Request for Proposal City of Edgewood Senior Community Center

The City of Edgewood, Texas will receive sealed Proposals for products and services required for the construction of a Senior Community Center. Proposals will be due on Monday, February 10, 2025, at 10:30am and opened. Proposals will be presented to the City Council on Monday, February 10, 2025, at 6:30pm. Below are the requirements for your proposal package. Please note that the City of Edgewood will not use lowest/best bid as the sole basis for entering this contract.

SECTION 1: INTRODUCTION

1.1 Invitation

The City of Edgewood invites experienced and qualified Bidders to submit proposals to provide services for one or more projects in this RFP package.

SECTION 2: SUBMISSION, EVALUATION, AND AWARD

2.1 Notices to Bidders

- This Request for Proposals (RFP) does not commit the City of Edgewood to award a contract to pay costs incurred in the preparation of a proposal responding to this request, or to procure a contract for service. The City reserves the right to accept or reject any or all proposals received as a result of this request, or to cancel, in part or in its entirety, the RFP process if the City deems it is in the best interest to do so. The City reserves the right to make an award on the basis of low bid or in any other combination that will serve the best interest of the City.
- It is in the bidder's best interest to submit a complete and accurate proposal. Where documentation or response is incomplete or silent, it shall be assumed that the proposal is deficient. Further, the bidder's proposal should meet the state requirements contained in the RFP.
- Each selected numbered Project identified in this RFP should be quoted in the proposal as a per-project and price. The City reserves the right to select the projects that meet the goals of and are in the best interest of the City.

- Any explanation or statement that the Vendor wishes to make must be contained with the Proposal but shall be written separately and independently of the Proposal proper and attached thereto.
- The Texas Open Records Act/Public Information Act, Texas Government Code, Chapter 552 provides that access to information concerning the conduct of government business is a fundamental and necessary right of every person in the state. Public records are defined as any writing relating to the conduct of the public's business and are open to inspection during normal business hours with few exceptions.
- There are specific exceptions to the Open Records Act. In the event the City receives a request for inspection of any proposal submitted pursuant to this RFP, it is the responsibility of the organization whose proposal has been requested to notify the City of any right to confidentiality that may exist. The City may assert that right based on its own legal analysis. City will not seek a judicial determination of any asserted right of confidentiality that may exist outside of an Attorney General Opinion. The City will not make that assertion on behalf of the bidder. Absent a judicial determination, or Attorney General Opinion that the documents are exempt from disclosure, they will be subjected to inspection.
- Submission of a proposal constitutes a complete waiver of any claims whatsoever against the City of Edgewood and/or its agents, officers or employees, that the City has violated a bidder's right to privacy, disclosed trade secrets or caused any damage by allowing the proposal to be inspected.
- 2.2 Submission and Receipt of Proposals
 - Proposals must be submitted in the format described in Section 3 and 4 of this document. A sealed proposal may be withdrawn prior to the submission deadline in person by a bidder or an authorized representative. Withdrawals will not be considered eligible for resubmittal. Proposals and modifications to proposals received after the time and date specified in the RFP will be rejected.
 - Proposals, prices, terms, and conditions shall remain firm as negotiated and agreed upon for the term of the contract. The Vendor is responsible for its own verification of all information provided to it. The Vendor must satisfy itself, upon examination of this RFP, as to the intent of specifications. After the submission of the Proposal, no complaint or claim that there was any misunderstanding will be entertained.
 - The Vendor must submit at least two copies of the Proposal in sealed envelopes plainly marked with the **"RFP: Senior Community Center Project#".** Proposals should be delivered to: City of Edgewood, ATTN: Petra Marley, 107 NE Front Street, P.O. Box 377, Edgewood, Texas 75117.

- Upon receipt by the City, all proposals will be marked with the date and time of receipt. All proposals received prior to the deadline shall be kept in a secure place. Opening of proposals shall be public and witnessed by at least two (2) people. These openings will occur no more than thirty minutes after the deadline at the same location specified for delivery. Late proposals may be returned to the bidder unopened or destroyed.
- All proposals shall remain firm from the date specified for opening the proposals.

2.3 Rejection of Proposals

The City of Edgewood reserves the right to reject any and all proposals for any reason, including but not limited to, failure to adhere to the proposed requirements or inaccuracy of any information supplied within a proposal. City shall notify the bidder of a rejected proposal.

2.4 Evaluation of Proposals

- All accepted proposals received before the deadline will be reviewed and a recommendation will be made to the City Council. The City Council reserves the right to accept or reject the recommendation. Furnishing false or misleading information during the proposal process may constitute a breach of contract and/or reason for rejection.
- The City will evaluate the below criteria that indicate the points that are assigned to each section. The City will determine the score for each section on a scale starting with zero (0), with the best score being the assigned number, the best possible score of one hundred (100).

Price – 70 points Completion Schedule – 20 points Business Experience – 5 points References and Experience with the City – 5 points

SECTION 3. CREDENTIALS

The RFP submitted must provide the following:

- 3.1 Provide a list of current communities your organization serves.
 - Type and level of service provided.
 - The contract period.
 - The name, address, contact person and telephone number.
- 3.2 Document your organization's experience.

3.3 List any commitments or potential commitments which may impact assets, lines of credit, guarantor letters, or otherwise affect your abilities to perform this contract.

3.4 List all litigation in the past five years involving your organization or any principle officers in connection with any contract for similar services.

3.5 List business or professional licenses or certificates held by your organization required to provide the services required by this contract.

SECTION 4. PROPOSAL and PROJECT

4.1 List of Projects for Proposal

The RFP is required to include the following:

4.2 Introduction Section

- A letter of transmittal from the bidder to the City summarizing the proposal and project number
- Proposal and Project Identification Page (Attachment A)
- Statement of Intent and Affirmation (Attachment B)

Please include other items of interest that you may see as being beneficial to gaining our attention for moving to the next process of negotiating a contract.

Sincerely,

Petra Marley City Administrator

ATTACHMENT A PROPOSAL and PROJECT IDENTIFICATION

<u>City of Edgewood – Senior Community Center</u> Project#_____

This Form must appear on the front of the Proposal

This is a proposal to contract with the City of Edgewood to provide services for the Senior Community Center, Project# _____.

Name of Bidder: _	 	
Legal Address:	 	
Phone Number: _	 	
Contact Person: _	 	
Phone Number:		

OFFICIAL USE ONLY: DO NOT FILL IN THIS SECTION OF THE RFP

Date Received:
Time Received:
Received By:
Title:

ATTACHMENT B STATEMENT OF INTENT AND AFFIRMATION

In submitting this proposal/offer, ______, hereafter referred to as "Bidder", hereby affirms its full understanding of all terms set forth in the Request for Proposal (RFP). Further, the Bidder certifies the completeness and accuracy of all information contained in the Bidder's response to the RFP and supplied to the City of Edgewood during the request for proposal process. The Bidder's proposal constitutes a firm and binding offer by the Bidder to perform the services as stated. Bidder further affirms that Bidder will meet or exceed request for proposal specifications unless expectations have been specifically noted in the proposal.

Business

Authorized Representative

Printed Name

Title

State of Texas § County of ______ §

ACKNOWLEDGEMENT

Before me, on this the _____day of ______, 2025, the undersigned, a Notary Public in and for said County and State, personally appeared ______ who executed and acknowledged the Intent and Affirmation of Statement. WITNESS MY HAND AND SEAL subscribed and affixed.

