slabs, shallow footings, or drilled piers. If slab or shallow footings are encountered, they should be completely removed. If drilled piers are encountered, they should be cut off at an elevation at least 24-inches below proposed grade beams or the final subgrade elevation, whichever is deeper. The remainder of the drilled pier should remain in place. Foundation elements to remain in place should be surveyed and superimposed on the proposed development plans to determine the potential

for obstructions to the planned construction. RINER should be contacted if drilled piers are to be excavated and removed completely. Additional earthwork activities will be required to make the site suitable for new construction if the piers are to be removed completely.

Existing Utilities. Existing utilities and bedding to be abandoned should be completely removed. Existing utilities and bedding may be abandoned in place if they do not interfere with planned development. Utilities which are abandoned in place should be properly pressure-grouted to completely fill the utility.

Backfill. Excavations resulting from the excavation of existing foundations and utilities should be backfilled in accordance with Section 5.6.5 - Fill.

Other Buried Structures. Other types of buried structures (wells, cisterns, etc.) could be located on the site. If encountered, RINER should be contacted to address these types of structures on a case-by-case basis.

5.8 Loading on Buried Structures

Uplift. Buried water-tight structures are subjected to uplift forces caused by differential water levels adjacent to and within the structure. Soils with any appreciable silt or sand content will likely become saturated during periods of heavy rainfall and the effective static water level will be at the ground surface. For design purposes, we recommend the groundwater level be assumed at the ground surface. Resistance to uplift pressure is provided by soil skin friction and the dead weight of the structure. Skin friction should be neglected for the upper 3 feet of soil. A skin friction of 200 pounds per square foot (psf) may be used below a depth of 3 feet.

Lateral Pressure. Lateral pressures on buried structures due to soil loading can be determined using an equivalent fluid weight of 95 pcf. This includes hydrostatic pressure but does not include surcharge loads. The lateral load produced by a surcharge may be computed as 50 percent of the vertical surcharge pressure applied as a constant pressure over the full depth of the buried structure. Surcharge loads located a horizontal distance equal to or greater than the buried structure depth may be ignored.

Vertical Pressure. Vertical pressures on buried structures due to soil loading can be determined using an equivalent fluid weight of 125 pcf. This does not include surcharge loads. The vertical load produced by a surcharge may be computed as 100 percent of the vertical surcharge pressure applied as a constant pressure over the full width of the buried structure.

5.9 Retaining Structures

Applicability. RINER was not notified of any specific retaining structures in conjunction with this project. Recommendations provided in this section are applicable to structures 5-feet or less in height. Retaining structures more than 5-feet should be brought to the attention of RINER for a more detailed assessment. *It is imperative that global stability be reviewed by RINER on any retaining structure more than 5-feet in height.*

At-Rest Lateral Pressure. Lateral pressures on retaining structures due to soil loading can be determined using an equivalent fluid weight of 75 pcf if fill behind the wall is free-draining and above the groundwater table and 100 pcf if fill behind the wall is not free draining or is below the groundwater table. This does not include surcharge loads. This also assumes a horizontal ground surface behind the structure. The lateral load produced by a surcharge may be computed as 50 percent of the vertical surcharge pressure applied as a constant pressure over the full depth of the buried structure. Surcharge loads set back behind the retaining structure at a horizontal distance equal to or greater than the structure height may be ignored.

Lateral Resistance. Resistance to lateral loads may be provided by the soil adjacent to the structure. We recommend using an equivalent fluid weight of 180 pcf for lateral resistance. The passive resistance should be ignored if the material in front of the wall will be excavated at any time in the future. A coefficient of sliding friction of 0.25 between the retaining structure concrete footings and underlying soil may be combined with the passive lateral resistance. Appropriate safety factor should be utilized by the structural engineer for external stability analyses of the retaining structures.

Bearing Capacity. Assuming a minimum embedment depth of 24-inches into competent undisturbed native soil, an allowable bearing capacity of 2,000 psf may be used for retaining structure footings (using a Factor of Safety of 3).

5.10 Buried Pipe

Applicability. Recommendations in this section are applicable to the design of buried piping placed by open cut methods associated with this project.

Pressure on Buried Pipe. Design recommendations provided in the “Loading on Buried Structures” section of this report apply to buried piping.

Thrust Restraints. Resistance to lateral forces at thrust blocks will be developed by friction developed along the base of the thrust block and passive earth pressure acting on the vertical face of the block. We recommend a coefficient of base friction of 0.25 (using a Factor of Safety of 2) along the base of the thrust block. Passive resistance on the vertical face of the thrust

block may be calculated using the allowable passive earth pressures presented in the following table.

Allowable Passive Earth Pressure by Material Type	
Material	Allowable Passive Pressure (psf)
Native Clay and Clayey Sand	2,000
Compacted Clay Fill	1,500
Note: 1. Passive resistance should be neglected for any portion of the thrust block within 3 feet of the final site grade. The allowable passive resistance for native clays is based on the thrust block bearing directly against vertical, undisturbed cuts in these materials.	

Bedding and Backfill. Pipe bedding and pipe-zone backfill for the water and sanitary sewer piping should be in accordance with TxDOT standard specification Item 400 or the local equivalent. The pipe-zone consists of all materials surrounding the pipe in the trench from six (6) inches below the pipe to 12 inches above the pipe.

Trench Backfill. Excavated site soils will be utilized to backfill the trenches above the pipe-zone. Backfilled soil should be placed in loose lifts not exceeding 8-inches and should be compacted to at least 95 percent maximum dry density (per ASTM D-698) and at a moisture content between optimum and 4 percent above optimum moisture content.

Trench Settlement. Settlement of backfill should be anticipated. Even for properly compacted backfill, fills in excess of 8 to 10 feet are still subject to settlements over time of about 1 to 2 percent of the total fill thickness. This level of settlement can be significant for fills beneath streets. Therefore, close coordination and monitoring should be performed to reduce the potential for future movement.

5.11 Existing Fill

Our review of the aerial photographs indicates existing fill on site. Existing fill was encountered in borings across the site and extended to depths up to 2- to 6-feet. It is difficult and not intended to estimate the transition from the fill to the natural soils in a relatively small diameter and widely spaced borings. For the purpose of this report, we assume the existing fill was placed and compacted under engineered supervision. If there is no record indicating that the fill was placed in and compacted in a controlled manner (engineered fill), it will be necessary to confirm appropriate compaction or excavate all the existing fill in the proposed building pad areas and recompact it in accordance with select fill placement requirements and finalized grading plans prior to construction of the proposed building pad areas. Any existing fill in the paving areas may remain in place if Proofroll is passed per section 5.6.2 of our report.

5.12 Slab-on-Grade

Site Grading. The site grading plan was not available at the time of writing this report. Our recommendations provided herein assumes cuts and fills of less than 1-foot will be required to bring the site to grade. When the site grading plan is available, we should be notified and allowed to review the site grading plan to assess and modify our recommendations, as necessary.

Potential Vertical Slab Movements. Based on the information gathered during this investigation, a slab constructed on-grade may be subject to potential vertical slab movements of up to about 4-inches.

Subgrade Treatment Using Moisture Conditioned Soil. The depth of subgrade treatment is dependent on desired post-construction PVR. The following table presents recommended depth of subgrade treatment to reduce the post-construction PVR to 1-inch.

Subgrade Treatment - Moisture Conditioning Option		
PVR (inches)	Thickness of Cap (inches) ^{1, 2, 3, & 4}	Thickness of Moisture Conditioned Soil below Cap (feet) ^{5 & 6}
1	8	10
Notes: 1. Depth measured below bottom of the slab-on-grade. 2. Lime should be applied at a minimum rate of 36 pounds per square yard for a depth of 8-inches. Lime stabilization should be performed in accordance with TxDOT Standard Specifications, Item 260, "Lime Stabilized Subgrade", or local equivalent. 3. Lime stabilization recommendations provided here assume the subgrade soil receiving lime treatment has sulfate concentrations less than 3,000 ppm. Based on the testing results presented in Section 4.3, the sulfate content of tested soil samples is in the range of 133 ppm to 2,547 ppm indicating that the levels of sulfate are low. The identification of sulfate sources often occurs in seams and stratified pockets and can occur in small, localized areas, thus additional sulfate screening testing is recommended to be performed on potential material to receive lime treatment prior to construction. 4. As an alternative, an 8-inch flexible base or 12-inch select fill may be utilized in-lieu of the 8-inch of lime stabilized clay cap. Flexible base should consist of crushed aggregate base meeting TxDOT Standard Specifications, Item 247, Grade 1-2, Type D, or local equivalent. Flexible base should be compacted to at least 95 percent maximum dry density (per ASTM D-698) and within ± 2 percent of the optimum moisture content. 5. The moisture conditioned native clay soil should be compacted to 92 to 96 percent of the material's maximum standard Proctor dry density (ASTM D-698) at a workable moisture level at least 4 percentage points above optimum and placed in loose lifts not exceeding 9 inches. 6. If Cemented Sand/ Sandstone is encountered within the required moisture conditioned depth, the Cemented Sand/ Sandstone does not need to be over excavated. Placing a concrete slab directly on hard bedrock is not recommended due to the lack of uniformity and potential movement in the bedrock. Bedrock surfaces can have irregularities, fissures, and variations in composition, leading to uneven weight distribution and stress points on the concrete slab. To provide a uniform subgrade under the building slab, we recommend at least the upper 2-feet of the building slab subgrade consist of clay fill (i.e., the building slab should not be supported directly on the rock). Cemented Sand/Sandstone was encountered as shallow as 8-feet bgs in our borings. The depth of		

Subgrade Treatment - Moisture Conditioning Option		
PVR (inches)	Thickness of Cap (inches) ^{1, 2, 3, & 4}	Thickness of Moisture Conditioned Soil below Cap (feet) ^{5 & 6}
shallow Cemented Sand/Sandstone should be verified by a competent person during the construction. RINER should be present at the time of building pad subgrade treatment.		

Subgrade treatment should extend at least 5-feet horizontally beyond the perimeter of the building.

Subgrade Treatment at Exterior Doorways. Subgrade treatment should extend beneath sidewalk areas that abut exterior doorways to the building. Failure to perform subgrade treatment in these areas can increase the probability of differential heaving between exterior sidewalks and doorways, resulting in exterior doors that will not or have difficulty opening outward due to “sticking” caused by heaving sidewalk slabs. Sidewalks tied to pavements and other flatworks that extend beyond the subgrades treated for PVR reduction may be subjected to movements similar to those experienced for untreated subgrades.

Subgrade Moisture. The slab subgrade is prone to drying after being exposed and should be kept moist prior to slab placement.

Moisture Barrier. A moisture barrier should be used beneath the slab foundation in areas where floor coverings will be utilized (such as, but not limited to, wood flooring, tile, linoleum, and carpeting).

Slab Deflection Analysis. Coefficient of subgrade reaction, k, values are soil, load, and settlement dependent. Upon request by the Structural Engineer for this project, k value recommendations will be provided for the specific loading application in question.

Fill Related Slab Settlement. Fill will settle under its own weight. A properly constructed fill will generally settle up to 2% of the fill thickness due to its own weight and independent of external loads. That settlement begins as soon as lift placement begins. The time required for settlement to occur is a function of soil type, pore water, and drainage path conditions and therefore can vary widely. As a result, fill-related settlement should be expected before AND after construction of the slab. Slab movement related to settling fill can be reduced by allowing as much time as possible between the time the fill is placed and construction of the slab. Furthermore, we recommend survey monitoring of constructed fills be performed to verify the rate and magnitude of settlement has been reduced to an acceptable level prior to construction of slabs on the fill.

Load Related Slab Settlement. Slabs on grade will settle when subjected to load. Slab settlement is a function of soil type, load intensity, load geometry, and other factors. Upon request by the Structural Engineer for this project, settlement estimates will be provided for the specific loading application in question.

Movement Risk. Recommendations have been provided to mitigate the effects of soil movement. Some soil movement and related structural cracking and floor unevenness should be expected even after following recommendations in this report. The elimination of risk related to soil movement is typically not feasible. We would be happy to discuss other, more expensive, movement-related risk mitigation alternatives upon request.

5.13 Foundation System

Appropriate Foundation Types. The following foundation type is appropriate to the site based on the geotechnical conditions encountered:

- Slab foundation.

Foundations Adjacent to Slopes. Foundations placed too close to adjacent slopes steeper than 5H:1V may experience reduced bearing capacities and/or excessive settlement. Recommendations provided herein assume foundations are not close enough to adjacent slopes in excess of 5H:1V to be detrimentally affected. Therefore, foundations closer than 5 times the depth of adjacent slopes, pits, or excavations in excess of 5H:1V should be brought to our attention in order that we may review the appropriateness of our recommendations.

Site Grading. The site grading plan was not available at the time of writing this report. Our recommendations provided herein assumes cuts and fills of less than 1-foot will be required to bring the site to grade. When the site grading plan is available, we should be notified and allowed to review the site grading plan to assess and modify our recommendations, as necessary.

Foundation Plans Review. Our office should be contacted to review the foundation plans, details and related structural loads, prior to finalizing the design to check conformance with the recommendations presented herein.