Notary Public

Printed Name

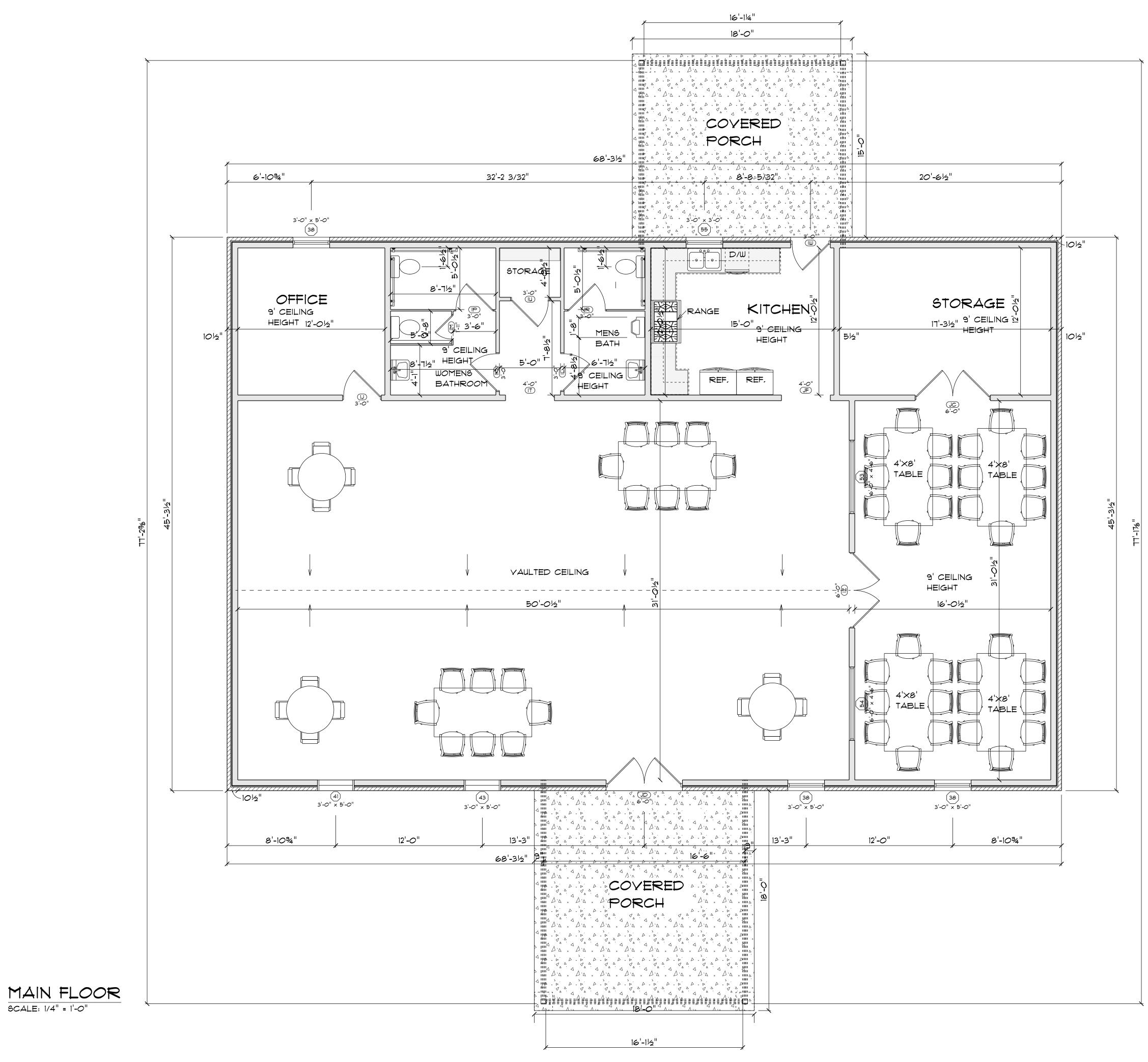
My Commission Expires

Senior Citizen's Building Specifications

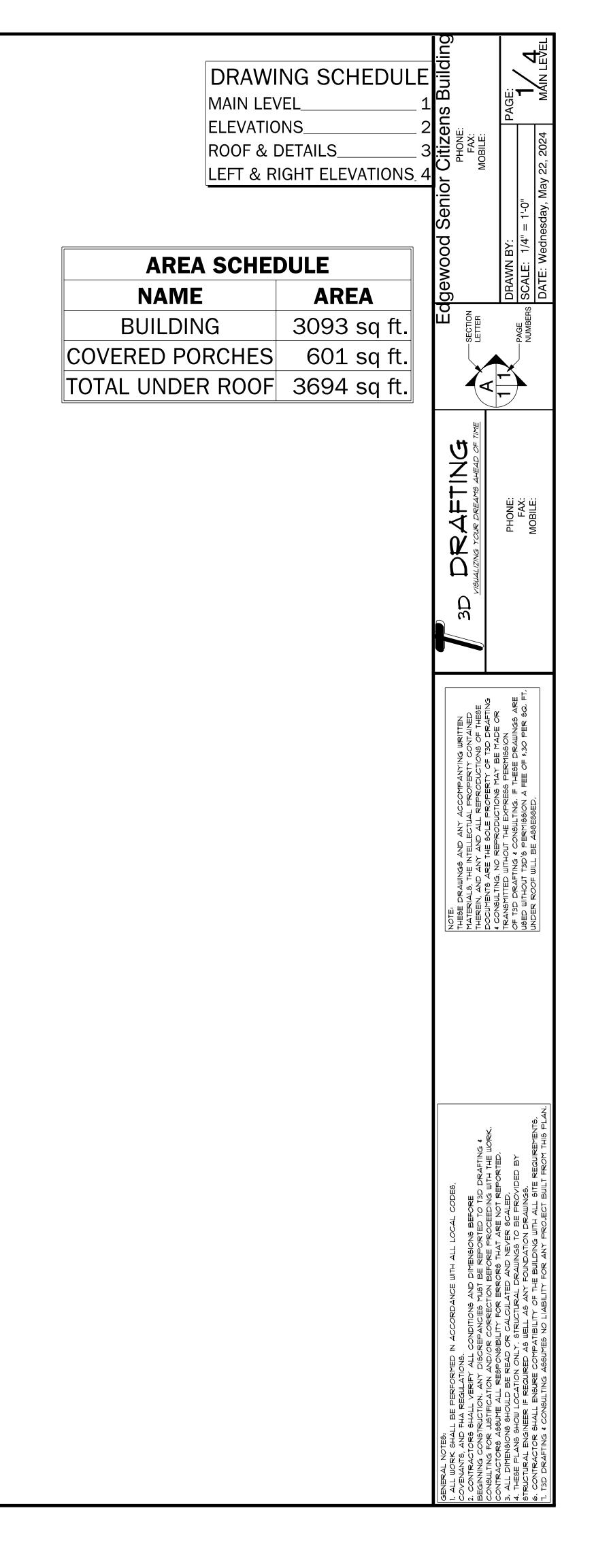
Water/Sewer:	City to connect water and sewer to the building
Excavation/Pad:	Refer to geo-tech report
Plumbing:	Provide all labor and material to rough in, top out, and set fixtures (fixtures to be provided by owner) Provide a 3' stub out for water and sewer Provide one gas outlet for HVAC system
Termite Treatment:	Pre-treat pad for termites
Foundation:	Refer to the engineered plan
Framing:	Provide labor to frame, cornice, and set windows to existing codes Roof to be truss system except for porches The owner will provide materials to include nails
Roofing:	Provide labor only for composition roof
Electrical:	Provide labor and materials to include can lights up to 50 Furnish and install any exit lighting fixtures All other light fixtures and fans are to be provided by owner 5 -fans 3-chandeliers 6- wall packs 2-sconces
HVAC:	Provide all labor and materials for HVAC to include Vent hood ventilation owner to pre-approve equipment and design (gas heat)
Insulation:	Roof and wall to be open cell foam
Sheetrock:	Provide labor only

Tape/Bed/Texture:	Provide all labor and materials for an orange peel texture (large gathering room ceiling will be wood)
Cabinets:	Per plan, laminated - owner to approve color
Kitchen countertops:	3 cm Granite - owner to approve color
Trim:	Provide labor to set doors with casing (exterior and Interior), wrap windows with casing, install t&g ceiling in the main gathering room Install all hardware (hardware furnished by owner)
Paint:	Provide labor and materials to paint inside and outside to include exterior doors. 1-color for outside cornice 1-color for doors 1- interior wall color 1- trim color 1-stain color for the ceiling Cabinets to be laminated
Masonry:	Provide labor only (except for brick ties) All brick
Flooring:	Provide labor and materials for a 12-mil vinyl floor with cove baseboard Owner to approve color and product
Paving:	Provide a sq. ft. price for 5" paving up to 10,000 sq. ft. 3500 psi concrete with #3 rebar on 18" centers

All sub-contractors are to keep the property free of trash and dispose of waste in the provided dumpster.

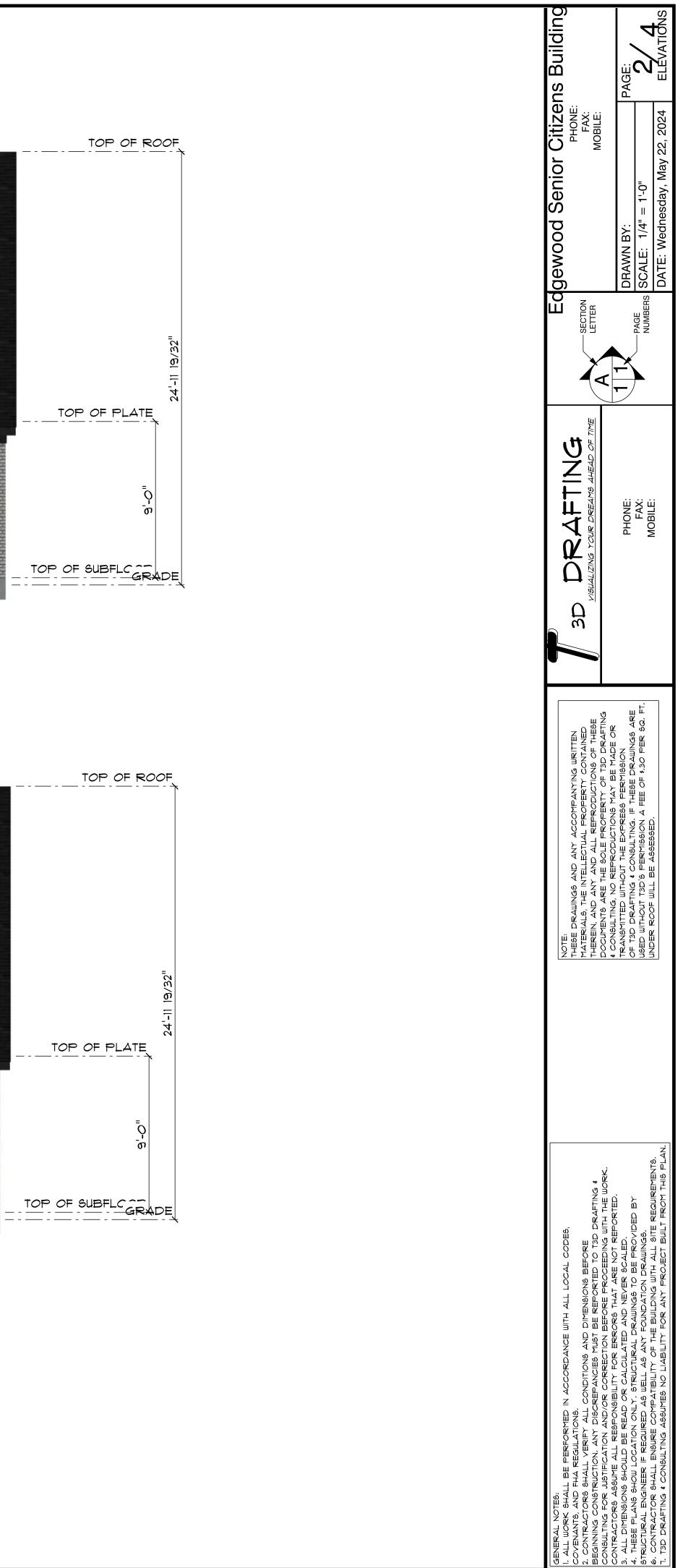


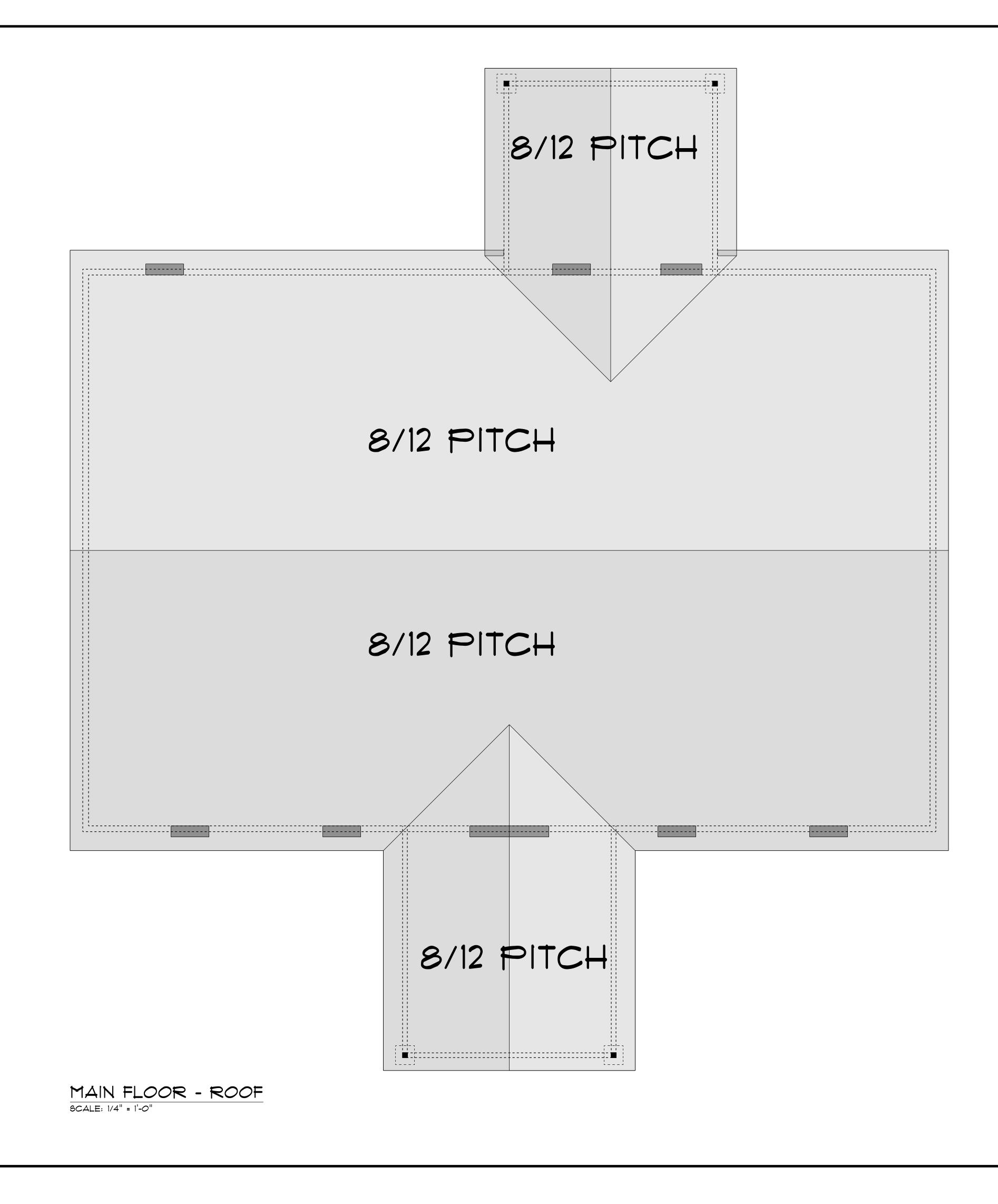
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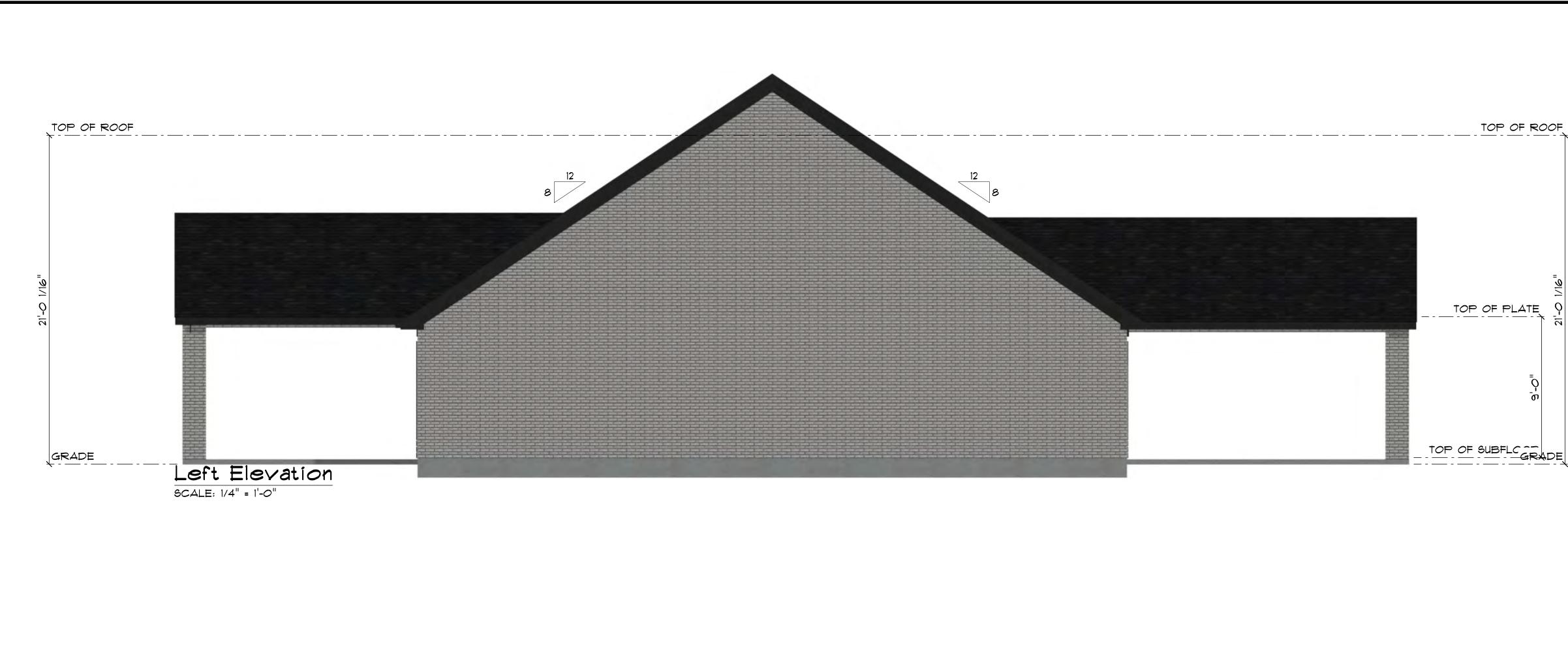


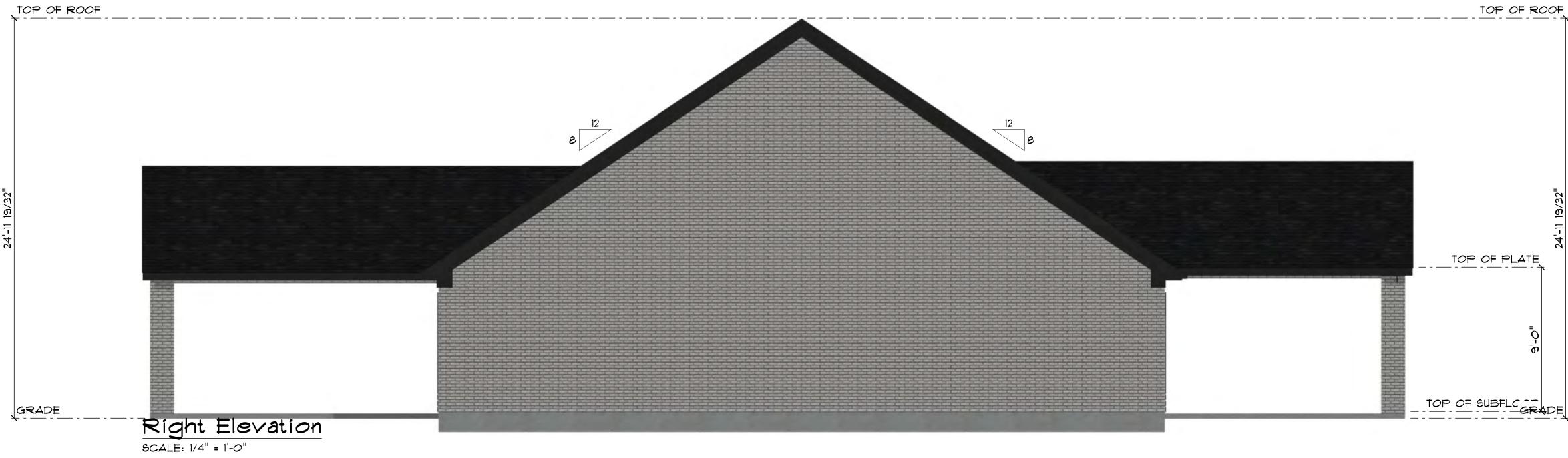


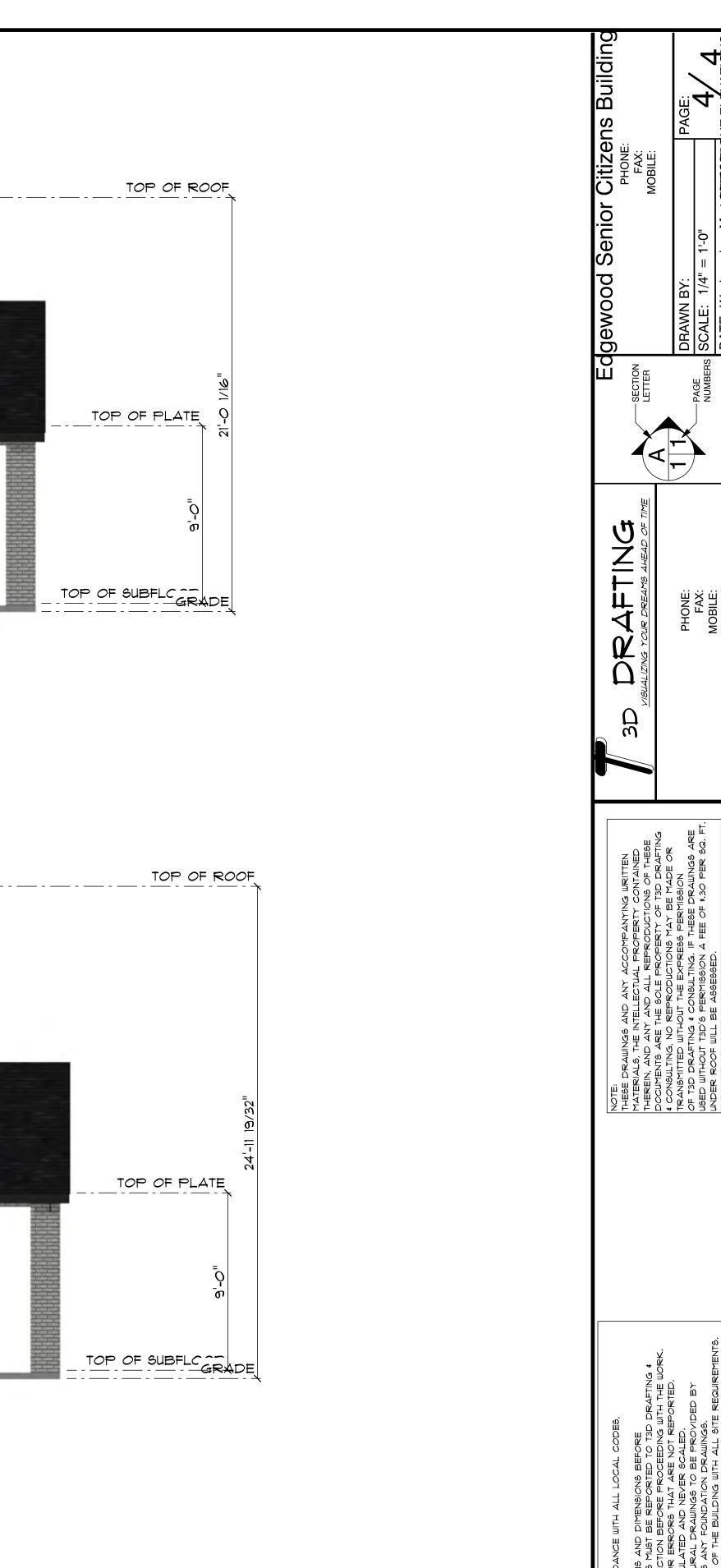


	Ο	PENING SCHEDULE		
COUNT	OPENING ID	LIBRARY NAME	WIDTH	HEIGHT
1	41	Window\Single Hung	3'-0"	5'-0"
1	43	Window\Single Hung	3'-0"	5'-0"
1	53	Window\Casement	6'-0"	4'-6"
1	54	Window\Casement	6'-0"	4'-6"
1	55	Window\Single Hung	3'-0"	3'-0"
1	IJ	Interior Door\Colonial	3'-0"	6'-8"
1	IK	Interior Door\Colonial	3'-0"	6'-8"
1	IL	Interior Door\Colonial	3'-0"	6'-8"
1	IM	Interior Door\Colonial	1'-11"	6'-8"
1	IP	Interior Door\Colonial	3'-0"	6'-8"
1	IR	Interior Door\Colonial	3'-0"	6'-8"
1	IU	Interior Door\Colonial	3'-0"	6'-8"
1	IW	Exterior Door\Colonial	3'-0"	6'-8"
1	IZ	Interior Door\French	6'-0"	6'-8"
1	JC	Interior Door\Colonial	6'-0"	6'-8"
1	JD	Exterior Door\Country	6'-0"	6'-8"
3	38	Window\Single Hung	3'-0"	5'-0"

GENERAL NOTES.			Edrowood Sonior Citizane Briilding
1 411 HICER SHALL BE PERFORMED IN ACCORDANCE HITH ALL LOCAL CODES	NOTE;		
COVENANTS. AND FHA REGULATIONS.	THESE DRAWINGS AND ANY ACCOMPANYING WRITTEN		PHONE:
2. CONTRACTORS SHALL VERIFY ALL CONDITIONS AND DIMENSIONS BEFORE	MATERIALS, THE INTELLECTUAL PROPERTY CONTAINED		
BEGINNING CONSTRUCTION, ANY DISCREPANCIES MUST BE REPORTED TO T3D DRAFTING &	THEREIN, AND ANY AND ALL REPRODUCTIONS OF THESE	VISUALIZING YOUR DREAMS AHEAD OF TIME	
CONSULTING FOR JUSTIFICATION AND/OR CORRECTION BEFORE PROCEEDING WITH THE WORK.	DOCUMENTS ARE THE SOLE PROPERTY OF 13D DRAFTING		
CONTRACTORS ASSUME ALL RESPONSIBILITY FOR ERRORS THAT ARE NOT REPORTED.	& CONSULTING, NO REPRODUCTIONS MAY BE MADE OR		T
3. ALL DIMENSIONS SHOULD BE READ OR CALCULATED AND NEVER SCALED.	TRANSMITTED WITHOUT THE EXPRESS PERMISSION	DHONE	
4, THESE PLANS SHOW LOCATION ONLY, STRUCTURAL DRAWINGS TO BE PROVIDED BY	OF T3D DRAFTING & CONSULTING, IF THESE DRAWINGS ARE		
STRUCTURAL ENGINEER IF REQUIRED AS WELL AS ANY FOUNDATION DRAWINGS.	USED WITHOUT 13D'S PERMISSION A FEE OF 5.30 PER SQ. FT.	FAX:	NIMMERS SCALE: 1/4" = 1'-0"
6. CONTRACTOR SHALL ENSURE COMPATIBILITY OF THE BUILDING WITH ALL SITE REQUIREMENTS.	UNDER ROOF WILL BE 453E53ED.	MOBILE:	
1. T3D DRAFTING & CONSULTING ASSUMES NO LIABILITY FOR ANY PROJECT BUILT FROM THIS PLAN.			DATE: Wednesday, May 22, 2024 ROOF & DETAILS



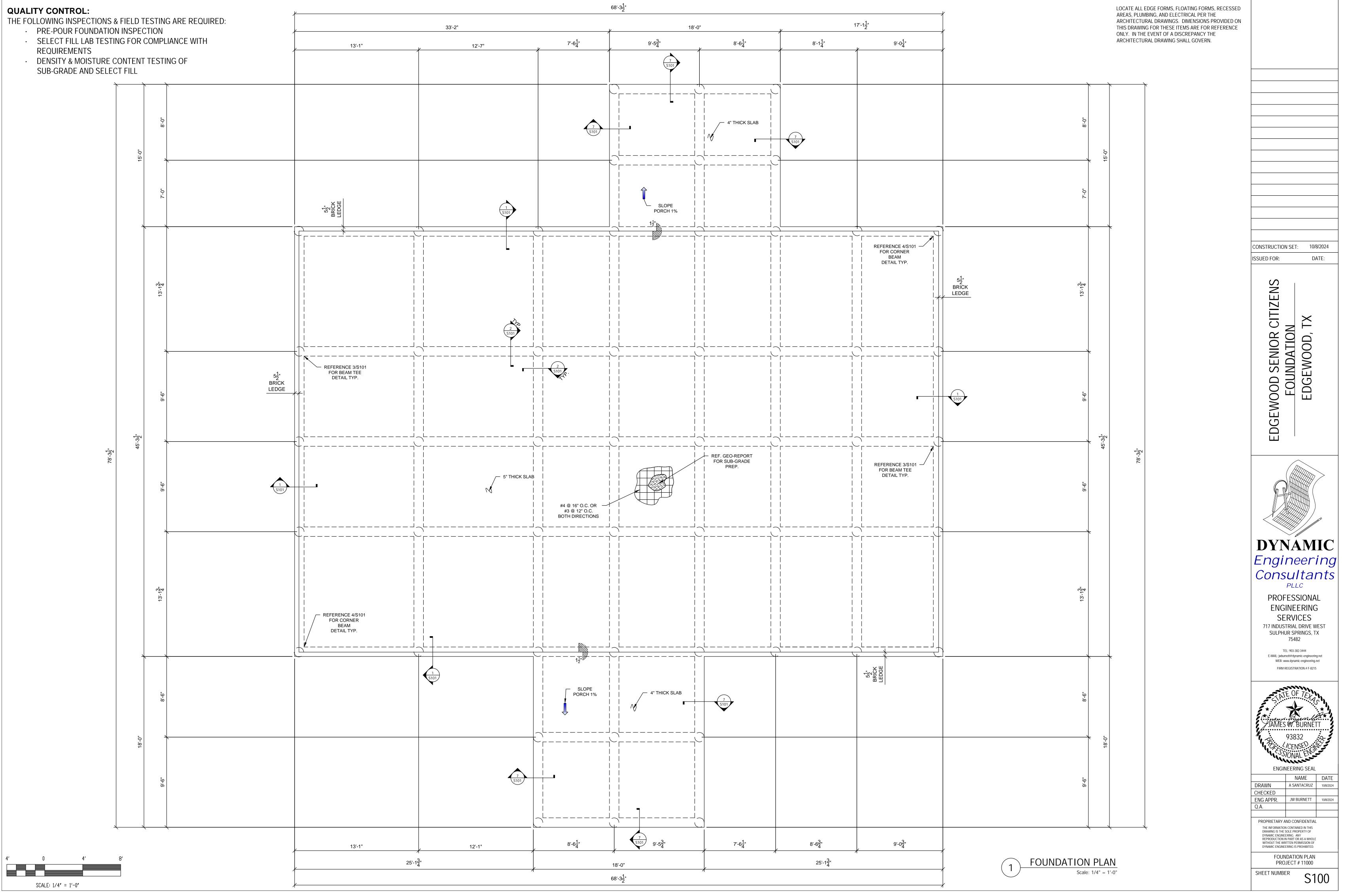


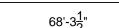


DITIONS AND DIMENSIC ANCIES MUST BE REPC ORRECTION BEFORE F TY FOR ERRORS THAT

T

Phone: Fax: Mobile:







GENERAL

1. THE CONSTRUCTION OF THE FOUNDATION SHALL CONFORM TO THE FOLLOWING STANDARDS AS APPLICABLE: a) INTERNATIONAL BUILDING CODE, LATEST EDITION

- b) STANDARD REQUIREMENTS FOR ANALYSIS OF SHALLOW CONCRETE FOUNDATIONS ON EXPANSIVE SOILS, PTI, 2004, 1ST EDITION c) STANDARD REQUIREMENTS FOR DESIGN OF SHALLOW CONCRETE FOUNDATIONS ON EXPANSIVE SOILS, PTI, 2012,
- **1ST EDITION** d) DESIGN OF POST-TENSIONED SLABS-ON-GROUND, PTI, 2008, 3RD EDITION
- e) CONSTRUCTION AND MAINTENANCE MANUAL FOR POST-TENSIONED SLABS-ON-GROUND FOUNDATIONS, PTI, 2017, 3RD EDITION f) LOCAL BUILDING STANDARDS

THE DESIGN IS BASED ON THE SUB-SURFACE INVESTIGATION PERFORMED BY DYNAMIC ENGINEERING CONSULTANTS, PLLC. 2. SPECIFIC RECOMMENDATIONS REGARDING SITE PREPARATION CAN BE FOUND IN #DYNO - 11000

3. STRUCTURAL DESIGN LOADS: a) ROOF LOADS:

a, 10001 E	0, 100.			
i.	DEAD:	15	PSF	
ii.	LIVE:	20	PSF	
b) FLOORS	5:			
i.	DEAD:	10	PSF	
ii.	LIVE:	40	PSF	
c) WALLS:				
i.	EXTERIOR:	15	PSF	
ii.	INTERIOR:	10	PSF	
d) 8" MASC	NRY	80	PSF	
e) 6" CONC	RETE	85	PSF	
f) SNOW G	ROUND LOA	۱D	5	PS

g) WIND: 3 SECOND GUST AT 115 MPH, EXPOSURE B

- 4. THE BUILDER SHALL BE RESPONSIBLE FOR PROVIDING POSITIVE DRAINAGE FOR WATER AWAY FROM THE FOUNDATION DURING AND AFTER CONSTRUCTION. THE FINISHED GRADE AWAY FROM FOUNDATION EDGES SHALL FALL A MINIMUM OF 6 INCHES WITHIN THE FIRST 10 FEET.
- 5. THE CONTRACTOR SHALL VERIFY ALL EDGE FORM SETTING DIMENSIONS AS WELL AS THE LOCATION OF ELEVATION CHANGES, OFF SETS, BRICK LEDGES, AND BLOCK-OUTS WITH THE ARCHITECTURAL DRAWINGS AND NOTIFY THE DESIGN ENGINEER OF ANY DISCREPANCIES THAT MAY EXIST ON THE FOUNDATION DESIGN DRAWINGS PRIOR TO COMMENCING CONSTRUCTION. IN THE EVENT THAT A DISCREPANCY OCCURS THE ARCHITECTURAL DRAWING SHALL TAKE PRECEDENCE OVER THE FOUNDATION DRAWING. DYNAMIC ENGINEERING CONSULTANTS WILL NOT BE HELD RESPONSIBLE FOR ERRORS ASSOCIATED WITH EDGE FORM SETTING DIMENSIONS AS WELL AS THE LOCATION OF ELEVATION CHANGES, OFF SETS, BRICK LEDGES, PLUMBING, ELECTRICAL, AND BLOCK-OUTS. THIS INFORMATION, IF PROVIDED ON THE FOUNDATION DRAWING, IS FOR REFERENCE ONLY.
- 5. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ANCHOR BOLTS, HOLD DOWN DEVICES, MECHANICAL AND PLUMBING SLEEVES, AND OTHER RELATED ITEMS REQUIRED TO COMPLETE THE FOUNDATION AND NOTIFY THE DESIGN ENGINEER SHOULD CONFLICTS EXIST WITH THE INFORMATION CONTAINED IN THE FOUNDATION DESIGN DRAWINGS.

MATERIALS

- 1. FILL MATERIAL SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEO-TECHNICAL INVESTIGATION CONCERNING TYPE, COMPACTION, LIFT THICKNESS, AND PLACEMENTS REQUIREMENTS (REF GENERAL NOTE 2).
- 2. POST-TENSIONING STEEL, IF APPLICABLE, SHALL BE $\frac{1}{2}$ ", 270KSI (FPU), 7 WIRE LOW-RELAXATION STRAND AND CONFORM TO THE REQUIREMENTS OF ASTM-A416. THE POST-TENSIONING SYSTEM SHALL MEET THE REQUIREMENTS OF THE PTI SPECIFICATIONS FOR UNBONDED SINGLE STRAND TENDONS, LATEST EDITION, AND BE FABRICATED BY A COMPANY CURRENTLY CERTIFIED BY THE PTI IN THE PLANTS PRODUCING UNBONDED SINGLE
- STRAND TENDONS CERTIFICATION PROGRAM AND SHALL MAINTAIN THE CERTIFICATION FOR THE DURATION OF THE PROJECT. 3. NON-PRESTRESSED REINFORCEMENT SHALL BE GRADE 60.
- 4. CONCRETE SHALL BE TYPE I OR TYPE II UNLESS OTHERWISE SPECIFIED IN THE GEO-TECHNICAL INVESTIGATION REPORT. USE NORMAL WEIGHT AGGREGATES HAVING A MAXIMUM AGGREGATE SIZE OF 1-1/2". CONCRETE SHALL OBTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. THE MINIMUM CEMENT CONTENT SHALL BE 470 LBS/CUBIC YARD, AND THE SLUMP SHALL NOT EXCEED 5" UNLESS SPECIFIC HIGH RANGE WATER REDUCERS AND OTHER ADDITIVES ARE USED. ADDITIVES CONTAINING CALCIUM CHLORIDES ARE PROHIBITED. AIR ENTRAINMENT MAY BE REQUIRED FOR FOUNDATIONS CAST ON SOILS WITH HIGH LEVELS OF WATER-SOLUBLE SULFATES.

CONSTRUCTION:

- 1. PROVIDE CONCRETE COVERAGE FOR REINFORCING STEEL BARS AS FOLLOWS: 3" CLEAR
 - a. PIERS
 - 2" CLEAR TO TIES ON TOP AND SIDES b. GRADE BEAMS GRADE BEAMS **3" CLEAR TO TIES ON BOTTOM**
 - d. SLABS ON FILL/VOIDS 2" CLEAR TO TOP & 1-1/2" TO BOTTOM
- 2. TENDONS AND REBAR SHALL BE ADEQUATELY SUPPORTED TO PREVENT BOTH VERTICAL AND HORIZONTAL
- MOVEMENT DURING CONCRETE PLACEMENT.
- 3. THE CONCRETE PLACEMENT OPERATION SHALL BE COMPLETED IN ONE CONTINUOUS OPERATION UNLESS OTHERWISE SPECIFIED ON THE FOUNDATION DESIGN DRAWINGS.
- . CONCRETE SHALL BE PROPERLY CONSOLIDATED ESPECIALLY AROUND POST-TENSION ANCHORAGES TO ELIMINATE VOIDS AND HONEYCOMBING. CARE SHALL BE EXERCISED NOT TO OVER OR UNDER VIBRATE CONCRETE IN THE ANCHORAGE ZONE AREAS. MECHANICAL VIBRATORS SHALL VIBRATE ALL CONCRETE BEAMS, WALLS, FOOTINGS, & PIERS
- 5. CONSTRUCT FOUNDATION PIERS, IF APPLICABLE, IN ACCORDANCE WITH ACI 336, STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF DRILLED PIERS, LATEST EDITION. 6. UNDER INTERIOR BUILDING SLAB ON FILL, PLACE A VAPOR BARRIER BETWEEN COMPACTED SELECT FILL AND SLAB.
- IF VOID FORMS ARE USED, PLACE THE VAPOR BARRIER BETWEEN THE VOID FORMS AND SLAB.
- 7. A 2" TO 4" LEVELING SAND BASE IS TO BE PLACED ON TOP OF THE PREPARED SUB-GRADE. *DELETED 8. FOOTINGS MUST PENETRATE A MINIMUM OF 12" INTO UNDISTURBED SOIL.
- 9. IF VOID FORMS ARE SPECIFIED, FOLLOW MANUFACTURER'S INSTRUCTIONS FOR ASSEMBLY AND PLACEMENT. 10. CONSTRUCT ALL REINFORCED CONCRETE TO COMPLY WITH RECOMMENDATIONS OF ACI 318-05 AND ACI 301-05 UNLESS OTHERWISE NOTED OR SPECIFIED.
- 11.INSTALL NON-PRESTRESSED REINFORCING STEEL, WHEN DIRECTED ON THE FOUNDATION DESIGN DRAWING, AS FOLLOWS UNLESS SPECIFIED OTHERWISE:
 - a. HORIZONTAL BARS IN BEAMS, WALLS, AND FOOTINGS #5 b. VERTICAL BARS AT CORNERS AND INTERSECTIONS #4 INTERCONNECTS (DOWELS, Z BAR, L BAR, NOSE BAR) #4 @ 16" O.C. #4 @ 16" O.C.
 - d. SLABS ON FILL/VOIDS e. STIRRUPS VERTICAL PIER BARS
- #5 12. DEVELOPMENT LENGTH, LD (EMBEDMENT LENGTH) = MINIMUM OF 32 BAR DIAMETERS UNLESS SPECIFIED
- OTHERWISE 13.INSTALL #5 HORIZONTAL BARS @ 18" O.C. STARTING FROM 6" BELOW TOP SURFACE IN BEAMS, WALLS, AND
- FOOTINGS WHEN HEIGHT EXCEEDS 36"
- 14. ANCHOR BOLT ASSEMBLIES SHALL CONSIST OF ASTM 307, GRADE A, CARBON STEEL, HEX HEAD BOLTS, CARBON STEEL NUTS, AND FLAT UNHARDENED ASTM A36 STEEL WASHERS. 15. MINIMUM ANCHOR BOLT EMBEDMENT SHALL BE 12 BOLT DIAMETERS, UNLESS NOTED OTHERWISE. CLEAN ANCHOR BOLTS OF ALL GREASE, DIRT, ETC. BEFORE INSTALLATION. SPACE @ 48" O.C.

#3 @ 16" O.C.

INSPECTION:

INSPECTION SHALL BE CARRIED OUT BY AN INDEPENDENT INSPECTION AGENCY OR A REPRESENTATIVE OF THE DESIGN ENGINEER. THE INSPECTIONS SHALL CONSIST OF:

- 1. PRIOR TO CONCRETE PLACEMENT:
- a) PRE-POUR PIER INSPECTION b) RIB SIZE AND SPACING (OR THICKNESS OF UNIFORM THICKNESS FOUNDATION)
- c) SLAB THICKNESS
- d) TENDON SIZE, SPACING, NUMBER, AND PROFILE (IF ANY)
- e) REBAR SIZE, GRADE, NUMBER OF BARS, AND SPACING
- f) ADEQUATE COVER OVER REINFORCEMENT, INCLUDING ANCHORAGES OF POST-TENSIONING SYSTEM g) SMOOTH TRANSITION OF TENDONS AROUND OPENINGS AND THROUGH TRANSITIONS BETWEEN PORTIONS OF THE SLAB AT DIFFERENT ELEVATIONS. ADEQUATE COVERAGE AROUND ALL REINFORCEMENT MUST BE MAINTAINED.
- 2. DURING CONCRETE PLACEMENT:
- a) THE PROPER MIX DESIGN IS SUPPLIED AND THAT EXCESS WATER IS NOT ADDED AT THE SITE b) THE REINFORCEMENT IS NOT DISPLACED c) CORRECT CONSOLIDATION PROCEDURES ARE FOLLOWED
- SPECIAL CONSIDERATIONS FOR SLAB-ON-GROUND CONSTRUCTION:
- 1. TREES OR OTHER VEGETATION TALLER THAN 6 FT. OR OF THE TYPE THAT REQUIRES EXCESSIVE AMOUNTS OF WATER SHOULD NOT BE PLANTED WITHIN 20 FT. OF THE FOUNDATION.
- 2. EXCAVATIONS FOR SWIMMING POOLS SHALL NOT BE PLACED CLOSER THAN 10 FT. TO THE FOUNDATION AND LANDSCAPING SHOULD BE PLANNED SUCH THAT ADEQUATE MOISTURE CAN REACH AND BE DRAINED FROM AROUND THE FOUNDATION.
- 3. IT IS IMPORTANT TO UNDERSTAND THAT THE PERFORMANCE OF THE FOUNDATION IS LINKED DIRECTLY TO THE CONSISTENCY OF THE MOISTURE CONTENT IN THE SOIL AND THAT POSITIVE DRAINAGE SHOULD BE MAINTAINED DURING AND AFTER CONSTRUCTION.
- 4. ADDITIONS ARE SUSCEPTIBLE TO DIFFERENTIAL MOVEMENTS AT THE INTERFACE OF THE EXISTING BUILDING AND THE NEW ADDITION. THE ADDITION SHALL BE CONSTRUCTED WITH CONTROL JOINTS AT THE INTERFACE IN ORDER TO ALLOW FOR THE DIFFERENTIAL MOVEMENT.