5.13.1 Slab Foundation

General. The proposed wood-framed apartment buildings and townhomes can be supported on a reinforced ground-supported slab foundation if recommendations in sections 5.11 and 5.12 are followed. The slab foundation should be conventionally reinforced or post-tension reinforced. The slab foundation should be designed with exterior and interior grade beams adequate to provide sufficient rigidity to the foundation system to sustain the vertical soil movements expected at this site as described above. All grade beams and floor slabs should be adequately reinforced with steel to minimize cracking as normal movements occur in the foundation soils.

Bearing Capacity. The slab should be designed using a net dead load plus sustained live load bearing pressure of 1,500 psf or a net total load pressure of 2,250 psf, whichever condition results in a larger bearing surface. These bearing pressures are based on a safety factor of 3 and 2, respectively, against shear failure of the foundation bearing soils.

Foundation Depth. Grade beams should be founded a minimum of 18 inches below surrounding grade (supported on moisture conditioned soils). The bottom of the beam trenches should be free of any loose or soft material prior to the placement of the concrete.

PTI Recommendations. A slab constructed on-grade will be subject to potential slab movements of up to about 4-inches based upon the information gathered during this study. Subgrade treatment should be performed to reduce the PVR per section 5.12. The recommended foundation design parameters based on information published in the Post Tensioning Institute (PTI) Design of Post-Tensioned Slabs-on-Ground, 3rd Edition, are as follows:

Allowable PVR in Inches (per Structural Engineer)	Foundation Design Parameters per PTI 3 rd Edition			
	Edge Moisture Variation Distance (feet)		Differential Soil Movement (inches)	
	Center Lift	Edge Lift	Center Lift	Edge Lift
1	8.0	4.0	1.2	1.0

IMPORTANT: The above foundation design parameters assume the suggested subgrade treatment provided in the Slab-on-Grade section has been performed. The recommended foundation design parameters are applicable to climate controlled soil conditions only. These parameters are not applicable when non-climate related factors, such as vegetation, landscaping, trees, drainage, construction methods, land use, or other factors, may influence soil movement. RINER should be contacted to evaluate the effect of non-climate related factors.

Deflection Analysis. Slab deflections should be analyzed per recommendations provided in Section 5.12.

5.14 Private Pavement

General Note. Recommendations for rigid pavement and preparation of the pavement subgrade in private area are provided in the following sections. A traffic study indicating the number and type of vehicles on which to base the pavement design was not provided. Therefore, our recommendations are based upon our experience with similar projects assuming normal vehicular loading. Any unusual loading conditions should be brought to our attention prior to finalizing the pavement design so that we may assess and modify our recommendations as necessary.

5.14.1 Private Rigid Pavement

Portland cement concrete (PCC) with a minimum 28-day compressive strength of 3,500 pounds per square inch (psi) should be utilized for rigid pavement. Grade 60 reinforcing steel should be utilized in the transverse and longitudinal directions. The following pavement thicknesses and reinforcing are recommended:

Paving Use	Thickness (inches)	Reinforcing
Parking Areas for Automobiles and Light Trucks	5	No. 3 bars spaced on 22-inch intervals
Drive Lanes and Areas Subjected to Light to Medium Trucks	6	No. 3 bars spaced on 18-inch intervals
Areas Receiving Heavy Trucks and Dumpsters	7	No. 3 bars spaced on 16-inch intervals

Pavement Joints. Contraction joints should be spaced at about 24 times the pavement thickness up to a maximum of 15 feet in any direction. Saw cut control joints should be cut within 6 to 12 hours of concrete placement. Expansion joints should be spaced as necessary and should be placed where the pavement abuts any structure. Dowels should have a diameter equal to $\frac{1}{8}$ the slab thickness, be spaced on 12-inch intervals, and be embedded at least 9-inches. Where not specified herein, concrete pavement should comply with Texas Department of Transportation (TxDOT) Standard Specifications, Item 360, "Concrete Pavement", or local equivalent.

5.14.2 Private Pavement Subgrade

Potential Vertical Soil Movements. We have assumed that site treatment as recommended in Section 5.12 will not be performed within the pavement areas for this project. As a result, pavements will be subjected to the calculated PVR for this site. Based on the information gathered during this investigation, a pavement constructed on-grade will be subject to potential vertical movements of up to about 4-inches. Because heave is generally associated with a source of water, it can occur differentially. Edge lift, excessive cracking, corner breaks, undulation, and poor ride quality are just a few of the many examples of pavement issues that can occur when in-situ PVR values are high. We should be contacted to provide PVR mitigation strategies to help reduce potential movements if desired. Strategies available for reducing potential soil movements include soil stabilization with lime or cement, removal of the on-site expansive soils and replacement with select fill or moisture conditioned soil.

Subgrade Preparation. Low to medium plasticity clay is expected to be encountered or exposed at pavement subgrade. The pavement subgrade should be placed in loose lifts not exceeding 8-inches and should be uniformly compacted to a minimum of 95 percent maximum dry density (per ASTM D-698) and within ± 2 percent of the optimum moisture content. We recommend the subgrade be stabilized using the following:

Reagent	Application Rate (pounds per square yard)	Application Depth (inches)
Lime	27	6

Lime stabilization should be performed in accordance with TxDOT Standard Specifications, Item 260, "Lime Stabilized Subgrade", or local equivalent.

Sulfate Induced Heave. Based on the testing results presented in Section 4.3, the sulfate content of tested soil samples is in the range of 133 ppm to 2,547 ppm indicating that the levels of sulfate are low. *Lime treatment recommendations provided here assume the subgrade soil receiving lime treatment has sulfate concentrations less than 3,000 ppm.* As an alternate, flexible base can be used in lieu of lime stabilization and to the same depths recommended for lime stabilization. Flexible base should consist of crushed aggregate base meeting TxDOT Standard Specifications, Item 247, Grade 1-2, Type D, or local equivalent. Flexible base should be compacted to at least 95 percent maximum dry density (per ASTM D-698) and within ± 2 percent of the optimum moisture content.

5.15 Public Road

General. Recommendations for rigid pavement and preparation of the pavement subgrade are provided for the proposed public road in accordance with City of Fort Worth Pavement Design Manual (dated January 19, 2015) in the following sections. We assume the proposed public roadway is classified as "Collector" or "Residential-Urban". A traffic study indicating the number and type of vehicles on which to base the pavement design was not provided. Therefore, our recommendations are based upon City of Fort Worth Pavement Design Manual and our experience with similar projects assuming normal vehicular loading. The WinPAS computer program developed based on AASHTO 1993 design guidelines and distributed by the American Concrete Pavement Association (ACPA) was used for our analysis.

5.15.1 Rigid Pavement

Design Parameters. The following design parameters were used in our analysis for the proposed pavement design. The values are based on the 1993 AASHTO Pavement Design Manual, the 2015 City of Fort Worth Pavement Design Manual and our experience with similar projects.

Pavement Design Parameters - Residential Road	
Parameter	Description/ Design Input Value
Street Classification	Residential (High Volume)
Pavement Design Life	25
Annual ESALs (One Direction)	35,000
Percent Growth Rate	0.5
Total Design ESALs	971,500
Subgrade Soil	Lean Clay (CL) and Fat Clay (CH)
Subgrade Stabilization	Lime Stabilized
Subgrade Stabilization Thickness	Minimum 8-inches
Subgrade Soil California Bearing Ratio (CBR)	3
Subgrade Soil Resilient Modulus, M_R (psi)	4,118
Lime Stabilized Subgrade California Bearing Ratio (CBR)	15.0
Lime Stabilized Subgrade Resilient Modulus, M_R (psi)	12,392
Loss of Support	0.0
Depth to Rigid Foundation (Bedrock) (feet)	> 10
Composite Modulus of Subgrade Reaction (k)	221 pci
Initial Serviceability	4.5
Terminal Serviceability	2.25
Reliability	90%
Standard Deviation	0.39
Drainage Coefficient ¹	1.0
Load Transfer Coefficient	3.0
Minimum 28-day Concrete Compressive Strength (psi)	4,000
Concrete Modulus of Elasticity (psi)	4,000,000
Minimum 28-day Concrete Flexural Strength (psi)	620
Reinforcing Steel Grade	60
Note: 1. Drainage coefficient for subgrade assumes that good drainage quality prevails over the life of the pavement.	

Pavement Design Parameters - Collector Road	
Parameter	Description/ Design Input Value
Street Classification	Collector Road
Pavement Design Life	25
Annual ESALs (One Direction)	100,000
Percent Growth Rate	1.5
Total Design ESALs	3,045,900
Subgrade Soil	Lean Clay (CL) and Fat Clay (CH)
Subgrade Stabilization	Lime Stabilized
Subgrade Stabilization Thickness	Minimum 8-inches
Subgrade Soil California Bearing Ratio (CBR)	3
Subgrade Soil Resilient Modulus, M_R (psi)	4,118
Lime Stabilized Subgrade California Bearing Ratio (CBR)	15.0
Lime Stabilized Subgrade Resilient Modulus, M_R (psi)	12,392
Loss of Support	0.0
Depth to Rigid Foundation (Bedrock) (feet)	> 10
Composite Modulus of Subgrade Reaction (k)	221 pci
Initial Serviceability	4.5
Terminal Serviceability	2.25
Reliability	90%
Standard Deviation	0.39
Drainage Coefficient ¹	1.0
Load Transfer Coefficient	3.0
Minimum 28-day Concrete Compressive Strength (psi)	4,000
Concrete Modulus of Elasticity (psi)	4,000,000
Minimum 28-day Concrete Flexural Strength (psi)	620
Reinforcing Steel Grade	60
Note: 1. Drainage coefficient for subgrade assumes that good drainage quality prevails over the life of the pavement.	

Pavement Thickness and Reinforcement: The following pavement thicknesses and reinforcing are recommended:

Roadway Classification	Thickness (inches)	Reinforcing
Collector	8	No. 3 bars spaced on 18-inch intervals
Residential	6.5	No. 3 bars spaced on 18-inch intervals

Pavement Joints. Pavement joints should be designed and constructed per City of Fort Worth Pavement Design Manual.

5.15.2 Pavement Subgrade

Potential Vertical Soil Movements. We have assumed that site treatment as recommended in Section 5.12 "Slab-on-Grade" will not be performed within the pavement areas for this project. As a result, pavements will be subjected to the calculated PVR for this site. Based on the information gathered during this investigation, a pavement constructed on-grade will be subject to potential vertical movements of up to about 4-inches. Because heave is generally

associated with a source of water, it can occur differentially. Edge lift, excessive cracking, corner breaks, and poor ride quality are just a few of the many examples of pavement issues that can occur when in-situ PVR values are high. We should be contacted to provide PVR mitigation strategies to help reduce potential movements if desired. Strategies available for reducing potential soil movements include soil stabilization with lime or cement, removal of the on-site expansive soils and replacement with select fill or moisture conditioned soil.

Sulfate Induced Heave. Discussions and the recommendations addressing the sulfate induced heave are provided in Section 5.3.

Subgrade Preparation. Lean clay is generally expected to be encountered or exposed at pavement subgrade. The pavement subgrade should be protected and maintained in a moist condition until the pavement is placed. The pavement subgrade should be placed in loose lifts not exceeding 8-inches and should be uniformly compacted to a minimum of 95 percent maximum dry density (per ASTM D-698) and within ± 2 percent of the optimum moisture content. We recommend the subgrade be stabilized using the following. The recommendations below are for planning purposes only and must be verified with Proctor data and lime series tests on the raw subgrade material at the time of construction.

Reagent	Application Rate (pounds per square yard)	Application Depth (inches)
Lime	48 (8% Lime)	8

Lime stabilization should be performed in accordance with TxDOT Standard Specifications, Item 260, "Lime Stabilized Subgrade", or local equivalent.

6.0 GENERAL COMMENTS

Data Assumptions. By necessity, geotechnical engineering design recommendations are based on a limited amount of information about subsurface conditions. In the analysis, the geotechnical engineer must assume subsurface conditions are similar to those encountered in the borings. The analyses, conclusions and recommendations contained in this report are based on site conditions as they existed at the time of the field study and on the assumption that the exploratory borings are representative of the subsurface conditions throughout the site; that is, the subsurface conditions everywhere are not significantly different from those disclosed by the borings at the time they were completed. As a result, estimated movements provided in this study are not guarantees of performance. Actual movements may be more or less than estimates provided in this study.

Subsurface Anomalies. Anomalies in subsurface conditions are often revealed during construction. If during construction, different subsurface conditions from those encountered in our borings are observed, or appear to be present in excavations, we must be advised

promptly so that we can review these conditions and reconsider our recommendations where necessary.

Change of Conditions. If there is a substantial lapse of time between submission of this report and the start of the work at the site, if conditions have changed due either to natural causes or to construction operations at or adjacent to the site, or if structure locations, structural loads or finish grades are changed, we should be promptly informed and retained to review our report to determine the applicability of the conclusions and recommendations, considering the changed conditions and/or time lapse.

Required Review. Detailed design plans were not available at the time of preparation of this report. Recommendations in our report are contingent upon RINER reviewing and verifying that the site grading, foundation plans, and loadings are in general conformance with our recommendations provided in this report.