NOTES TO OWNER

1. UNDER NORMAL CONDITIONS, AND FOR CONVENTIONAL BUILDINGS SUCH AS THE SUBJECT MATTER, REINFORCED

CONCRETE AS WELL AS POST-TENSIONED CONCRETE DEVELOP CRACKS. THE CRACKS ARE DUE TO THE INHERENT TO WHICH THE BEAMS/SLABS ARE TIED.

- 2. THE CRACKS FORMED ARE NORMALLY COSMETIC. THE SLAB MAINTAINS ITS SERVICEABILITY AND STRENGTH AND NUMBER OF SUCH CRACKS, IT IS NOT PRACTICAL TO COMPLETELY ELIMINATE TENSILE STRESS IN THE FOUNDATION AND THEREBY COMPLETELY ELIMINATE ALL CRACKS.
- ARE WIDER THAN $\frac{3}{16}$ " MAY NEED TO BE PRESSURE EPOXIED.
- VARIATIONS IN TEMPERATURE WILL PERSIST.
- DISTRESSED. SLAB.
- 7. OWNER SHOULD CONTINUALLY INSPECT THE SLAB DURING HOT OR DRY PERIODS TO INSURE THAT WATERING IS ADEQUATE SUCH THAT SOIL IS NOT SEPARATING OR PULLING BACK FROM THE SLAB. 8. TREES AND SHRUBS SHOULD NOT BE LOCATED CLOSER TO THE FOUNDATION THAN A HORIZONTAL DISTANCE
- EQUAL TO ROUGHLY ¹/₂ OF THE TREES OR SHRUBS MATURE HEIGHT. IRRIGATION SYSTEMS SHALL NOT SPRAY DIRECTLY ON FOUNDATION.
- 10. LANDSCAPING SHALL NOT AFFECT FINAL GRADE. EXCAVATION OF SOILS ADJACENT TO FOUNDATION FOR PURPOSE EDGING SHALL NOT BE USED.

LIMITATIONS:

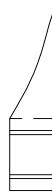
THE FOUNDATION DESIGN INFORMATION AND DETAILED DRAWINGS SUBMITTED TO THE CUSTOMER ARE BASED ON THE AVAILABLE SUBSURFACE INFORMATION OBTAINED BY DYNAMIC ENGINEERING CONSULTANTS AND DESIGN DETAILS FURNISHED BY THE CUSTOMER FOR THE PROPOSED PROJECT. IF THERE ARE ANY REVISIONS TO THE PLANS FOR THIS PROJECT, OR IF DEVIATIONS FROM THE SUBSURFACE CONDITIONS NOTED IN THIS REPORT ARE ENCOUNTERED DURING CONSTRUCTION, DYNAMIC ENGINEERING CONSULTANTS SHOULD BE NOTIFIED IMMEDIATELY TO DETERMINE IF CHANGES IN THE FOUNDATION DESIGN ARE REQUIRED. IF DYNAMIC ENGINEERING IS NOT NOTIFIED OF SUCH CHANGES, DYNAMIC ENGINEERING WILL NOT BE RESPONSIBLE FOR THE IMPACT OF THOSE CHANGES ON THE PROJECT.

THE PROFESSIONAL ENGINEER WARRANTS THAT THE FINDINGS, RECOMMENDATIONS, SPECIFICATIONS, OR PROFESSIONAL ADVICE SUBMITTED TO THE CUSTOMER HAVE BEEN MADE IN ACCORDANCE WITH GENERALLY ACCEPTED PROFESSIONAL ENGINEERING PRACTICES IN THE LOCAL AREA. NO OTHER WARRANTIES ARE IMPLIED OR EXPRESSED.

> 4" OF TOPSOIL **6" NATIVE CLAY** BACKFILL CAP

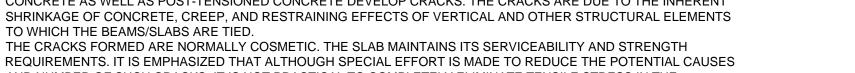
HORIZ. BAR TOP & BOTTOM

6 MIL POLY CONT. MOISTURE BARRIER (TYP.)



(2) #3 VERT. DOWELS @ 36" TO 48" O.C. TYP.





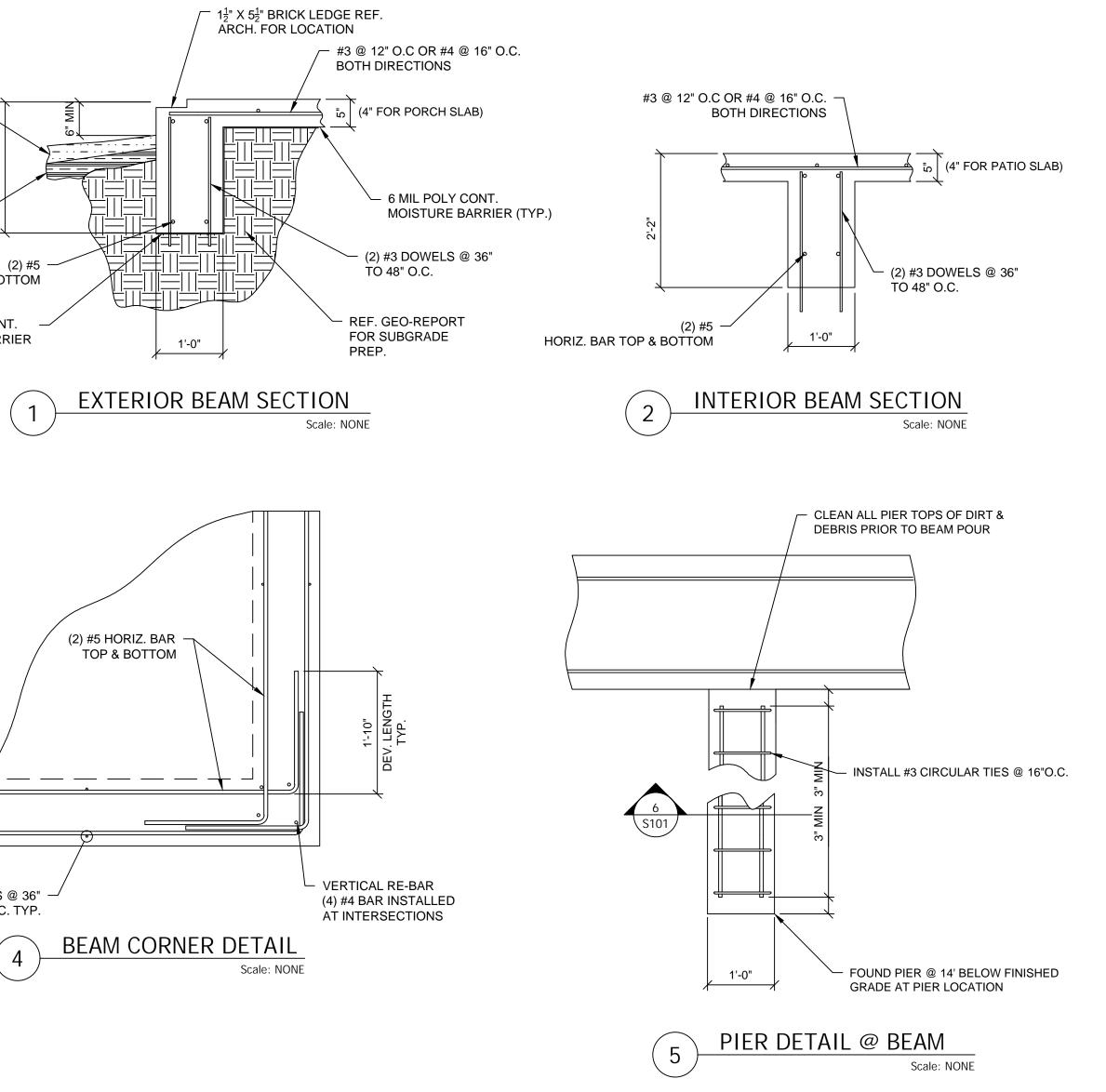
3. MOST SUCH CRACKS DEVELOP OVER THE FIRST THREE YEARS OF THE LIFE OF THE FLOOR SYSTEM. CRACKS WHICH

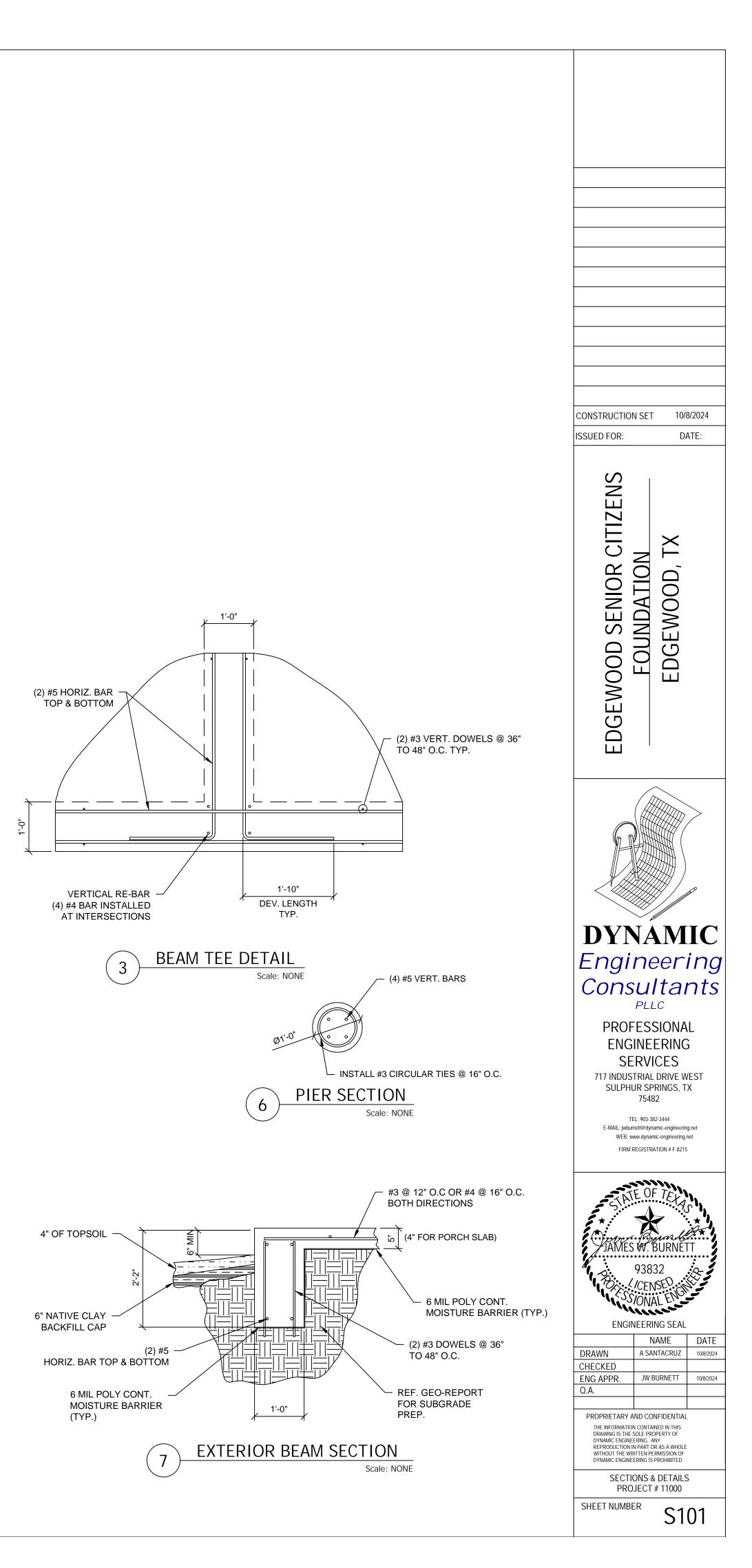
4. THE OBJECT OF THE JOINTS PROVIDED IS TO ALLOW MOVEMENT. MOVEMENTS DUE TO CREEP AND SHRINKAGE MAY BE NOTICEABLE AT JOINTS UP TO TWO YEARS AFTER CONSTRUCTION, BEYOND WHICH MOVEMENTS DUE TO