Construction Materials Testing and Inspection. RINER should be retained to observe earthwork and foundation installation and perform materials evaluation and testing during the construction phase of the project. This enables RINER's geotechnical engineer to stay abreast of the project and to be readily available to evaluate unanticipated conditions, to conduct additional tests if required and, when necessary, to recommend alternative solutions to unanticipated conditions. It is proposed that construction phase observation and materials testing commence by the project geotechnical engineer (RINER) at the outset of the project. Experience has shown that the most suitable method for procuring these services is for the owner to contact directly with the project geotechnical engineer. This results in a clear, direct line of communication between the owner and the owner's design engineers and the geotechnical engineer.

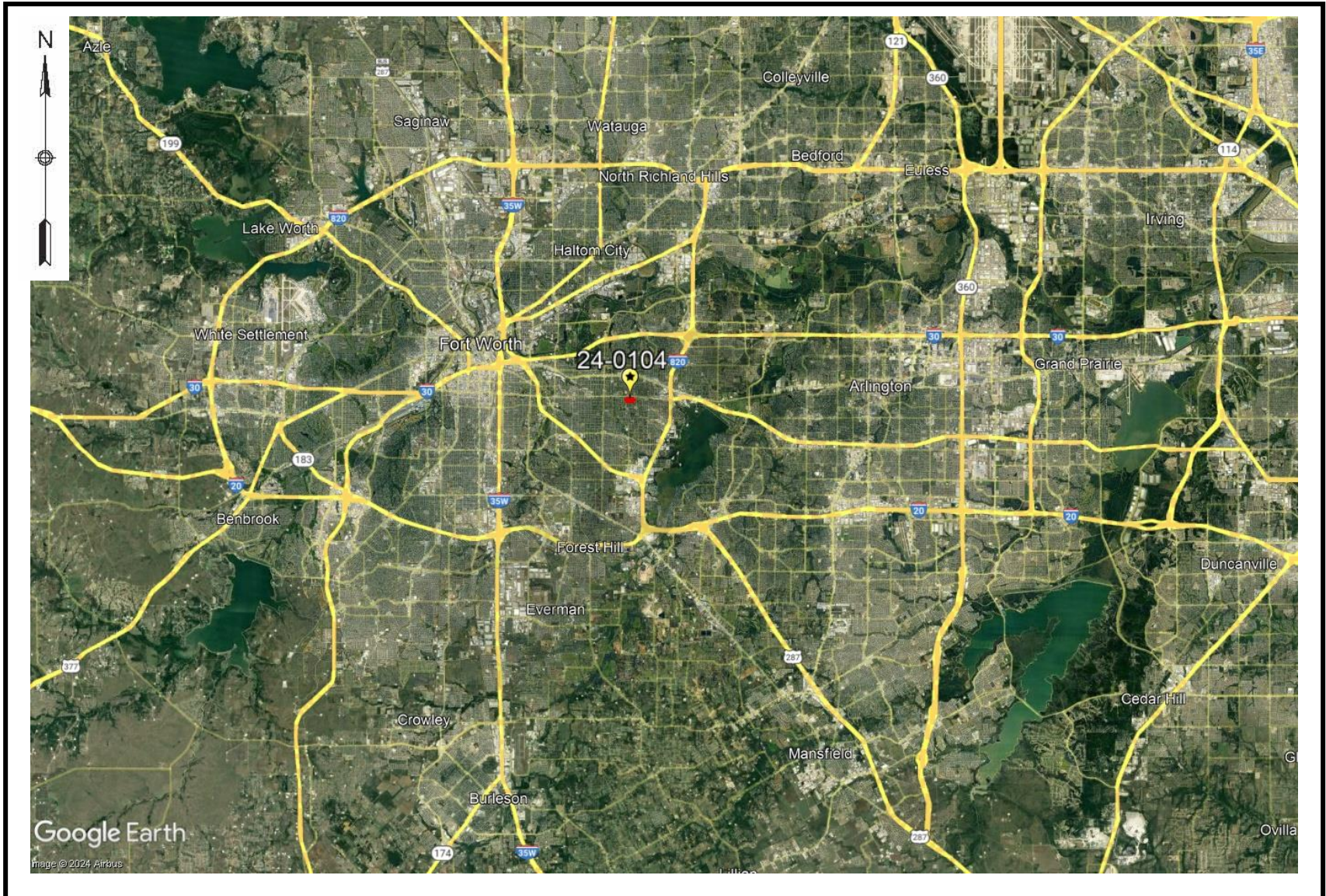
Report Recommendations are Preliminary. Until the recommended construction phase services are performed by RINER, the recommendations contained in this report on such items as final foundation bearing elevations, final depth of undercut of expansive soils for non-expansive earth fill pads and other such subsurface-related recommendations should be considered as preliminary.

Liability Limitation. RINER cannot assume responsibility or liability for recommendations provided in this report if construction inspection and/or testing recommended herein is performed by another party.

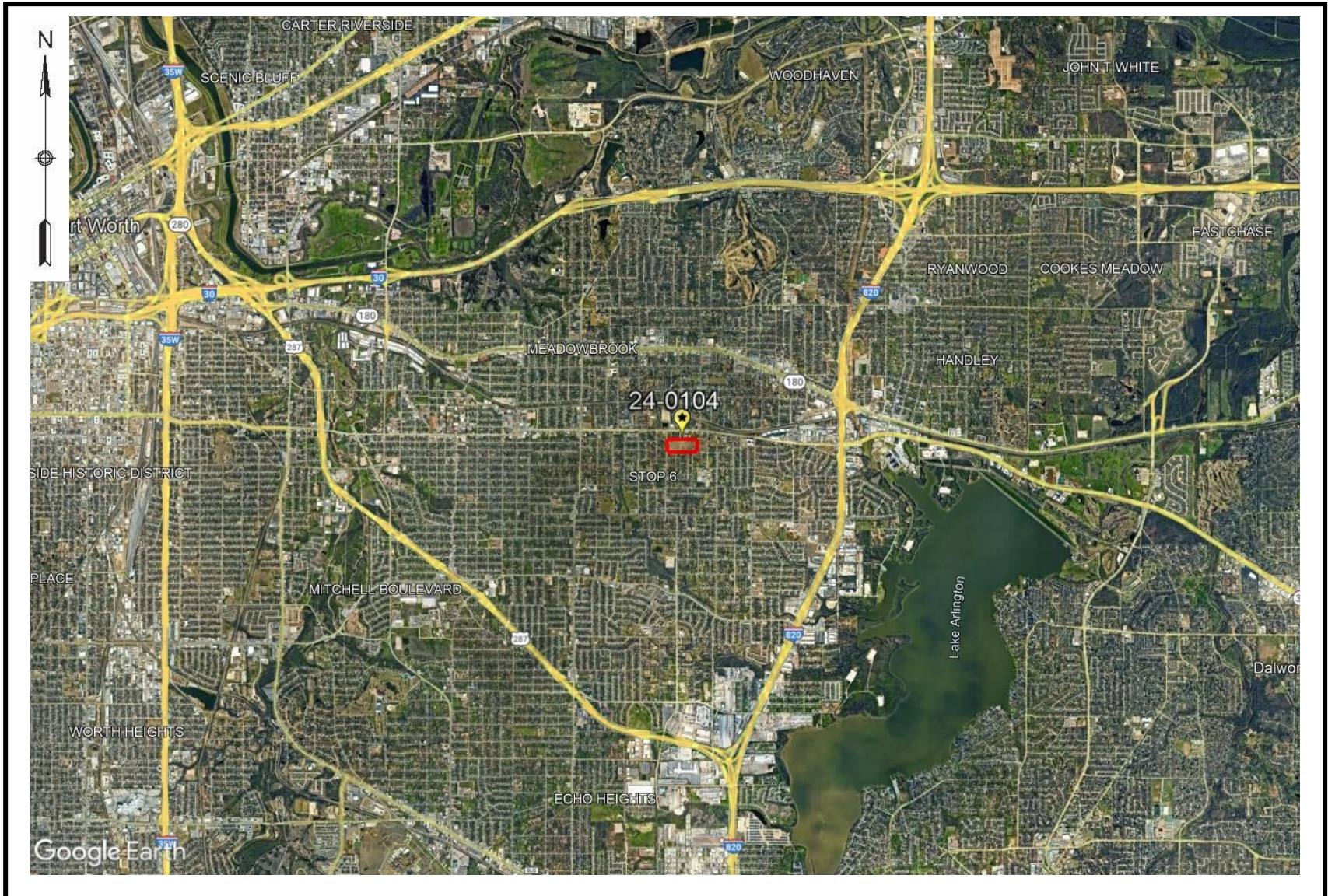
Warranty. This report has been prepared for the exclusive use of the Client and their designated agents for specific application to design of this project. We have used that degree of care and skill ordinarily exercised under similar conditions by reputable members of our profession practicing in the same or similar locality. No other warranty, expressed or implied, is made or intended.

Appendix A - Project Location Diagrams

PROJECT LOCATION DIAGRAM - GENERAL



PROJECT LOCATION DIAGRAM - LOCAL



Appendix B - Boring Location Diagram

[illegible]

BORING LOCATION DIAGRAM WITHOUT OVERLAY



Appendix C - Boring Logs and Laboratory Results



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BORING NUMBER B-01

PAGE 1 OF 1

CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	1/31/24	COMPLETED	1/31/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
		SANDY LEAN CLAY (CL) FILL / LEAN CLAY WITH SAND (CL) FILL - Soft, light brown, brown and reddish brown, with plastic pieces, roots and gravel.	ST			1.00					22				
			ST			1.00					16	24	13	11	54
5			ST			1.00					15				
		SANDY LEAN CLAY (CL) / LEAN CLAY WITH SAND (CL) - Stiff to very stiff, light brown and reddish brown.	ST			2.00					14	38	12	26	
			ST			4.50									
10			ST			4.50									
		CEMENTED SAND / SANDSTONE - Reddish brown.	SS		50/4"						15				
15			SS		50/2"						19				
20															

Bottom of hole at 20.0 feet.



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BORING NUMBER B-02

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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	1/31/24	COMPLETED	1/31/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
		SANDY LEAN CLAY (CL) FILL - Very stiff, light brown and brown.	ST			4.00					19				61
		SANDY LEAN CLAY (CL) / LEAN CLAY WITH SAND (CL) - Soft to stiff, brown.	ST			2.50					16				
5			ST			1.00					15	31	13	18	
			ST												
		LEAN CLAY (CL) - Hard, brown, shaley, with intermediate sandstone seams.	SS		40-50 (90)						13	47	14	33	
10															
			SS		11-24- 50/4"						25				
15															
			SS		50/3"						16				
20															

Bottom of hole at 20.0 feet.



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CLIENT McCormack Baron Salazar Development Inc.

PROJECT NUMBER 24-0104

DATE STARTED 1/31/24 COMPLETED 1/31/24

CONTRACTOR Trinity Drilling

METHOD Auger 0 - 20 feet

LOGGED BY G.P. CHECKED BY R.K.

NOTES _____

PROJECT NAME Hughes House II

PROJECT LOCATION Fort Worth, Texas

GROUND ELEVATION _____ NORTHING _____

GROUND WATER LEVELS: EASTING _____

INITIALLY ENCOUNTERED Not Encountered

AFTER 15 MIN. ---

AFTER ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
		SANDY LEAN CLAY (CL) FILL - Firm, brown, with gravel.	ST			1.50					13	27	13	14	
		SANDY LEAN CLAY (CL) - Stiff, brown.	ST			2.50					19	48	14	34	63
5		FAT CLAY (CH) - Stiff to hard, brown, with iron nodules.	ST			3.00					14				
		With gypsum crystal seams at 8- to 20-feet.	ST			4.50					16				
			ST			4.50									
10															
		With iron seams at 13- to 20-feet.	SS		25-29-32 (61)						17				
15															
			ST			4.50					16				
20															

Bottom of hole at 20.0 feet.



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BORING NUMBER B-04

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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	1/31/24	COMPLETED	1/31/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
		FAT CLAY (CH) FILL - Stiff, brown, with sand seams and gravel.	ST			2.00					21				
			ST			2.50					22	55	16	39	
5		SANDY LEAN CLAY (CL) / LEAN CLAY WITH SAND (CL) - Very stiff, light brown and brown.	ST			4.50					12				
		SANDY FAT CLAY (CH) - Very stiff to hard, light brown and brown, shaley, with silt seams.	SS								15				61
10															
			ST			4.50					17				
15															
			SS		30-50/3"										
20															

Bottom of hole at 20.0 feet.



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BORING NUMBER B-05

PAGE 1 OF 1

CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	1/31/24	COMPLETED	1/31/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
		SANDY LEAN CLAY (CL) FILL / LEAN CLAY WITH SAND (CL) FILL - Soft to stiff, brown, with gravel.	ST			2.00					18				
			ST			1.00					14				
5		FAT CLAY (CH) - Soft to hard, brown, with gravel.	ST			1.00					18				
			ST			4.00					18				
10		Shaley with iron seams at 8- to 18-feet.	ST			4.50					15				
			SS			27-30-35 (65)									
15															
		CEMENTED SAND / SANDSTONE - Light brown.	SS			50/3"					14				
20															

Bottom of hole at 20.0 feet.



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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/1/24	COMPLETED	2/1/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
		SANDY LEAN CLAY (CL) FILL / LEAN CLAY WITH SAND (CL) FILL - Stiff to very stiff, light brown and brown.	ST			3.00					16				
			ST			3.50					17	41	14	27	
5		LEAN CLAY WITH SAND (CL) - Very stiff, brown.	ST			4.50					15				73
			ST			4.50					17				
10		FAT CLAY (CH) - Very stiff to hard, light brown and light gray, with sand seams and silt seams.	SS		15-15-17 (32)						10				
15			SS		27-30-35 (65)						14				
20			ST												

Bottom of hole at 20.0 feet.



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CLIENT McCormack Baron Salazar Development Inc.

PROJECT NUMBER 24-0104

DATE STARTED 2/1/24 COMPLETED 2/1/24

CONTRACTOR Trinity Drilling

METHOD Auger 0 - 20 feet

LOGGED BY G.P. CHECKED BY R.K.

NOTES _____

PROJECT NAME Hughes House II

PROJECT LOCATION Fort Worth, Texas

GROUND ELEVATION _____ NORTHING _____

GROUND WATER LEVELS: EASTING _____

INITIALLY ENCOUNTERED 18.0 ft

AFTER 15 MIN. 18.0 ft

AFTER ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
		SANDY LEAN CLAY (CL) FILL / LEAN CLAY WITH SAND (CL) FILL - Stiff to very stiff, light brown and brown.	ST			2.50					17	45	13	32	
			ST			3.50					21				
5		SANDY LEAN CLAY (CL) / LEAN CLAY WITH SAND (CL) - Very stiff, reddish brown.	ST			4.50					14				
		CEMENTED SAND / SANDSTONE - Reddish brown, with clay seams.	SS		50/3"						13				
10			SS		41-50/4"						19				
15			SS		50/5"						21				
20															

Bottom of hole at 20.0 feet.



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BORING NUMBER B-08

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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/1/24	COMPLETED	2/1/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		LEAN CLAY (CL) FILL - Stiff, brown, with gravel.	ST			2.00					18				
		SANDY LEAN CLAY (CL) - Firm, brown.	ST			1.50					21	43	15	28	
5		FAT CLAY (CH) - Stiff to hard, brown and gray, shaley, with iron nodules.	ST			3.00					19				
			ST			4.50									
		With intermediate sandstone seams at 8- to 18-feet.	SS		27-50/2"						13				
10			SS		13-50/5"						18				
15															
		CEMENTED SAND / SANDSTONE - Reddish brown, with clay seams.	SS		12-50/1"										
20															

Bottom of hole at 20.0 feet.



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BORING NUMBER B-09

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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/1/24	COMPLETED	2/1/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		LEAN CLAY (CL) FILL - Stiff, light brown and brown, with gravel.	ST			2.50					20	46	16	30	
			ST			2.50					20				
5		SANDY LEAN CLAY (CL) / LEAN CLAY WITH SAND (CL) - Very stiff, brown.	ST			4.50					17				
		FAT CLAY (CH) - Very stiff to hard, light brown and brown, shaley, with sand seams and silt seams.	SS		32-50/2"						12				
10															
			SS		50/3"						19				
15															
		POORLY GRADED SAND - Medium dense, light brown.	SS		2-12-16 (28)						3				
20															

Bottom of hole at 20.0 feet.



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BORING NUMBER B-10

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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/1/24	COMPLETED	2/1/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED 7.0 ft AFTER 15 MIN. 7.0 ft AFTER ---		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		SANDY LEAN CLAY (CL) FILL - Soft, light brown and brown.	ST			1.00					22	28	14	14	66
			ST			1.00					23				
5		SANDY LEAN CLAY (CL) / LEAN CLAY WITH SAND (CL) - Soft to hard, light brown, brown and reddish brown.	ST			2.00					17				
			ST			1.00					19				
			SS		15-22-50/2"										
10															
		FAT CLAY (CH) - Hard, light brown and light gray.	SS		19-50/2"						19				
15															
		CEMENTED SAND / SANDSTONE - Reddish brown.	SS		50/4"						23				
20															

Bottom of hole at 20.0 feet.



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BORING NUMBER B-11

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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/1/24	COMPLETED	2/1/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
		SANDY LEAN CLAY (CL) FILL / LEAN CLAY WITH SAND (CL) FILL - Stiff, brown and dark brown.	ST			2.50					16				
			ST			3.00					16	40	16	24	
5		SANDY LEAN CLAY (CL) - Very stiff, light brown and reddish brown.	ST			4.50									
			ST			4.50					16				
		CLAYEY GRAVEL (GC) - Very dense, light brown, brown and reddish brown, with sand.	SS		15-32-50/4"						16				
10															
		CEMENTED SAND / SANDSTONE - Light brown, with clay seams.	SS		20-50/1"						15				
15															
			SS		12-50/3"						19				
20															

Bottom of hole at 20.0 feet.



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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/2/24	COMPLETED	2/2/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED 17.0 ft AFTER 15 MIN. 17.0 ft AFTER ---		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
		SANDY LEAN CLAY (CL) FILL / LEAN CLAY WITH SAND (CL) FILL - Stiff, brown, with gravel.	ST			2.50					16				
			ST			2.50					16				
5		SANDY LEAN CLAY (CL) / LEAN CLAY WITH SAND (CL) - Very stiff, light brown, brown and reddish brown.	ST			4.50					15				
			ST												
10		FAT CLAY (CH) - Hard, light brown and reddish brown, with sand seams.	SS		20-27-40 (67)						9				
15		CEMENTED SAND / SANDSTONE - Light brown and reddish brown, with clay seams.	SS		21-50/2"						15				
			SS		13-18-21 (39)						31				
20															

Bottom of hole at 20.0 feet.



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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/6/24	COMPLETED	2/6/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED 17.0 ft AFTER 15 MIN. 17.0 ft AFTER ---		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
		SANDY LEAN CLAY (CL) FILL - Stiff, brown, with gravel.	ST			2.00					12	19	13	6	
			ST			2.50					16	31	12	19	51
5		SANDY LEAN CLAY (CL) / LEAN CLAY WITH SAND (CL) - Very stiff, brown and reddish brown.	ST			4.50					18				
			ST												
		CEMENTED SAND / SANDSTONE - Light brown and brown, with clay seams.	SS		12-18-24 (42)						9				
10															
			SS		30-50/1"						19				
15															
			SS		50/1"						18				
20															

Bottom of hole at 20.0 feet.



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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/7/24	COMPLETED	2/7/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED 12.0 ft AFTER 15 MIN. 12.0 ft AFTER ---		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
		CLAYEY SAND (SC) FILL - Very stiff, brown, with gravel.	ST			4.00					15	27	16	11	50
		LEAN CLAY (CL) - Very stiff, brown, with iron nodules.	ST			3.50					16				
5			ST			3.50					15	48	18	30	
		CLAYEY SAND (SC) - Dense to very dense, brown and gray.	ST												
			SS		17-50/1"						14				
10															
			SS		18-20-22 (42)						24				
15															
		CEMENTED SAND / SANDSTONE - Brown.	SS		50/1"						23				
20															

Bottom of hole at 20.0 feet.



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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/8/24	COMPLETED	2/8/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 15 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0.0															
		CLAYEY SAND (SC) FILL - Stiff, reddish brown, with gravel.	ST			2.50						39	13	26	46
2.5			ST			2.50									
		CLAYEY SAND (SC) - Very stiff, reddish brown.	ST			4.50									
5.0			ST												
7.5			SS		50/1"										
10.0			SS		50/0"										
12.5															
15.0															

Bottom of hole at 15.0 feet.



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CLIENT McCormack Baron Salazar Development Inc.

PROJECT NUMBER 24-0104

DATE STARTED 2/8/24 COMPLETED 2/8/24

CONTRACTOR Trinity Drilling

METHOD Auger 0 - 20 feet

LOGGED BY G.P. CHECKED BY R.K.

NOTES

PROJECT NAME Hughes House II

PROJECT LOCATION Fort Worth, Texas

GROUND ELEVATION _____ NORTHING _____

GROUND WATER LEVELS: EASTING _____

INITIALLY ENCOUNTERED Not Encountered

AFTER 15 MIN. ---

AFTER ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
		SANDY LEAN CLAY (CL) FILL / LEAN CLAY WITH SAND (CL) FILL - Stiff, brown.	ST			2.50						47	16	31	
		SANDY FAT CLAY (CH) / FAT CLAY WITH SAND (CH) - Very stiff to hard, light brown and brown.	ST			4.50						61	14	47	
5			ST			4.50									
			ST												
			SS		20-50/3"										
10															
		CEMENTED SAND / SANDSTONE - light brown, brown and reddish brown.	SS		50/1"										
15															
			SS		50/1"										
20															

Bottom of hole at 20.0 feet.



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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/1/24	COMPLETED	2/1/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
		SANDY LEAN CLAY (CL) FILL / LEAN CLAY WITH SAND (CL) FILL - Soft, brown, with gravel.	ST			0.50									
		SANDY LEAN CLAY (CL) - Very stiff, brown, with iron nodules.	ST			4.50					13				
5			ST			4.50					18	45	14	31	66
		FAT CLAY (CH) - Very stiff to hard, brown, shaley.	ST			4.50					17	60	15	45	
			ST			4.00					12				
10			ST			4.50									
		With intermediate sandstone seams at 13- to 20-feet.	SS			25-50/4"					17				
15			SS			19-50/4"					15				
20															

Bottom of hole at 20.0 feet.



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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/1/24	COMPLETED	2/1/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		FAT CLAY (CH) - Stiff to hard, brown and gray, with sand pockets.	ST			2.50					19				
			ST			3.00					21				
		With calcareous and iron nodules at 4- to 8-feet.	ST			2.00					21				
5			ST			4.00					15				
		Shaley with sand seams and iron seams at 8- to 20-feet.	ST			4.50					16				
10			ST			4.50									
			ST			4.50					14				
15			ST			4.50									
			SS		25-50/1"										
20		Bottom of hole at 20.0 feet.													

DEWLOG REPORT 24-0104 NEW.GPJ 3/20/24



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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/1/24	COMPLETED	2/1/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		CLAYEY SAND (SC) FILL - Very stiff, brown, with iron nodules.	ST			4.50					25				
		FAT CLAY (CH) FILL - Very stiff, brown, with gravel.	ST			4.50					17	55	18	37	
5		FAT CLAY (CH) - Very stiff to hard, brown and gray, shaley, with sand seams.	ST			4.50					19				
			ST												
			SS		25-33-40 (73)						19				
10															
		With iron seams at 13- to 18-feet.	SS		35-50/3"						19				
15															
		CLAYEY SAND (SC) - Medium dense, brown.	SS		7-12-15 (27)										
20															

Bottom of hole at 20.0 feet.



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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/9/24	COMPLETED	2/9/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		SANDY FAT CLAY (CH) FILL / FAT CLAY WITH SAND (CH) FILL - Stiff, reddish brown.	ST			2.50					13				
		FAT CLAY (CH) - Very stiff, brown, with iron nodules and calcareous nodules.	ST			4.50					13	60	16	44	
5		LEAN CLAY (CL) / SANDY LEAN CLAY (CL) - Very stiff to hard, shaley, with iron seams and sand seams.	ST			4.50					22	33	15	18	
			ST												
			SS		40-50/2"						13				66
10			SS		50/1"						13				
15			SS		50/1"						14				
20		CEMENTED SAND / SANDSTONE - Light brown.	SS		50/1"										

Bottom of hole at 20.0 feet.



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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/9/24	COMPLETED	2/9/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		FAT CLAY (CH) - Stiff to very stiff, light brown and brown.	ST			3.00					15				
			ST			2.50					19	74	37	37	
5			ST			4.50					14	59	14	45	
			ST												
		CEMENTED SAND / SANDSTONE - Light brown and reddish brown, with clay seams.	SS		50/5"						13				59
10			SS		50/1"						10				
15			SS		50/1"						5				
20															

Bottom of hole at 20.0 feet.



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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/9/24	COMPLETED	2/9/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 20 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED 17.0 ft AFTER 15 MIN. 17.0 ft AFTER ---		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
		LEAN CLAY (CL) FILL / CLAYEY SAND (SC) FILL - Stiff to very stiff, gray and reddish brown, with gravel and plastic.	ST			4.50					11	36	11	25	
			ST			2.00					17				
5		CLAYEY SAND (SC) -Very dense, brown and reddish brown.	ST								17	34	13	21	26
			ST												
			SS		30-50/2"						4				
10															
		FAT CLAY (CH) - Hard, brown and gray, shaley.	SS		42-50/3"						23				
15															
			SS		50/1"						33				
20															

Bottom of hole at 20.0 feet.



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CLIENT McCormack Baron Salazar Development Inc.

PROJECT NUMBER 24-0104

DATE STARTED 1/31/24 COMPLETED 1/31/24

CONTRACTOR Trinity Drilling

METHOD Auger 0 - 20 feet

LOGGED BY G.P. CHECKED BY R.K.