5. OWNER MUST ENSURE THAT MOISTURE CONTENT OF THE SOIL IS MAINTAINED AT A CONSTANT LEVEL. DRAINAGE SHALL BE MAINTAINED SUCH THAT PONDING OF WATER DOES NOT DEVELOP. IF WATER IS PERSISTENT, BUILDER SHOULD BE CONTACTED TO IMPROVE DRAINAGE. MOISTURE VARIATION IS THE MOST COMMON SOURCE OF SLAB

6. OWNER SHOULD NOT PLANT TREES ADJACENT TO THE SLAB SUCH THAT THE ROOT SYSTEM CAN GET UNDER THE

OF LANDSCAPING ARE PROHIBITED. LANDSCAPING SHALL BE PLACED ON TOP OF FINAL GRADE. SOLID LANDSCAPE







GEOTECHNICAL INVESTIGATION

B

GEO-TECHNICAL INVESTIGATION PROPOSED SENIOR COMMUNITY CENTER FOR CITY OF EDGEWOOD 101 EAST PECAN STREET EDGEWOOD, TX PROJECT # 11000

SUBMITTED BY:



REPORT NUMBER: DYNGEO-11000

October 18, 2024







From: J.W. Burnett Dynamic Engineering Consultants, PLLC P.O. Box 674 Sulphur Springs, Texas 75483 903-382-3444 Date: October 18, 2024

To: City of Edgewood

Project Number: DYNGEO-11000

Subject: Geotechnical Investigation

Purpose:

The Purpose of this report is to present the results and recommendations of the geotechnical investigation performed for City of Edgewood. The report is based on the proposed Senior Community Center (commercial) that will be located at 101 East Pecan Street in Edgewood, Texas. This report includes the following information and recommendations:

- Field Observation and Boring Locations
- Soil Parameters Necessary for Foundation Design Based Upon:
 - Visual Inspection and Onsite Testing
 - o Laboratory Testing
- Site Preparation
- Foundation and Floor System Design Recommendations
- Post Construction Drainage, Vegetation, and Landscaping Recommendations

If additional services are needed, such as foundation design or construction materials testing, please contact us at the number listed above. Thank you for confiding in Dynamic Engineering for your consulting needs.

Sincerely,

James W. Burnett, PE Project Engineer Dynamic Engineering







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Introduction:

The purpose of this study was to explore the subsurface conditions at the site to enable an evaluation of an acceptable foundation design for the proposed construction. Our scope of services included collecting continuous soil samples at two (2) locations inside the building footprint. The depth of the building bore hole was approximately 16 feet. Select laboratory testing and preparation of this geotechnical report are also included in the scope of effort. This report briefly outlines the testing procedures, presents available project information, describes the site and subsurface conditions, and presents recommendations regarding the following:

- Foundation types, depths, allowable bearing capacities, and an estimate of potential settlement and heave.
- Grading procedures for site development.
- Comments regarding factors that will impact construction and performance of the proposed construction.

Project Description:

Project Description:

A new single-story wood-framed Senior Community Center is in the planning stages. The total under-roof square footage for the center is approximately 3,694 sqft. The Senior Community Center will be located at 101 East Pecan Street in Edgewood, Texas. The site is relatively flat with no obstructions in the way of construction.

Continuous core samples were collected from two (2) boreholes to a depth of 16' inside the building footprint. Authorization to conduct the geo-technical investigation was granted by the City of Edgewood. Sampling and Field-testing was started and completed on Thursday, September 5th, 2024.





Reference Figure 1 for a picture of site



Figure 1 : Picture of Site During Soil Sample Collection

Field Operations & Lab Testing:

The site subsurface conditions were explored with two (2) soil sample sets taken inside the proposed footprint of the building. Boring depth was approximately 16 feet below ground surface.

The borings were advanced using a Geo-Probe direct push/hydraulic hammer system. Sample collection and field tests were performed in general accordance with ASTM procedures or other accepted methods.

Undisturbed samples of soils were obtained using a Macro Core sampling tube. The Macro Core sampling tube extrudes the sample into a clear PVC liner. The Liner is 1.5" in diameter and 48" in length. Four (4) samples of approximately 48" in length are collected for each bore hole. The samples are identified on the liner according to boring number and depth. Dynamic Cone Penetrometer tests are performed at the depth of the bore hole following the removal of each sample. After logging and visual inspection of the sample, it is sealed for transport to the lab.





Selected soil samples were tested in the laboratory to determine material properties for our evaluation. These tests include: Moisture content, percent passing the #200 sieve (wet sieve), Atterberg limits, Hydrometer particle size analysis, Pocket Penotrometer, and unconfined compressive strength. The laboratory testing was performed in general accordance with the ASTM procedures. The bore logs are located in Appendix B.

Results:

Dynamic Engineering Consultants use the TxDOT procedure Tex-124-E to determine the swell potential for the sub-grade soils. The procedure yields a Potential Vertical Rise (PVR) for the soil in terms of inches. The PVR is defined as the potential for soils to swell in the vertical direction at a given moisture, density, and loading when exposed to capillary ground or surface water, and thereby increases the elevation of the upper surface, along with anything resting on it. Reference Table 1 below for the PVR associated with this site.

								1 1 1								
Average Load [psi]	Liquid Limit (LL)	Dry 0.2LL+9	Wet 0.47LL+2	Percent Moisture	Dry Avg Wet		Plasticity Index (PI)	Percent Volume Swell	Percent Free Swell	PVR [in] Top of Layer	PVR [in] Bottom of Layer	Differenti al Swell [in]	Modified -No.40 Factor	Modified Density Factor	PVR in Layers [in]	Total PVR [in]
0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.67
2.0	31	15.2	16.6	15.2	Dry	95.0	9	1.2	3.9	0.00	0.21	0.21	0.95	1.00	0.20	0.47
6.0	21	13.2	11.9	11.9	Dry	95.0	18	4.1	7.0	0.46	0.87	0.41	0.95	1.00	0.39	0.09
10.0	28	14.6	15.2	14.6	Dry	95.0	16	3.5	6.3	0.63	0.70	0.07	0.95	1.00	0.07	0.02
14.0	24	13.8	13.3	13.3	Dry	95.0	14	2.8	5.6	0.70	0.73	0.03	0.95	1.00	0.02	0.00

The proposed residence will be constructed on a location with slightly expansive, sandy clay soil. The Potential Vertical Rise for the Site is 0.67". Reference the bore logs in Appendix B for soil descriptions and physical characteristics.

Foundation Recommendations:

Shallow Foundation

Slab on ground design with shallow continuous and spread footings as required by the design engineer. The slab on ground design will require quality controlled sub-grade preparation as discussed below. This type of foundation with the proper subgrade preparation could experience differential movements on the magnitude of 1". Reference the "Building Sub-grade Preparation" section of this report for additional requirements of a shallow foundation.

Shallow support systems are defined as foundations having shallow foundation components that do not extend below the moisture active zone of the soils and are subject to vertical movements due to volumetric changes of the soils.

• The allowable bearing capacity for shallow footings extending 1' to 3' below finished grade for this site is 2500 psf.





This is a shallow foundation system in which the grade beams and entire stiffened slab are supported directly by the underlying soils. The foundation is designed utilizing continuous stiffened beams & shallow spread footings to support the building loads & a continuous slab cast on the prepared sub-grade makes up the floor system. Beams can be added to stiffen the floor system. The stiffened beams and slab can be reinforced using conventional steel re-bar or post-tensioned cables. Grade beams must be supported by competent soils. Sub-grade and fill, if used, must be properly compacted and should be field-verified for conformance to geotechnical specifications. Grade-supported stiffened slabs should be designed in accordance with the WRI publication, *"Design of Slab-on-Ground Foundations"*, the ACI publication, *"Design of Slabs on Grade"*, ACI 360R, or the PTI publication, *"Design and Construction of Post-Tensioned Slabs-on-Ground"*. This type of shallow foundation has the potential to move 1" and therefore, the likelihood of cosmetic and/or functional defects is moderate. Cosmetic defects consist of small cracks in rigid construction components like gypsum board, brick, and rock that are caused by differential movements in the foundation. Functional defects consist of doors or windows that stick or are difficult to open due to the differential foundation movements. Reference Figure 2 for a sketch of a slab on ground foundation.

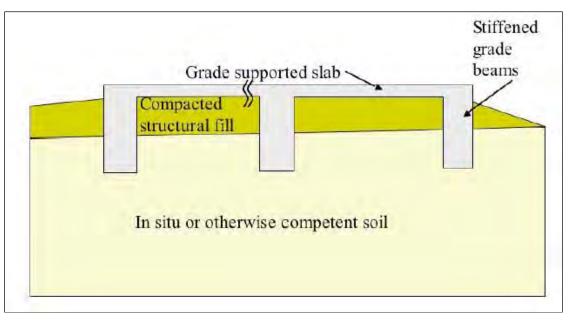


Figure 2: Stiffened Slab on Ground Foundation.

Deep Foundation:

Deep support systems are defined as foundations having deep components such as drilled piers or piles that extend well below the moisture active zone of the soils. They function to limit the vertical movements of the building by providing vertical support in a soil stratum that is not susceptible to movement caused by moisture fluctuations.





Drilled and Straight Shaft Concrete Piers:

Drilled piers are cast-in-place concrete foundation components that extend downward to a soil stratum capable of supporting the loads. Drilled concrete piers have also been referred to as drilled piers, drilled shafts, caissons, drilled caissons, foundation piers, and/or bored piles. The depth of the drilled pier should extend to a depth below the moisture active zone that is sufficient to anchor the pier against upward movements of swelling soils in the upper active zone. Reference Figure 3 for a sketch of a deep foundation system.

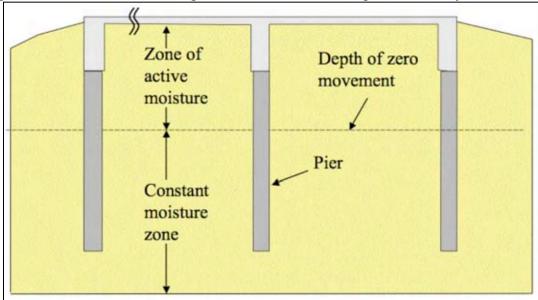


Figure 3: Deep Foundation with Straight-Shaft Piers.

Design Parameters for the straight shaft drilled concrete piers are listed below:

- Foundation piers a minimum of 14' below finished grade (finished grade is defined as the bottom of void form or bottom of slab if slab on ground option.)
- Piers need to be a minimum of 12" in diameter.
- Pier end bearing pressure = 5000 lb/ft^2
- Skin friction for uplift adhesion calculations = $\frac{1}{2}$ soil shear strength = 1250 lb/ft²
- Skin friction for bearing capacity calculations = ½ soil shear strength/ Factor of Safety of 3 = 1250 lb/ft²/3 = 416 lb/ft²
- Disregard skin friction on 1st 5' of shaft for bearing capacity calculations
- Movement Zone for upheave calculations is top 5'
- Minimum Pier Spacing = 2X base diameter measured from center to center of pier.
- Pier reinforcement shall consist of 1% of cross sectional area of pier shaft.
- Piers will need to be cased if water exceeds 6" in the bottom of the pier



Foundation Option 2: Stiffened Structural Slab with Deep Foundations:

This type of foundation system is a stiffened concrete slab that can bear on non-expansive select structural fill, with the stiffening grade beams spanning to deep foundations. The fill acts as a buffer zone between the expansive soils and the slab, reducing the potential differential movement of the foundation. The foundation is designed as a ribbed mat that is "stiffened" with relatively deep and closely spaced grade beams. The grade beams are laid out in a grid-like or "waffle" pattern and are designed with sufficient stiffness to reduce the bending deflection caused by shrinking or swelling soils. Sub-grade and fill, if used, must be properly compacted and should be field-verified for conformance to geotechnical specifications. The potential vertical movement for this type of foundation with proper sub-grade preparation is ¹/₂". The likelihood of cosmetic and/or functional defects for this type of foundation is low. Cosmetic defects consist of small cracks in rigid construction components like gypsum board, brick, and rock that are caused by differential movements in the foundation. Functional defects consist of doors or windows that stick or are difficult to open due to the differential foundation movements. Reference Figure 4 for a sketch of a slab on fill supported by a deep foundation system.

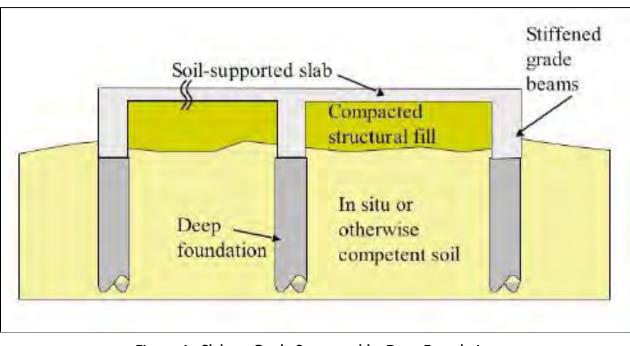


Figure 4: Slab on Grade Supported by Deep Foundation

Building Sub-grade Preparation:

A slab on ground design requires the reduction of the PVR to approximately 1". There are several options available to reduce the differential movement to an acceptable level such as: over excavate & replace with select fill, water or chemical injection, lime stabilization, or moisture conditioning. The recommended sub-grade preparation options for this slab on grade foundation design are listed below:



Sub-grade Preparation Option 1 (To Be Used in Conjunction with Foundation Options 1 and 2 Identified Above)

Undercut & and Replace with Select Fill

The process of undercut and replace consists of the over excavation of the footprint and removal of the surficial sandy clay in order for a specified amount of non-expansive select fill to be installed below the slab. The select fill shall be placed in moisture and density controlled lifts up to the finished grade. Reference the bulleted items below for detailed sub-grade preparation.

- Strip the site 6" to remove all top soil, roots, and deleterious material 5' beyond the perimeter of the foundation
- Next, cut and remove the existing soil 5' beyond the foundation perimeter to an elevation 2'-0" below the finished sub-grade elevation (bottom of floor slab). Extend the cut to 10' beyond the foundation perimeter at all doors including garage doors to prevent excessive differential movements between the foundation and flatwork (paving, sidewalks, etc.) Proof roll the stripped area to identify any soft or "pumping" soils. A pad foot roller or loaded tandem axle dump truck can be used for proof rolling and compaction. If soft areas are discovered, over-excavate and replace with moisture & density controlled select fill. Prior to the placement of any fill, scarify the surface to a depth of 12" and re-compact soil to 92% standard proctor density (ASTM D698) at a min of +3% above its optimum moisture content. Next, place the select fill as specified in the "Select Fill" section of this report to the desired sub-grade elevation. A minimum of 2'-0" of select fill shall be installed below the slab. All fill below the slab shall conform to the specifications of "Select Fill" as identified in this report.

Appurtenances such as walks, patios, drives, steps, etc. which abut the building need to be designed to accommodate possible differential movement between the appurtenances and the building.

A durable moisture barrier should be provided between the concrete building slab and the underlying soil subgrade. An intact membrane installed with lapped and sealed joints and all construction damage repaired will help to inhibit moisture migration from the sub-grade through the slab.

Sub-grade Preparation Option 2 (To Be Used in Conjunction with Foundation Options 1 and 2)

Mechanical Moisture Conditioning:

Mechanical Moisture Conditioning is a sub-grade movement reduction technique that pre-swells and recompacts the sub-grade to reduce the potential for vertical movement to an acceptable level of **1**". Mechanical Moisture Conditioning consists of excavating the onsite soils to a specified depth and then re-installing the removed onsite soil in controlled lifts at proper compaction and above optimum moisture content. The moisture





conditioned building pad will require the installation of a moisture control cap consisting of a min of **6**" of select fill.

Mechanical Moisture Conditioning Procedure:

- Clear and grub the site to remove all trees, vegetation, and root material
- Strip the site to a depth of 6" and a min of 5' beyond the foundation perimeter to remove all topsoil. This material is not to be used in the construction of the building pad.
- Next, excavate a level surface to a depth of **4'-0**" below the lowest existing elevation inside the footprint of the building and beyond the perimeter of the building **5'** to remove the existing soil. Scarify to a depth of **12**" and re-compact the exposed soil at the bottom of the excavation to 92% standard proctor compaction (ASTM D 698) at a minimum of +3% optimum moisture content.
- Re-install the removed onsite soils in lifts not exceeding **9**" in thickness. Compact to 92% standard proctor compaction (ASTM D 698) at a min of +3% optimum moisture content. Continue in level lifts until all removed soil is exhausted or an elevation of 6" below the finished sub-grade is achieved. In the event the soil is exhausted before the elevation of 6" below the finished sub-grade is achieved, additional select fill will be required. All import material shall meet the requirements of select fill.
- Add a minimum of 6" of select fill as specified in the "Select Fill" section of this report to achieve the desired sub-grade elevation.
- Field moisture & density testing is required during the entire moisture conditioning and select fill import operations to verify that the specified moisture and densities are achieved.

Appurtenances such as walks, patios, drives, steps, etc. which abut the building need to be designed to accommodate possible differential movement between the appurtenances and the building.

A durable moisture barrier should be provided between the concrete building slab and the underlying soil subgrade. An intact membrane installed with lapped and sealed joints and all construction damage repaired will help to inhibit moisture migration from the sub-grade through the slab.

Select Fill:

Select fill shall consist of homogeneous soils free of organic matter and rocks larger than four inches in diameter and possess an Atterberg plasticity index of 8 to 18, with a liquid limit of 35 or less. No more than 75% is allowed to pass the #200 sieve. The select fill used for this project shall be tested for compliance with the above requirements. The material should be placed in the following manner:

- 1. Prepare the subgrade in accordance with the recommendations discussed in a previous section of this report entitled Building Subgrade Preparation.
- 2. Place subsequent lifts of select fill in thin, loose layers not exceeding nine inches in thickness to the desired rough grade and compact to a minimum of 95 percent of the maximum density defined by ASTM D 698. Maintain moisture within -1 to +4% of theoretical optimum.





- 3. Conduct in-place field density tests at the following frequencies:
 - One test per 2500 square feet for every lift (minimum of 2 tests per lift) in building pad
 - One test per 8000 square feet per lift for mass grading
 - One test per 200 linear feet per lift for utilities

Note: Contact Dynamic Engineering Consultants to request a fee schedule for construction materials testing for this project.

- 4. Prevent excessive loss of moisture during construction.
- 5. For select fill placed above the existing ground line, extend the lateral limits of the fill at least five feet beyond the perimeter of the building area, transitioning back to the existing ground line on a 3:1 (horizontal/vertical) slope. All utility trenches shall have a clay "plug" installed at the perimeter of the foundation.

Groundwater Information:

Groundwater was not encountered during sample collection. Reference the bore logs for detailed groundwater information. If more detailed water level information is required, observation wells or piezometers could be installed at the site, and water levels could be monitored. It should be noted that groundwater level fluctuations may occur due to seasonal and climatic variations, alteration of drainage patterns, leaking utilities, land usage, and ground cover. We recommend that the contractor determine the actual groundwater levels at the site at the time of the construction activities.

Drainage and Grading:

The finished grade shall slope a minimum of 6" for the first 10' away from the perimeter of the foundation. Maintain a 2% grade where additional structures or other obstacles do not allow for the 10' slope. This will route water away from the perimeter footings and help reduce differential movement.

Walls Below Grade:

Walls below grade are subject to lateral pressures from soil and water. Active soils with plasticity sufficient to allow shrinkage and expansion also influence lateral earth pressures. Backfill should be free draining and surface water should be precluded from entering the free draining backfill. Fat clay soils should not be placed and compacted for backfill.

Stem walls for foundation support should be designed for "at rest" conditions because these features will be restrained at the top and bottom. In order for "active" earth pressures to develop, the supporting wall must deflect to a significant degree. Retaining walls experience this type of deflection and are to be designed to "active" conditions. Reference Table 3 for values of equivalent hydrostatic pressure for different types of soil.





Drained conditions represent soils above the water table which are prevented from saturation by surface drainage. Undrained conditions are for cases where the soil behind the wall is below the water table, or is subject to saturation by surface drainage.

Equivalent Hydrostat	ic Pressu	re (lbs/ft^2	per foot	t of wall
	heig	ht)		
Backfill	At	-Rest	A	ctive
	Drained	Undrained	Drained	Undrained
Fine Granular Soils - SM				
SC, ML, or CL if PI<25 &	75	105	45	90
-#200<75%				
Clay Soils - CL with PI>25	85	110	65	95
Or -#200>57%	60	110	60	95
Clay Soils – CH	120	130	120	130
Gravel, coarse sand, silt,				
& clay mixed - GM, GC,	60	100	35	80
SC, SM				
Washed, free draining				
gravel or sand - GP, GW,	50	90	30	80
SP, SW				

Table 1: Equivalent Hydrostatic Pressure (lbs/ft^2 per foot of wall height)

Report Limitations:

The recommendations submitted in this report, are based on the available subsurface information obtained by Dynamic Engineering Consultants and design details furnished by the owner for the proposed project. If there are any revisions to the plans for this project, or if deviations from the subsurface conditions noted in this report are encountered during construction, Dynamic Engineering Consultants should be notified immediately to determine if changes in the foundation recommendations are required. If Dynamic Engineering Consultants are not notified of such changes, we will not be responsible for the impact of those changes on the project.

The professional engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional engineering practices in the local area. No other warranties are implied or expressed.



After the plans and specifications are more complete, the geotechnical engineer should be retained and provided the opportunity to review the final design plans and specifications to check that our engineering recommendations have been properly incorporated into the design documents. At this time, it may be necessary to submit supplementary recommendations. If Dynamic Engineering Consultants are not retained to perform these functions, we will not be responsible for the impact of those conditions on the project. This report has been prepared for the exclusive use of City of Edgewood.

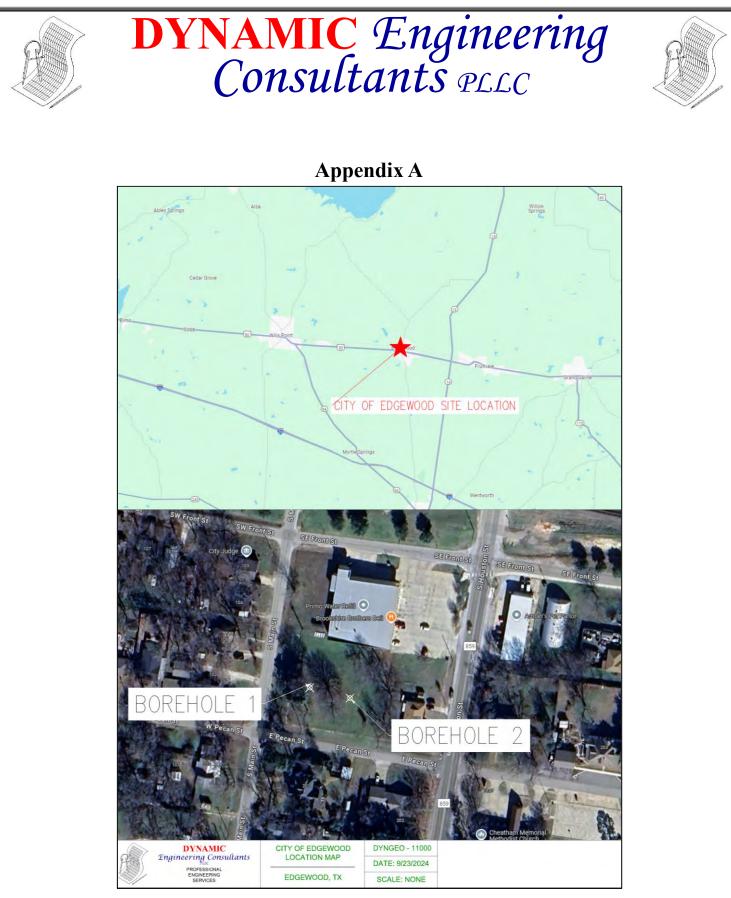


Figure A 1: Property Location & Bore Hole Map







Figure A 2: Picture of Borehole 1 Soil at the Lab







Figure A 3: Picture of Borehole 2 Soil at the Lab





Foundation Design in Expansive Soil:

Aside from supporting the building loads, the goal of structural foundation design in expansive soil areas should be to economically mitigate the detrimental effects of foundation movement. This can be done by either isolating elements of the foundation system from potential soil movements or by utilizing design methods and details that help to control the effects of the movement of the soil. Movements of expansive clay soils are generally restricted to an upper zone of soils known as the active zone. The lower boundary of this zone is commonly defined as the line of zero movement. The depth of the active zone varies from site to site. The challenge with designing building foundations on moderate to highly expansive clay soils is the potential detrimental effects of differential movements of the foundation structural elements due to volumetric changes of the underlying and surrounding soils. In simple terms, expansive clay soils swell and can cause heave with increasing soil moisture, or can dry out and cause subsidence with decreasing soil moisture. Movement of expansive soils is caused by fluctuations in the moisture content of soil particles. Because homogeneous expansive clay soils have very low permeability. fluctuations in the moisture content of the soils might normally be expected to occur over a very long period. However, permeability is increased with geotechnical phenomena such as ground faults, surface fractures due to desiccation of clavs, and decomposition of tree roots which cause fissures and cracks that become widely disseminated over time. Due to the repeated wetting, swelling, drying, and shrinking of the clay as it weathers, the fissures often fill with silt and sand, and create pathways for water that can exacerbate the infiltration process. Water can also easily move through naturally occurring sand strata, sand seams, and micro-cracks in clay soil caused by previous shrinkage. High negative pressures, also known as suction, in clay soils with low water content also increase the tendency for water to be absorbed into the clay. Environmental factors other than climatic conditions can also affect expansive soils. Water extraction by trees and other vegetation, a process known as transpiration, can cause soil shrinkage. Swelling can be a result of water infiltration into the soil from lawn irrigation systems, broken water pipes, flooded and leaking utility trenches, poor drainage, leaking swimming pools, or it can be a result of slow moisture replenishment and equalization after the removal of a tree. The combined effect and variability of all of these possibilities make it difficult to accurately predict expansive soil ground movements. Foundation movements are considered problematic only if they result in negative phenomena that detrimentally affect the performance or appearance of the building. The negative phenomena are considered to be structural if the load carrying capacity of the superstructure or foundation elements are affected, or are considered to be cosmetic if only the appearance of the exterior cladding or interior wall, floor, or ceiling finishes are affected. Negative phenomena can also affect the serviceability of the building, such as the opening or closing of doors. Negative phenomena due to foundation movement typically occur because of differential movements between various parts of the building. Differential movements often lead to high internal stresses in building components resulting as distress in the form of cracks, splitting, bending, buckling, or separations in the exterior cladding systems such as brick, cement-board panels, or in the interior finishes such as gypsum drywall panels, wood paneling, and flooring.