NOTES _____

PROJECT NAME Hughes House II

PROJECT LOCATION Fort Worth, Texas

GROUND ELEVATION _____ NORTHING _____

GROUND WATER LEVELS: EASTING _____

INITIALLY ENCOUNTERED Not Encountered

AFTER 15 MIN. ---

AFTER ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
		SANDY LEAN CLAY (CL) FILL / LEAN CLAY WITH SAND (CL) FILL - Very stiff, reddish brown, with gravel.	ST			4.50					14	29	13	16	
		SANDY LEAN CLAY (CL) / LEAN CLAY WITH SAND (CL) - Very stiff, reddish brown, with iron nodules.	ST			4.50					10				
5			ST			4.50					12				62
		CEMENTED SAND / SANDSTONE - Reddish brown.	ST												
			SS		50/3"						10				
10															
			SS		50/3"						12				
15															
		FAT CLAY (CH) - Hard, brown, with intermediate sandstone seams.	SS		27-50/2"						15				
20															

Bottom of hole at 20.0 feet.



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CLIENT McCormack Baron Salazar Development Inc.

PROJECT NUMBER 24-0104

DATE STARTED 1/31/24 COMPLETED 1/31/24

CONTRACTOR Trinity Drilling

METHOD Auger 0 - 20 feet

LOGGED BY G.P. CHECKED BY R.K.

NOTES _____

PROJECT NAME Hughes House II

PROJECT LOCATION Fort Worth, Texas

GROUND ELEVATION _____ NORTHING _____

GROUND WATER LEVELS: EASTING _____

INITIALLY ENCOUNTERED 15.0 ft

AFTER 15 MIN. 15.0 ft

AFTER ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
		SANDY LEAN CLAY (CL) FILL / LEAN CLAY WITH SAND (CL) FILL - Stiff, brown.	ST			2.50					12				
			ST			2.00					18	28	14	14	
5		CLAYEY SAND (SC) - Very dense, light brown, brown and reddish brown.	ST								9				
			ST								9				
10			ST								12				
		With clay seams at 13- to 18-feet.	SS		14-50/1"						21				
15			SS		22-50/3"						18				
20		FAT CLAY (CH) - Hard, brown and light gray, shaley.	SS												

Bottom of hole at 20.0 feet.

DEWLOGREPORT 24-0104 NEW.GPJ 3/20/24



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CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	1/31/24	COMPLETED	1/31/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 5 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		SANDY LEAN CLAY (CL) FILL / LEAN CLAY WITH SAND (CL) FILL - Stiff to very stiff, brown and reddish brown.													
1			ST			4.00					10				
2															
3			ST			2.00					9	29	12	17	
4															
5		CLAYEY SAND (SC) - Very stiff, reddish brown.	ST			4.50					9				

Bottom of hole at 5.0 feet.



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CLIENT McCormack Baron Salazar Development Inc.

PROJECT NUMBER 24-0104

DATE STARTED 1/31/24 COMPLETED 1/31/24

CONTRACTOR Trinity Drilling

METHOD Auger 0 - 5 feet

LOGGED BY G.P. CHECKED BY R.K.

NOTES

PROJECT NAME Hughes House II

PROJECT LOCATION Fort Worth, Texas

GROUND ELEVATION _____ NORTHING _____

GROUND WATER LEVELS: EASTING _____

INITIALLY ENCOUNTERED Not Encountered

AFTER 15 MIN. ---

AFTER ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		SANDY FAT CLAY (CH) FILL / FAT CLAY WITH SAND (CH) FILL - Stiff to very stiff, light brown and brown.													
1			ST			2.50					17	52	14	38	
2															
3			ST			4.50					18				
4															
5			ST			4.50					6				

Bottom of hole at 5.0 feet.



Riner Engineering, Inc. a UES Company
1467 Prudential Drive, Dallas, Texas 75235
Telephone: 214-239-2627

CLIENT McCormack Baron Salazar Development Inc.

PROJECT NUMBER 24-0104

DATE STARTED 2/8/24 COMPLETED 2/8/24

CONTRACTOR Trinity Drilling

METHOD Auger 0 - 5 feet

LOGGED BY G.P. CHECKED BY R.K.

NOTES _____

PROJECT NAME Hughes House II

PROJECT LOCATION Fort Worth, Texas

GROUND ELEVATION _____ NORTHING _____

GROUND WATER LEVELS: EASTING _____

INITIALLY ENCOUNTERED Not Encountered

AFTER 15 MIN. ---

AFTER ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
1		SANDLY LEAN CLAY (CL) FILL - Very stiff, brown.	ST			4.50					13				
2		CLAYEY SAND (SC) - Brown.													
3			ST								15	37	13	24	35
4															
5			ST								20				

Bottom of hole at 5.0 feet.



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BORING NUMBER B-28

PAGE 1 OF 1

CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/8/24	COMPLETED	2/8/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 5 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
1		SANDY LEAN CLAY (CL) FILL / LEAN CLAY WITH SAND (CL) FILL - Very stiff, light brown, brown, and reddish brown.	ST			3.50					11	27	16	11	51
2															
3			ST			4.00					16				
4															
5		SANDY LEAN CLAY (CL) - Very stiff, reddish brown.	ST			4.50					21				

Bottom of hole at 5.0 feet.



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CLIENT McCormack Baron Salazar Development Inc.

PROJECT NUMBER 24-0104

DATE STARTED 2/1/24 COMPLETED 2/1/24

CONTRACTOR Trinity Drilling

METHOD Auger 0 - 5 feet

LOGGED BY G.P. CHECKED BY R.K.

NOTES

PROJECT NAME Hughes House II

PROJECT LOCATION Fort Worth, Texas

GROUND ELEVATION _____ NORTHING _____

GROUND WATER LEVELS: EASTING _____

INITIALLY ENCOUNTERED Not Encountered

AFTER 15 MIN. ---

AFTER ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		FAT CLAY (CH) - Very stiff, light brown and brown.													
1			ST			3.50					19				
2															
3			ST			4.50					15				
4															
5			ST			4.50					15	53	12	41	

Bottom of hole at 5.0 feet.



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CLIENT McCormack Baron Salazar Development Inc.

PROJECT NUMBER 24-0104

DATE STARTED 1/31/24 COMPLETED 1/31/24

CONTRACTOR Trinity Drilling

METHOD Auger 0 - 5 feet

LOGGED BY G.P. CHECKED BY R.K.

NOTES _____

PROJECT NAME Hughes House II

PROJECT LOCATION Fort Worth, Texas

GROUND ELEVATION _____ NORTHING _____

GROUND WATER LEVELS: EASTING _____

INITIALLY ENCOUNTERED Not Encountered

AFTER 15 MIN. ---

AFTER ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
1		SANDY LEAN CLAY (CL) FILL - Stiff, light brown, brown and reddish brown.	ST			2.00					15				
2		SANDY LEAN CLAY (CL) / LEAN CLAY WITH SAND (CL) - Stiff to very stiff, light brown, brown and reddish brown.													
3			ST			4.50					16	36	15	21	
4															
5			ST			2.50					17				

Bottom of hole at 5.0 feet.



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Telephone: 214-239-2627

BORING NUMBER B-31

PAGE 1 OF 1

CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/1/24	COMPLETED	2/1/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 15 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0.0		LEAN CLAY (CL) - Very stiff, brown, with roots.	ST			3.50					23				
2.5		SANDY FAT CLAY (CH) / FAT CLAY WITH SAND (CH) - Very stiff to hard, light brown, brown and reddish brown.	ST			4.50					14				
5.0			ST			4.50					18				
7.5			ST												
		Shaley at 8- to 15-feet.	SS		40-50/3"						18				
10.0															
12.5			SS		16-50/3"						14				
15.0															

Bottom of hole at 15.0 feet.



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Telephone: 214-239-2627

BORING NUMBER B-32

PAGE 1 OF 1

CLIENT	McCormack Baron Salazar Development Inc.	PROJECT NAME	Hughes House II
PROJECT NUMBER	24-0104	PROJECT LOCATION	Fort Worth, Texas
DATE STARTED	2/1/24	COMPLETED	2/1/24
CONTRACTOR	Trinity Drilling	GROUND ELEVATION	NORTHING
METHOD	Auger 0 - 15 feet	GROUND WATER LEVELS:	EASTING
LOGGED BY	G.P.	CHECKED BY	R.K.
NOTES	INITIALLY ENCOUNTERED Not Encountered		
		AFTER 15 MIN. ---	
		AFTER ---	

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0.0															
		SANDY LEAN CLAY (CL) FILL / LEAN CLAY WITH SAND (CL) FILL - Very stiff, light brown and brown.	ST			4.00					23				
2.5			ST			3.00					15	30	14	16	
5.0			ST			3.50					15				67
7.5		SANDY FAT CLAY (CH) / FAT CLAY WITH SAND (CH) - Stiff to hard, light brown, brown and light gray.	ST												
		Shaley at 8- to 15-feet.	SS		9-12-15 (27)						11				
10.0			SS												
12.5			SS		19-50/1"						18				
15.0															

Bottom of hole at 15.0 feet.

ABSORPTION SWELL TEST (ASTM D4546) RESULTS

Boring No.	B-01	B-02	B-03	B-04	B-06	B-07
Average Sample Depth (ft)	7	3	1	3	3	3
Sample Height (in)	0.8	0.8	0.8	0.8	0.8	0.8
Sample Diameter (in)	2.5	2.5	2.5	2.5	2.5	2.5
Initial Sample Volume (cu in)	3.93	3.93	3.93	3.93	3.93	3.93
Initial Sample Weight (gr)	133	-109	129	128	129	129
Initial Moisture (%)	17.8	19.1	13.0	22.5	19.2	22.0
Final Moisture (%)	18.8	23.0	18.8	24.2	22.4	24.1
Initial Wet Unit Weight (pcf)	129	-106	125	124	125	125
Initial Dry Unit Weight (pcf)	109	-89	110	101	105	102
Applied Over Burden (psi)	6.1	2.6	0.9	2.6	2.6	2.6
Initial Dial Reading (in)	0.0662	0.0385	0.0602	0.0665	0.0085	0.0545
Final Dial Reading (in)	0.0648	0.0319	0.0586	0.0616	0.0077	0.0539
Swell (%)	-0.18	-0.83	-0.20	-0.61	-0.10	-0.07

ABSORPTION SWELL TEST (ASTM D4546) RESULTS

Boring No.	B-08	B-09	B-10	B-11	B-12	B-13
Average Sample Depth (ft)	3	3	5	3	1	3
Sample Height (in)	0.8	0.8	0.8	0.8	0.8	0.8
Sample Diameter (in)	2.5	2.5	2.5	2.5	2.5	2.5
Initial Sample Volume (cu in)	3.93	3.93	3.93	3.93	3.93	3.93
Initial Sample Weight (gr)	128	134	138	138	133	137
Initial Moisture (%)	19.5	18.6	16.4	18.5	13.7	15.7
Final Moisture (%)	23.0	21.8	17.5	19.2	17.6	16.6
Initial Wet Unit Weight (pcf)	124	130	134	133	129	133
Initial Dry Unit Weight (pcf)	103	110	115	113	114	115
Applied Over Burden (psi)	2.6	2.6	4.3	2.6	0.9	2.6
Initial Dial Reading (in)	0.0530	0.0675	0.0546	0.0728	0.1310	0.0352
Final Dial Reading (in)	0.0506	0.0652	0.0545	0.0731	0.1326	0.0345
Swell (%)	-0.30	-0.29	-0.01	0.04	0.20	-0.09

ABSORPTION SWELL TEST (ASTM D4546) RESULTS

Boring No.	B-14	B-14	B-15	B-16	B-17	B-18
Average Sample Depth (ft)	1	3	3	3	7	3
Sample Height (in)	0.8	0.8	0.8	0.8	0.8	0.8
Sample Diameter (in)	2.5	2.5	2.5	2.5	2.5	2.5
Initial Sample Volume (cu in)	3.93	3.93	3.93	3.93	3.93	3.93
Initial Sample Weight (gr)	128	135	121	140	135	135
Initial Moisture (%)	12.8	18.6	12.4	13.3	14.5	19.5
Final Moisture (%)	18.2	20.6	20.5	19.3	19.4	22.1
Initial Wet Unit Weight (pcf)	124	131	117	135	131	131
Initial Dry Unit Weight (pcf)	110	110	104	119	114	109
Applied Over Burden (psi)	0.9	2.6	2.6	2.6	6.1	2.6
Initial Dial Reading (in)	0.0202	0.0715	0.1133	0.0560	0.0345	0.0220
Final Dial Reading (in)	0.0266	0.0764	0.1080	0.0950	0.0494	0.0320
Swell (%)	0.80	0.61	-0.66	4.88	1.86	1.25

ABSORPTION SWELL TEST (ASTM D4546) RESULTS

Boring No.	B-18	B-19	B-20	B-20	B-21	B-21
Average Sample Depth (ft)	7	3	3	5	1	3
Sample Height (in)	0.8	0.8	0.8	0.8	0.8	0.8
Sample Diameter (in)	2.5	2.5	2.5	2.5	2.5	2.5
Initial Sample Volume (cu in)	3.93	3.93	3.93	3.93	3.93	3.93
Initial Sample Weight (gr)	139	134	133	135	138	137
Initial Moisture (%)	15.1	16.2	18.8	18.0	15.5	24.0
Final Moisture (%)	19.5	19.7	21.3	17.0	18.7	25.4
Initial Wet Unit Weight (pcf)	134	130	129	131	134	133
Initial Dry Unit Weight (pcf)	117	112	109	111	116	107
Applied Over Burden (psi)	6.1	2.6	2.6	4.3	0.9	2.6
Initial Dial Reading (in)	0.0856	0.0563	0.0340	0.0780	0.0340	0.0254
Final Dial Reading (in)	0.0961	0.0833	0.0478	0.0781	0.0341	0.0349
Swell (%)	1.31	3.38	1.73	0.01	0.01	1.19

ABSORPTION SWELL TEST (ASTM D4546) RESULTS

Boring No.	B-22	B-22	B-23	B-24	B-25	B-26
Average Sample Depth (ft)	1	3	1	3	3	1
Sample Height (in)	0.8	0.8	0.8	0.8	0.8	0.8
Sample Diameter (in)	2.5	2.5	2.5	2.5	2.5	2.5
Initial Sample Volume (cu in)	3.93	3.93	3.93	3.93	3.93	3.93
Initial Sample Weight (gr)	116	141	119	135	126	133
Initial Moisture (%)	9.2	16.4	11.5	17.4	10.5	14.6
Final Moisture (%)	20.4	18.5	17.2	19.7	15.5	20.7
Initial Wet Unit Weight (pcf)	112	137	115	131	122	129
Initial Dry Unit Weight (pcf)	103	118	103	112	110	112
Applied Over Burden (psi)	0.9	2.6	0.9	2.6	2.6	0.9
Initial Dial Reading (in)	0.0415	0.0938	0.0464	0.0766	0.0741	0.0518
Final Dial Reading (in)	0.0209	0.0895	0.0419	0.0773	0.0695	0.0721
Swell (%)	-2.58	-0.54	-0.56	0.09	-0.57	2.54

ABSORPTION SWELL TEST (ASTM D4546) RESULTS

Boring No.	B-27	B-28	B-29	B-30	B-31	B-32
Average Sample Depth (ft)	3	1	5	3	1	3
Sample Height (in)	0.8	0.8	0.8	0.8	0.8	0.8
Sample Diameter (in)	2.5	2.5	2.5	2.5	2.5	2.5
Initial Sample Volume (cu in)	3.93	3.93	3.93	3.93	3.93	3.93
Initial Sample Weight (gr)	136	136	141	133	135	134
Initial Moisture (%)	17.1	16.0	11.9	16.0	13.6	15.8
Final Moisture (%)	17.0	19.7	17.0	17.3	17.4	18.2
Initial Wet Unit Weight (pcf)	131	132	137	129	131	130
Initial Dry Unit Weight (pcf)	112	114	122	111	115	112
Applied Over Burden (psi)	2.6	0.9	4.3	2.6	0.9	2.6
Initial Dial Reading (in)	0.0635	0.0526	0.0779	0.0728	0.0349	0.0850
Final Dial Reading (in)	0.0300	0.0597	0.1140	0.0789	0.0349	0.0815
Swell (%)	-4.19	0.89	4.51	0.76	0.00	-0.44

Appendix D - Aerial Photographs

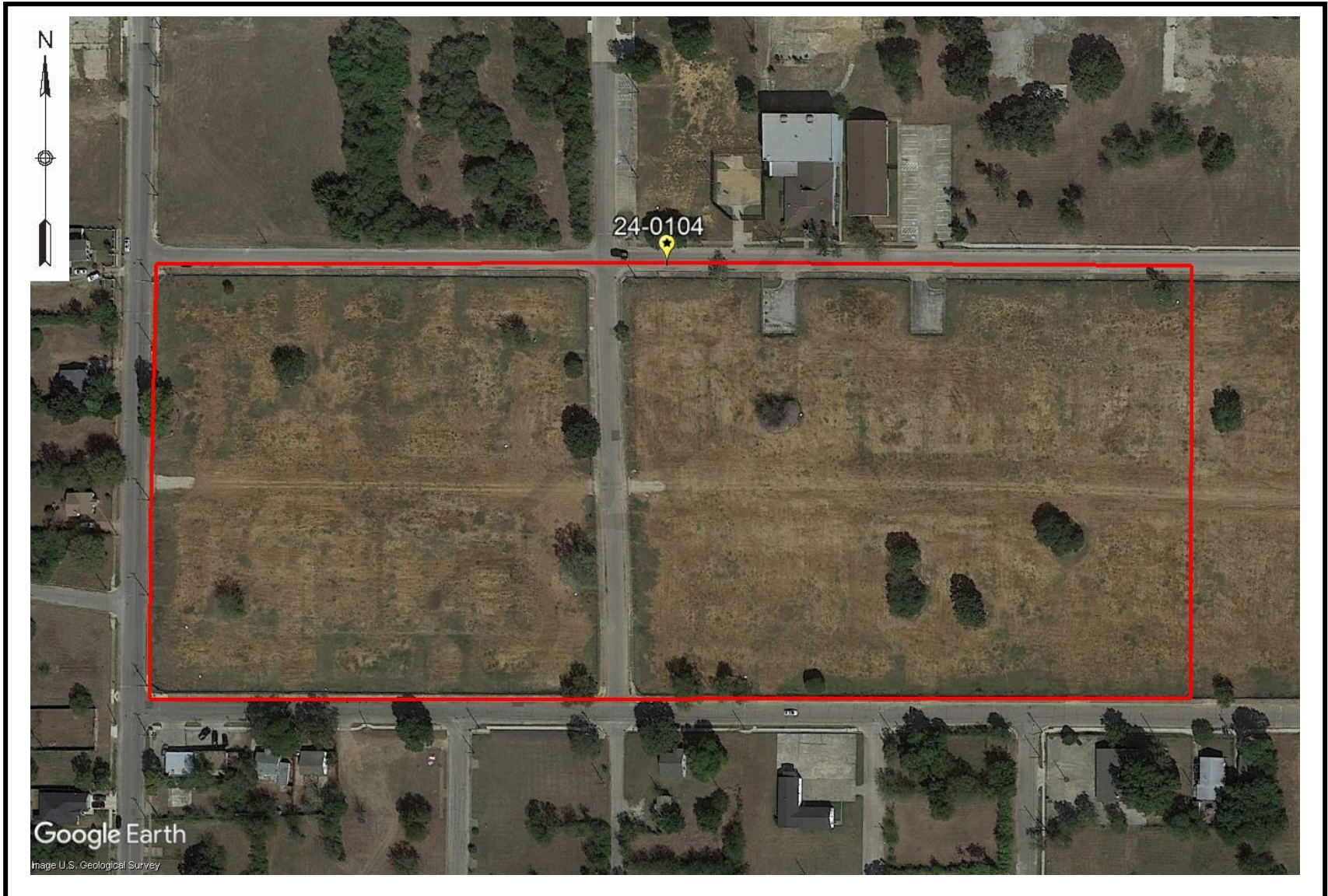
AERIAL PHOTOGRAPH - 2024



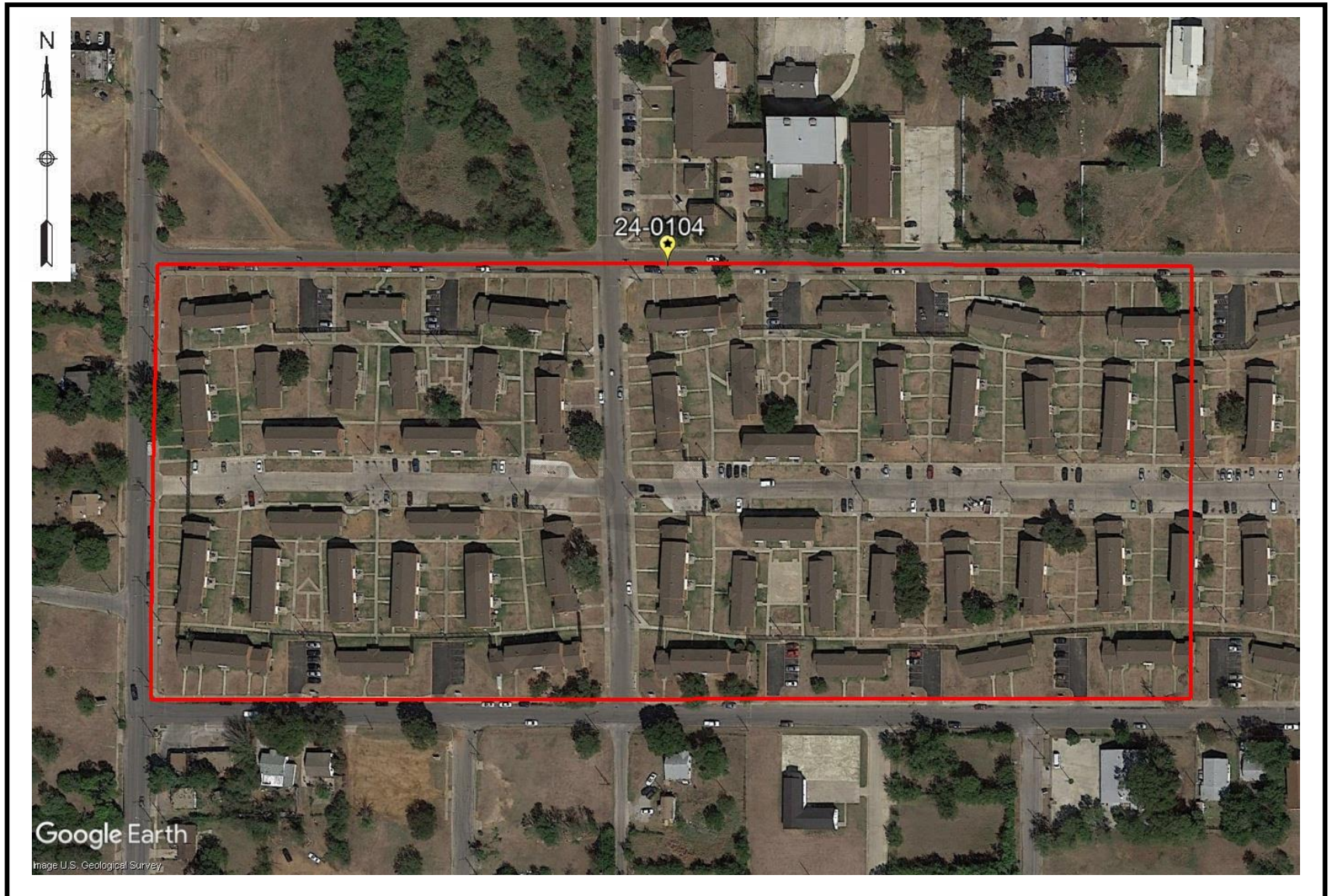
AERIAL PHOTOGRAPH - 2023



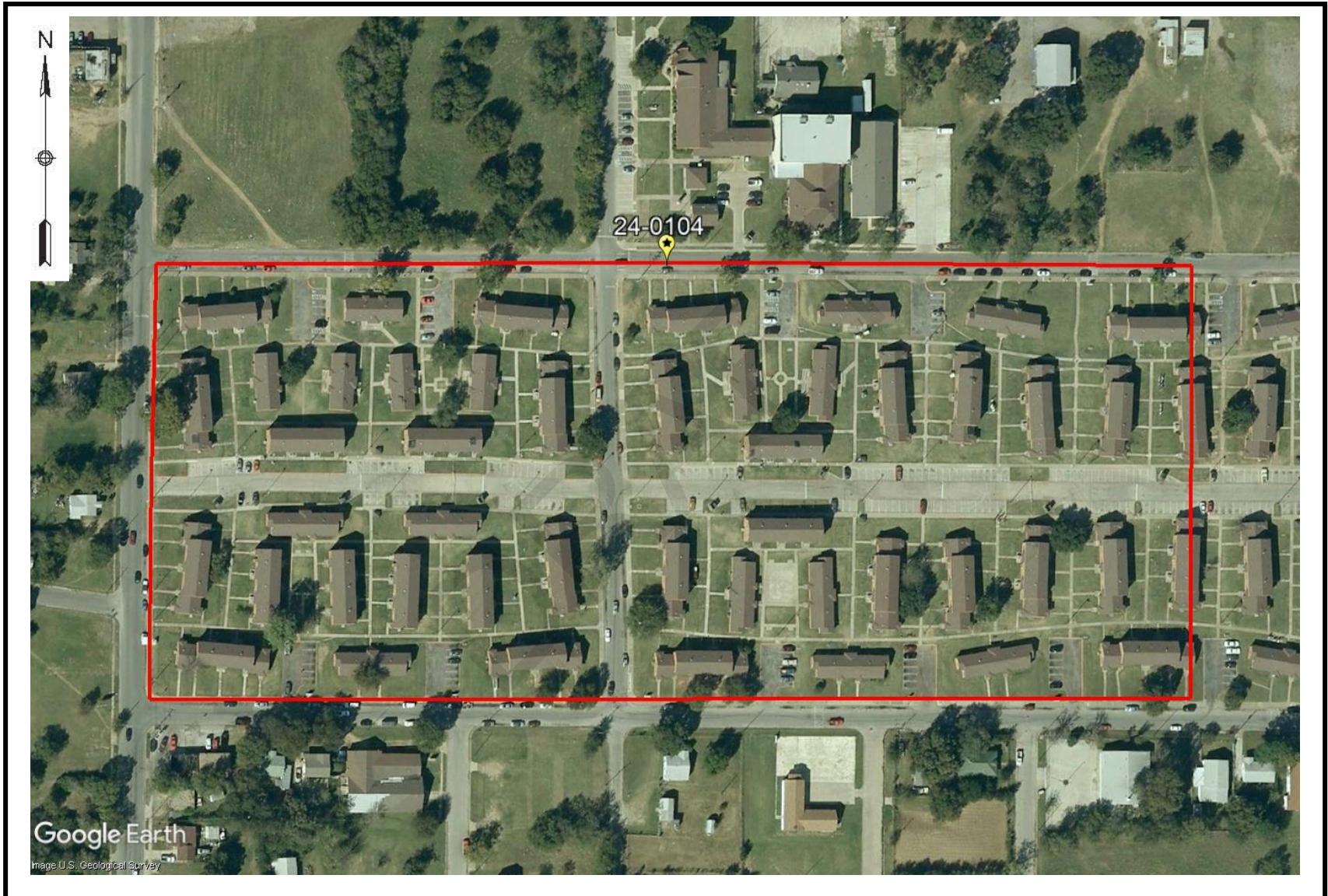
AERIAL PHOTOGRAPH - 2020



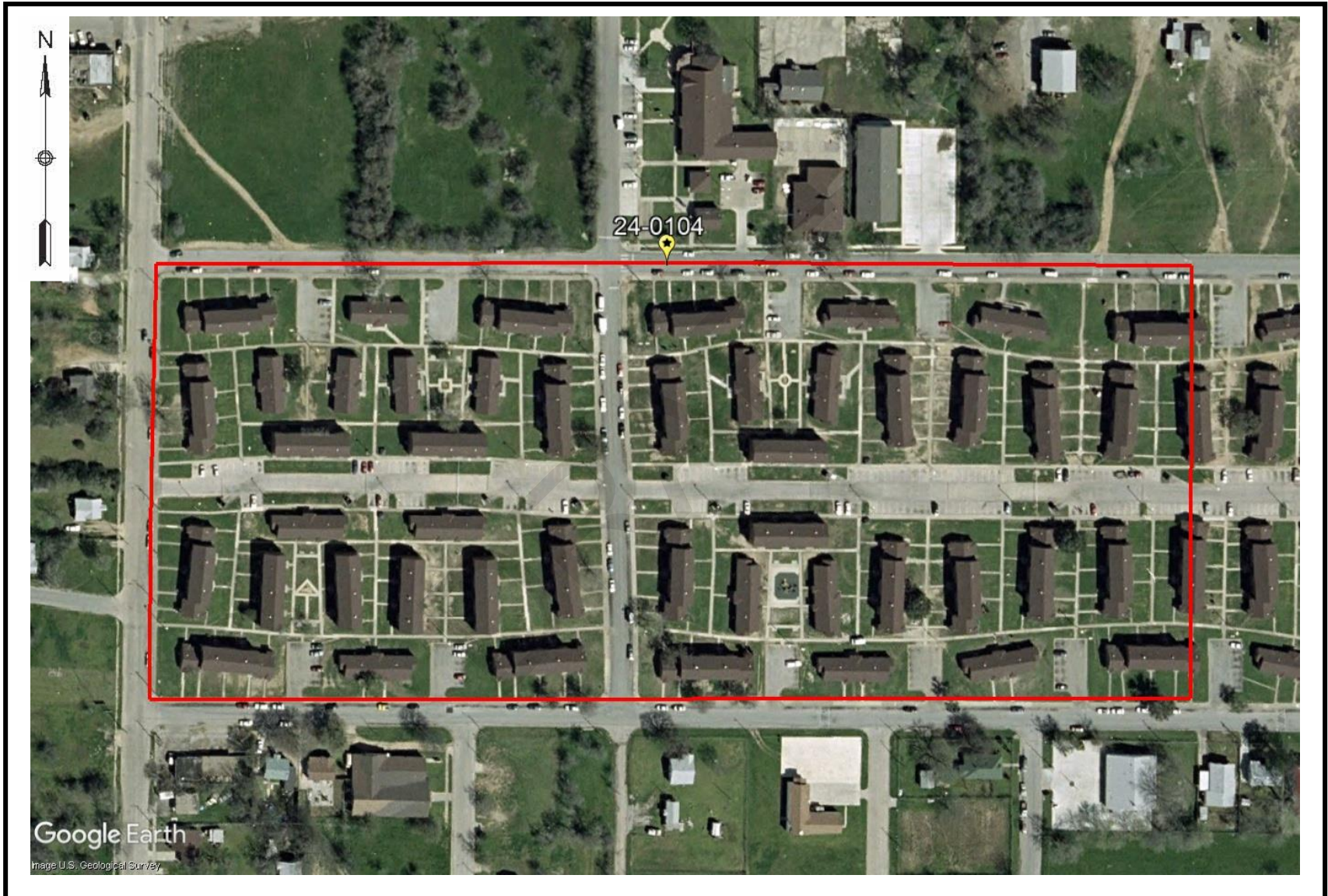
AERIAL PHOTOGRAPH - 2014



AERIAL PHOTOGRAPH - 2007

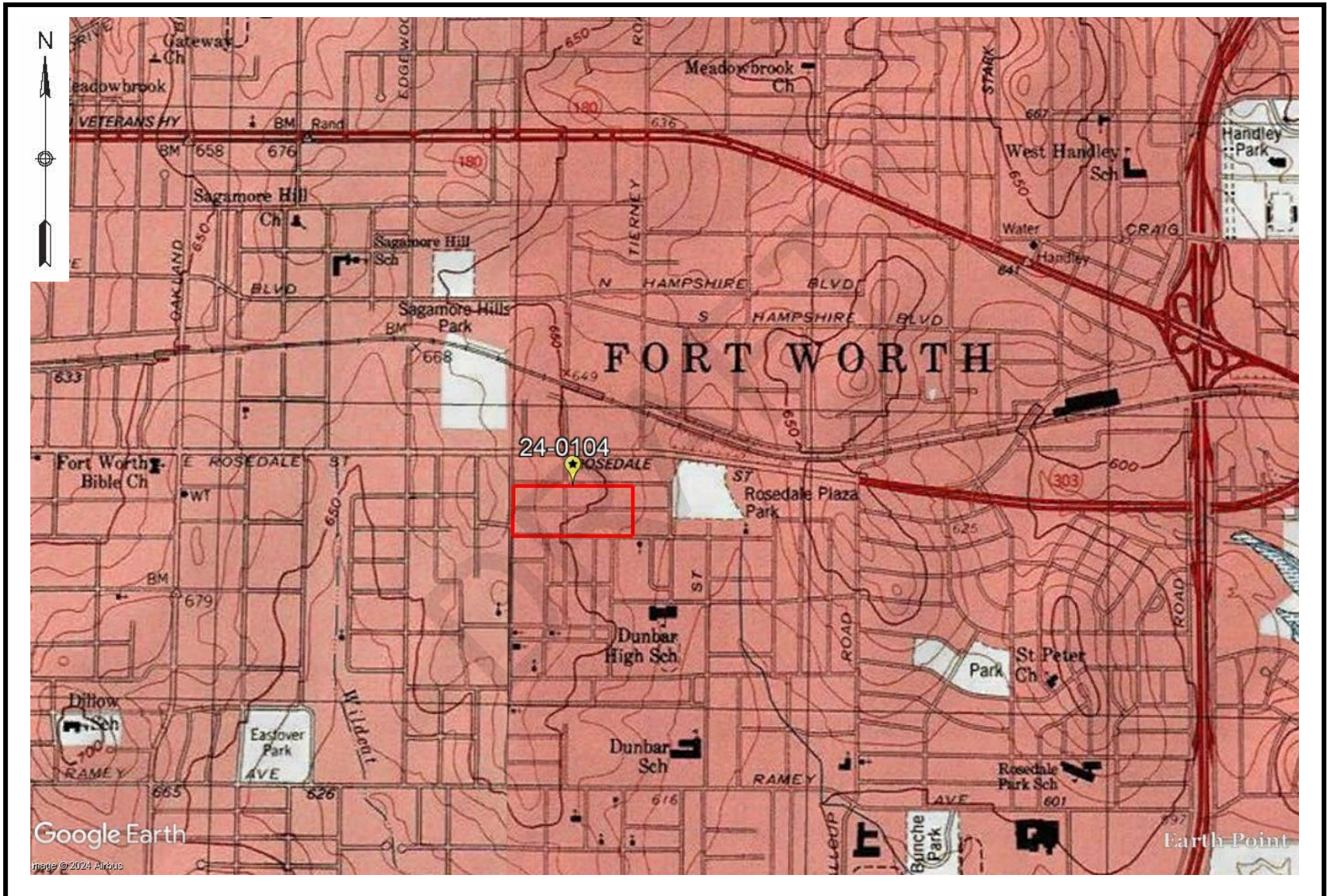


AERIAL PHOTOGRAPH - 2001



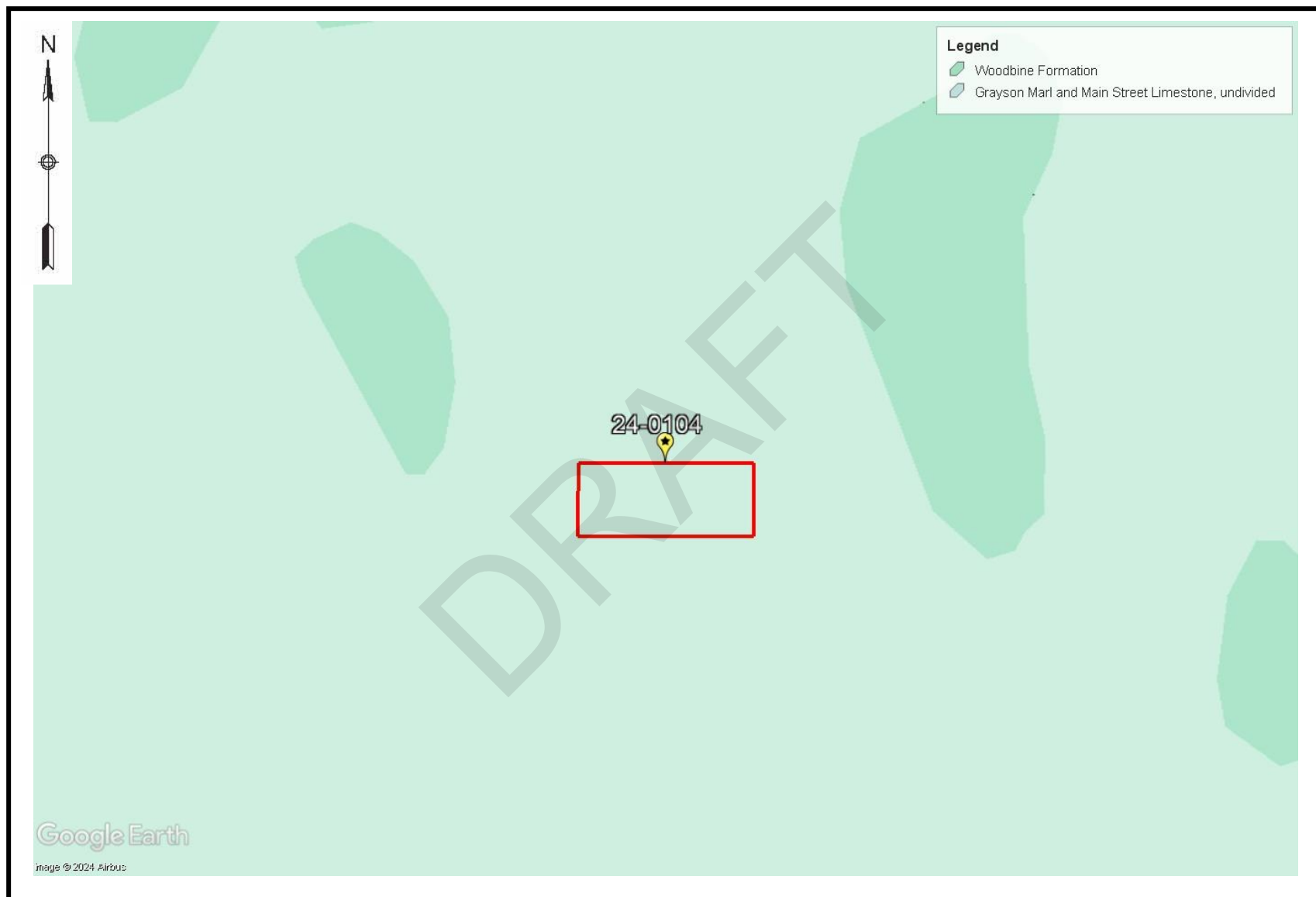
Appendix E - USGS Topographic Map

USGS TOPOGRAPHIC MAP



Appendix F - Geologic Information

GEOLOGIC ATLAS

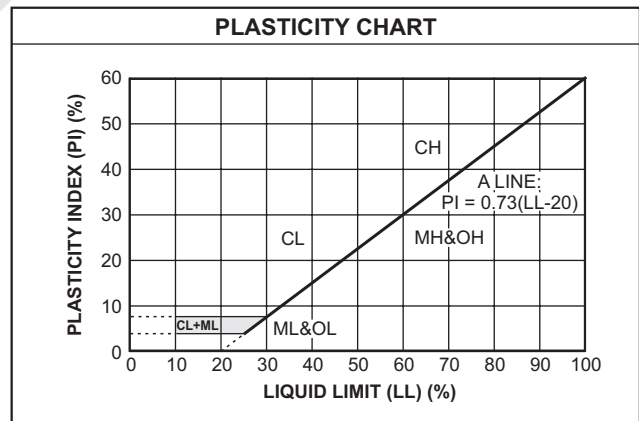


Appendix G - Unified Soil Classification System

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART		
COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)		
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% 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 (More than 12% fines)	
	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	
	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	
	SM	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)		
SILTS AND CLAYS Liquid limit less than 50%	ML	Inorganic silts and very fine sands, rock flour, silty of 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
	OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils

LABORATORY CLASSIFICATION CRITERIA		
GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for GW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	
Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows: Less than 5 percent GW, GP, SW, SP More than 12 percent GM, GC, SM, SC 5 to 12 percent Borderline cases requiring dual symbols		



TERMS DESCRIBING SOIL CONSISTENCY				
Fine Grained Soils		Coarse Grained Soils		
Description	Penetrometer Reading (tsf)	Penetration Resistance (blows/ft)	Description	Relative Density
Soft	0.0 to 1.0	0 to 4	Very Loose	0 to 20%
Firm	1.0 to 1.5	4 to 10	Loose	20 to 40%
Stiff	1.5 to 3.0	10 to 30	Medium Dense	40 to 70%
Very Stiff	3.0 to 4.5	30 to 50	Dense	70 to 90%
Hard	4.5+	Over 50	Very Dense	90 to 100%

Exhibit D – Davis Bacon Procedures and Best Practices

(Separately Attached)

Hughes House II

Davis-Bacon Procedures and Best Practices

1. **Determination of Prevailing Wages:** The Davis-Bacon prevailing wages, as published on the System for Award Management (SAM) website¹, will be verified at the time of contract and distributed by Owner/Developer and Prime Contractor(s) using HUD form 4720 [Exhibit A] to accompany all construction contracts of more than \$2,000.00 executed for the Project (e.g., general contractor, subcontractor and lower tier contractors).
 - A copy of the Current Davis-Bacon Act Wage Determination for Residential Building in Tarrant County (#TX20250015) as published January 3rd 2025 on SAM.gov is included herein [Exhibit B]
2. **Compliance Monitoring & Enforcement:** Prior to loan closing or start of construction, Developer/Owner and Prime Contractor(s) will oversee and administer labor standards compliance throughout the duration of Project. Responsibilities of administering compliance will include, but is not limited to, the following:
 - **Preconstruction Conference** - Prime Contractor(s) and Owner/Developer or owner-representative will hold a formal discussion to discuss labor standards, including applicable Davis Bacon and related labor law requirements, ARPA award program guidelines, monitoring procedures, construction details, and payment requirements.
 - **Ensure that Project adheres to Federal Labor Standards Provisions [Exhibit C]**
 - This form will accompany all construction contracts of more than \$2,000.00 executed for the Project
 - **Enforce and ensure standardized filing system** is followed by each contractor performing work in excess of \$2,000.00 and includes all required support documentation to prove compliance. The Prime Contractor(s) will be responsible for filing and submission of copies of payrolls by all subcontractors.
 - **Prevent awarding contracts to ineligible entities** for federally-assisted work (i.e., debarred, suspended, and/or proposed for debarment).
 - Clear general contractors (prime contractors) and subcontractors, including lower-tier subcontractors on General Services Administration's Excluded Parties List System (EPLS) debarment website²
 - The Prime Contractor(s) will be responsible for checking and clearing all subcontractors
 - **Review weekly employer-certified Department Of Labor Payroll Form WH-347 [Exhibit D]** and related documentation, for completeness and accuracy, submitted by Contractor(s) to ensure proper listing of:

¹ <https://sam.gov/content/wage-determinations>

² <https://www.epls.gov/>.

- Workers;
 - Days worked;
 - Approved DOL General Wage Determination work classifications; and
 - Wage rates, including overtime is paid at 1.5 times the basic rate, if applicable
- **Ensure completeness of Statement of Compliance attached to payrolls (including signatures)**, that employees receive weekly pay, at no less than wage rate applicable to the work classification compliant with the DOL prevailing hourly wage mandate. In case of underpayment of wages, Developer/Owner and Prime Contractor(s) will ensure that employer promptly pays the worker any required restitution.
- **Conduct on-site inspections** and ensure that the Department of Labor (DOL) “Employee Rights under the Davis-Act” poster (WH1321) **[Exhibit E]** is prominently displayed at the job site.

EXHIBIT “A”

HUD Form 4720: Project Wage Rate Sheet Template

Project Wage Rate Sheet

U.S. Department of Housing and Urban Development
Office of Davis-Bacon and Labor Standards

PROJECT NAME:			WAGE DECISION NUMBER/MODIFICATION NUMBER:			
PROJECT NUMBER:			PROJECT COUNTY:			
WORK CLASSIFICATION	BASIC HOURLY RATE (BHR)	FRINGE BENEFITS	TOTAL HOURLY WAGE RATE	LABORERS FRINGE BENEFITS:		\$
				GROUP #	BHR	TOTAL WAGE
Bricklayers			\$			
Carpenters			\$			\$
Cement Masons			\$			\$
Drywall Hangers			\$			\$
Electricians			\$			\$
Iron Workers			\$			\$
Painters			\$	OPERATORS FRINGE BENEFITS:		\$
				GROUP #	BHR	TOTAL WAGE
Plumbers			\$			
Roofers			\$			\$
Sheet Metal Workers			\$			\$
Soft Floor Layers			\$			\$
Tapers			\$			\$
Tile Setters			\$	TRUCK DRIVERS FRINGE BENEFITS:		\$
				GROUP #	BHR	TOTAL WAGE
OTHER CLASSIFICATIONS						
			\$			\$
			\$			\$
			\$			\$
ADDITIONAL CLASSIFICATIONS (HUD Form 4230-A)						
WORK CLASSIFICATION	BASIC HOURLY RATE	FRINGE BENEFITS	TOTAL HOURLY WAGE RATE	DATE OF HUD SUBMISSION TO DOL		DATE OF DOL APPROVAL
			\$			
			\$			
			\$			
			\$			

EXHIBIT “B”

Current Davis-Bacon Act Wage Determination for Residential Building in Tarrant County
(#TX20250015), published January 3rd 2025 on SAM.gov

"General Decision Number: TX20250015 01/03/2025

Superseded General Decision Number: TX20240015

State: Texas

Construction Type: Residential

Counties: Johnson, Parker and Tarrant Counties in Texas.

Residential Projects consisting of single family homes and apartments up to and including 4 stories.

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number Publication Date
0 01/03/2025

SUTX1990-020 04/01/1990

Rates Fringes

CARPENTER (excluding drywall
hanging and form setting).....\$ 9.315 **

CEMENT MASON/CONCRETE
FINISHER (Excluding form
setting).....\$ 9.48 **

DRYWALL HANGER.....\$ 9.00 **

ELECTRICIAN.....\$ 10.214 **

Form Setter.....\$ 9.194 **

HVAC MECHANIC (including
duct, excluding pipe work).....\$ 8.337 **

Laborer, common.....\$ 7.25 **

Painters:

Brush.....\$ 8.85 **

Spray.....\$ 10.00 **

PLUMBER (Including HVAC WORK)....\$ 10.687 **

ROOFER.....\$ 8.646 **

Sheet Metal Worker (Excluding
HVAC-duct work).....\$ 14.103 **

TILE SETTER.....\$ 11.50 **

TRUCK DRIVER.....\$ 7.25 **

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

=====
** Workers in this classification may be entitled to a higher
minimum wage under Executive Order 14026 (\$17.75) or 13658
(\$13.30). Please see the Note at the top of the wage
determination for more information. Please also note that the
minimum wage requirements of Executive Order 14026 are not
currently being enforced as to any contract or subcontract to
which the states of Texas, Louisiana, or Mississippi, including
their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave
for Federal Contractors applies to all contracts subject to the
Davis-Bacon Act for which the contract is awarded (and any
solicitation was issued) on or after January 1, 2017. If this
contract is covered by the EO, the contractor must provide
employees with 1 hour of paid sick leave for every 30 hours
they work, up to 56 hours of paid sick leave each year.
Employees must be permitted to use paid sick leave for their

own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at

<https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

- a) a survey underlying a wage determination
- b) an existing published wage determination
- c) an initial WHD letter setting forth a position on a wage determination matter
- d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or

by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

EXHIBIT “C”

Federal Labor Standards Provisions

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section I(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part

of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract in the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section I(b)(2)(B) of the Davis-bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section I(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been

communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i) except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to HUD or its designee. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5 (a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A.3.(ii)(b).

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph A.3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees.

(i) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who

is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) **Trainees.** Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by

the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 in this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be

awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1 01 0, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration..... makes, utters or publishes any statement knowing the same to be false..... shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. The provisions of this paragraph B are applicable where the amount of the prime contract exceeds \$100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety. The provisions of this paragraph C are applicable where the amount of the prime contract exceeds \$100,000.

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96). 40 USC 3701 et seq.

(3) The contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

EXHIBIT “D”

Department Of Labor Payroll Form WH-347

PAYROLL
(For Contractor's Optional Use; See Instructions at www.dol.gov/whd/forms/wh347instr.htm)



Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

Rev. Dec. 2008

OMB No.:1235-0008
Expires: 07/31/2024

NAME OF CONTRACTOR ☐				OR SUBCONTRACTOR ☐				ADDRESS												
PAYROLL NO.				FOR WEEK ENDING				PROJECT AND LOCATION				PROJECT OR CONTRACT NO.								
(1)	(2)	(3)	OT OR ST	(4) DAY AND DATE							(5)	(6)	(7)	(8) DEDUCTIONS					(9)	
NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	NO. OF WITHHOLDING EXEMPTIONS	WORK CLASSIFICATION									TOTAL HOURS	RATE OF PAY	GROSS AMOUNT EARNED	FICA	WITH- HOLDING TAX			OTHER	TOTAL DEDUCTIONS	NET WAGES PAID FOR WEEK
				HOURS WORKED EACH DAY																
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While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that it will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

Date _____

I, _____
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by _____ on the _____
(Contractor or Subcontractor)
_____ ; that during the payroll period commencing on the _____
(Building or Work)
_____ day of _____, _____, and ending the _____ day of _____, _____,
all persons employed on said project have been paid the full weekly wages earned, that no rebates have
been or will be made either directly or indirectly to or on behalf of said
_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly
from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part
3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948,
63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are
correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the
applicable wage rates contained in any wage determination incorporated into the contract; that the classifications
set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship
program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and
Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered
with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

☐ — in addition to the basic hourly wage rates paid to each laborer or mechanic listed in
the above referenced payroll, payments of fringe benefits as listed in the contract
have been or will be made to appropriate programs for the benefit of such employees,
except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

☐ — Each laborer or mechanic listed in the above referenced payroll has been paid,
as indicated on the payroll, an amount not less than the sum of the applicable
basic hourly wage rate plus the amount of the required fringe benefits as listed
in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR
SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 3729 OF
TITLE 31 OF THE UNITED STATES CODE.

EXHIBIT “E”

Department of Labor (DOL) “Employee Rights under the Davis-Act” poster (WH1321)

EMPLOYEE RIGHTS

UNDER THE DAVIS-BACON ACT

FOR LABORERS AND MECHANICS EMPLOYED ON FEDERAL OR FEDERALLY ASSISTED CONSTRUCTION PROJECTS

**PREVAILING
WAGES**

You must be paid not less than the wage rate listed in the Davis-Bacon Wage Decision posted with this Notice for the work you perform.

OVERTIME

You must be paid not less than one and one-half times your basic rate of pay for all hours worked over 40 in a work week. There are few exceptions.

ENFORCEMENT

Contract payments can be withheld to ensure workers receive wages and overtime pay due, and liquidated damages may apply if overtime pay requirements are not met. Davis-Bacon contract clauses allow contract termination and debarment of contractors from future federal contracts for up to three years. A contractor who falsifies certified payroll records or induces wage kickbacks may be subject to civil or criminal prosecution, fines and/or imprisonment.

APPRENTICES

Apprentice rates apply only to apprentices properly registered under approved Federal or State apprenticeship programs.

PROPER PAY

If you do not receive proper pay, or require further information on the applicable wages, contact the Contracting Officer listed below:

or contact the U.S. Department of Labor’s Wage and Hour Division.



WAGE AND HOUR DIVISION
UNITED STATES DEPARTMENT OF LABOR

1-866-487-9243
TTY: 1-877-889-5627
www.dol.gov/whd



Exhibit E – Hughes House II Public Plan Set(s) IPRC #1 - 2

https://www.dropbox.com/scl/fo/twugmczh58ns21aftoicf/AFcNTGsuoy_08yKd6MeNqI0?rlkey=45p4jogaap90s078cm0gvalfy&st=anecypmx&dl=0