Foundations and Risks:

Many lightly loaded foundations are designed and constructed on the basis of economics, risks, soil type, foundation shape, and structural loading. Many times, due to economic considerations higher risks are accepted in foundation design. Most of the time, the foundation types are selected by the owner/builder. It should be noted that some levels of risk are associated with all types of foundations, and there is no such thing as a zero risk foundation. All of these foundations must be stiffened in the areas where expansive soils are present and trees have been removed prior to construction. It should be noted that these foundations are not designed to resist soil and foundation movements as a result of sewer/plumbing leaks, excessive irrigation, poor drainage, and water ponding near the foundation system. The following list consists of the foundation types typically used in our area in order of decreasing cost and increasing risk:

- Structurally Isolated Slab with Deep Foundation (Isolated Floor System)
 - Piers located below moisture active zone (constant suction)
 - Void Form Slab
 - Pier & Beam with Crawl Space
 - Suited for extreme differential movement
 - Expansive soils
 - Tree Removal
 - Properly Compacted Fill is Not Required
- Floating (Stiffened) Slab-On-Fill with Deep Foundation
 - Piers located below moisture active zone (constant suction)
 - Suitable for expansive soils
 - Conventionally reinforced or Post-Tensioned Slab
 - Piers are not connected to grade beams with steel
 - Slab may move up in the presence of expansive soil (Floating Slab)
 - Slab cannot move down because of piers
- Floating Slab Foundation
 - No Piers
 - Suitable for expansive soils
 - Must Be Significantly Stiffened to minimize effects of diff. movement
 - Properly Compacted Fill under entire slab
 - May require cut & fill or other PVR reduction techniques.
 - Bearing is on beams and slab
 - Slab is not designed to span between grade beams
 - Requires Proper Drainage & Vegetation control
 - Very important for shallow foundations
 - Common in Texas for lightly loaded structures
 - Conventionally reinforced or Post-Tensioned Slab





Moisture Control Systems:

Moisture control systems mitigate damage by controlling the amount of water and moisture that enter into the site soils. This includes methods to control storm water runoff and methods of providing irrigation to site vegetation.

Site Drainage Systems:

Three methods of controlling site drainage include site grading, subsurface drains, and area drains. These systems reduce vertical movements of building foundations by moderating the effects of seasonal moisture changes.

Site Grading:

Site grading causes excess water to flow away from the foundation via surface sloping and drainage swales. Adequate surface drainage slopes are essential to minimize foundation movement and damage. Current International Building Code requires 6" minimum fall the first 10' out from and perpendicular to building walls, and 2% minimum elsewhere to drain off lot. Because current building practices sometimes have structures built closer than 10' to the adjacent structure or lot line, it is necessary to have greater slopes so that the 6" minimum is maintained.

Subsurface Drains:

French drains, also called tile drains, or backwall drains, are subsurface drainage systems that are used around the perimeter of a foundation to remove free water in the subsoil. This type of drainage system helps reduce moisture infiltration from underground water sources. They are often used for removing moisture from behind retaining and basement walls and usually consist of a 4" or larger PVC perforated pipe, wrapped with filter fabric, covered with sand and gravel, and sloped to a positive outlet.

Area Drains:

Area drains (catch basins) with non-perforated pipe are surface collection systems used around the perimeter of a foundation to remove surface water by gravity flow or mechanical lifting.

Moisture Retarder Systems:

Moisture retarder systems are used to reduce moisture transfer to the soils underneath foundations. Such systems include horizontal moisture retarders and vertical moisture retarders. These systems help moderate effects of seasonal changes on foundation movements.

Horizontal Moisture Retarders:

Horizontal moisture retarders usually consist of materials of low permeability. These systems extend outward around the edges of the foundation. Sidewalks, driveways, or parking lots can be multifunctional, also serving as moisture retarders if properly sloped away from the foundation.

Vertical Moisture Retarders:





Vertical moisture retarders usually consist of materials of low permeability that extend downward from grade level around the perimeter of the foundation.

Watering Systems:

Watering systems are usually used to induce moisture into the soils and to water vegetation around the foundation, thereby attempting to provide a constant and uniform moisture condition. During droughts, water can be rationed, preventing use of these systems. A soil moisture sensor with automatic controls is recommended with these watering systems.

Sprinkler Systems: An irrigation system consists of below grade piping and above grade sprinkler heads.

Soaker Hose Systems:

Soaker hoses are permeable water conduits resembling garden hoses normally used to water localized areas.

Under-Slab Watering Systems:

Under-slab watering systems are installed under slabs to provide moisture directly below the foundation. These systems typically consist of a network of piping, wells, and moisture sensors, which are intended to function together to maintain a uniform level of moisture in the soil beneath the structure.

Drip Watering Systems: Drip irrigation slowly applies water to soil under low pressure through emitters, bubblers, or spray heads placed at each plant.

Vegetation Control System:

Vegetation control systems mitigate damage by providing some control over the growth of roots that can penetrate into unwanted areas and cause shrinkage of foundation soils by means of water withdrawal through the transpiration process.

Root Retarder Systems:

Root retarder systems are typically physical or chemically induced barriers that limit the growth direction of the roots of trees, shrubbery, and other large plants.

Vertical Root Retarders:

Vertical root retarders are vertical barriers that are installed in the ground adjacent to the perimeter of a foundation or around a tree or other large plant.

Horizontal Root Retarders:





Horizontal root retarders are horizontal barriers that are installed on top of the ground adjacent to the perimeter of a foundation or around a tree or other large plant.

Root Watering Wells:

Root watering wells are installed near trees to provide moisture below grade. These systems typically consist of a drilled hole filled with coarse material. Piping can be inserted in the holes in order to maintain a clear path for water access.

Tree and Plant Selection:

When doing the initial site landscaping design, the proper selection of site vegetation with regard to tree and plant moisture requirements can directly affect future foundation performance. Vegetation selection can also be a deciding factor in the selection of other moisture and vegetation control system design options.

Trees should not be planted within half of their mature height of a shallow, ground supported foundation without a vegetation control system in place.

Unified Soil Classification System:

This soil system is based on the recognition of the type and predominance of the constituents, considering grain size, gradation, plasticity index, and liquid limit.

It contains three major divisions of soils:

- Coarse-grained
- Fine-grained
- Highly organic

The group symbols for each major soil division are located In Table A1. Some soils have characteristics of two groups because they are close to the borderline between the groups either in percentage of the various grain sizes or in plasticity characteristics. In cases like these, use the two group symbols, connected by a hyphen, which most nearly describe the soil. An example of this might be a SM-SC. This would be a sand, which has silt and clay binder. Those soils that are not readily identifiable in the field and the proper soil symbol designated necessitate sieve analysis and Atterberg limits tests. From these test results, the proper soil symbol can be determined.





Table A 1: Unified Soil Classification System UNIFIED SOIL CLASSIFICATION SYSTEM

		UN.	IFIED SOIL C	LASSILIC	ATION SYSTEM
	MA	JOR DI	VISIONS	GROUP SYMBOLS	DESCRIPTIONS
0		oarse ed on	Clean Gravels	GW	Well Graded Gravels, Gravel – Sand Mixtures, Little or no Fines
) Sfev	GRAVELS	Half C etalre Sieve	(Little or no Fines)	GP	Poorly Graded Gravels, Gravel - Sand Mixtures, Little or no Fines
GRAINED SOILS Retained on 200 Sfeve	GRA	More Than Half Coarse Fraction Retained on No. 4 Sieve	Gravels With Fines	GM	Silty Gravels. Gravel-Sand-Silt Mixtures
ai ned		More Frac	(Appreciable Fines)	GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
		odrse s q	Clean Sands	SW	Well Graded Sands, Gravelly Sands, Little or no Fines
COARSE Than Half	SANDS	More Than Half Coarse Fraction Passes a No. 4 Sleve	(Little or no Fines)	SP	Poorly Graded Sands, Gravelly Sands, Little or no Fines
More Tho	SA	action No. ₄	Sands With Fines	SM	Silty Sands, Sand – Silt Mixtures
Mol		More	(Appreciable Fines)	SC	Clayey Sands, Sand - Clay Mixtures
Sieve		CLAYS	mit 50	ML	Inorganic Silts & Very Fine Sands, Silty or Clayey Fine Sands, Clayey Silts
ILS 200 Si		SILTS and CLAYS	Liquid Limi† Less Than 50	CL	Inorganic Clays of Low to Medium Plasticity, Lean Clays
INED SO Passes		SILT	L-I-	OL	Organic Silts & Organic Silty Clays of Low Plasticity
FINE GRAINED SOILS Than Haif Passes 200		CLAYS	ni† an 50	MH	Inorganic Silts, Fine Sand or Silty Soils, Elastic Silts
More Tha		SILTS and CLAYS	Liquid Limit Greater Than 50	СН	Inorganīc Clays of High Plasticity, Fat Clays
Ŵ		SILT	Grea	ОН	Organic Clays of Medium to High Plasticity, Organic Silts
	Hīgh	nly Org	anic Soils	ΡT	Peat and Other Highly Organic Soils





Table A2 shows the relationship between particle size and soil classification. Sieve and Hydrometer analysis can be used to determine the percentage of different particle sizes that exist in a sample.

Table A 2: USCS Particle Size and Classification

	Unified	d Soil Size Classificat	ion
Millimeters	Inches	U.S. Standard Sieve Size	Particle Size
256 and above	12 and above		Boulder
72-256	3-12		Cobble
19-75	³ /4-3		Coarse Gravel
4.75-19	3/16-3/4	3/16"=4	Fine Gravel
2.4-4.75	3/32-3/16	3/32"=10	Coarse Sand
.42-2.4		.42mm=40	Medium Sand
.07442		.074mm=200	Fine Sand
.005074			Silt
.005 and below			Clay

Tables A3 and A4 use measurable attributes of soil such as Standard Penetration Test, Un-confined Compression Test results, and simple field tests to determine the descriptive terms for the soil sampled.

Table A 3: Terms for Soil Consistency

		Soil Consistency	y Terms		
Coarse Grained Soils		Fine Grained Soils			
Descriptive	No. Blows/ft (SPT)	Descriptive Terms	No. Blows/ft (SPT)	Unconfined Compression	
Terms				Tons/ft^2	
Very Loose	0-4	Very Soft	<2	<.25	
Loose	4-10	Soft	2-4	.2550	
Medium Dense	10-30	Medium Stiff	4-8	.50-1.0	
Dense	30-50	Stiff	8-15	1.0-2.0	
Very Dense	>50	Very Stiff	15-30	2.0-4.0	
		Hard	>30	>4	





 Table A 4: Thumb Penetration Resistance for Determining Soil Consistency Terms.

Penetration Resistance and Unconfined Compression Strength

Consistency	Field Identification	Unconfined Compressive Strength tons/ft²
Very soft	Easily penetrated several inches by fist	Less than 0.25
Soft	Easily penetrated several inches by thumb	0.25-0.5
Medium	Can be penetrated several inches by thumb with moderate effort	0.5–1.0
Stiff	Readily indented by thumb, but penetrated only with great effort	1.0-2.0
Very stiff	Readily indented by thumbnail	2.0-4.0
Hard	Indented with difficulty by thumbnail	over 4.0

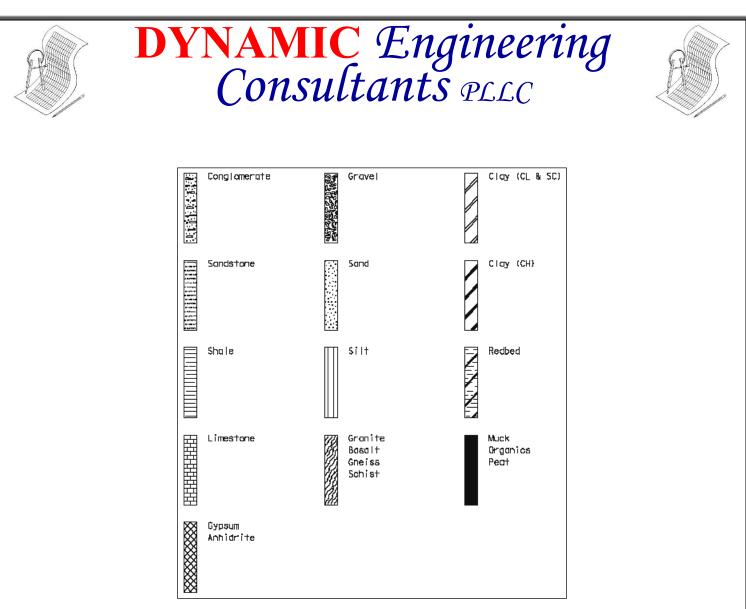
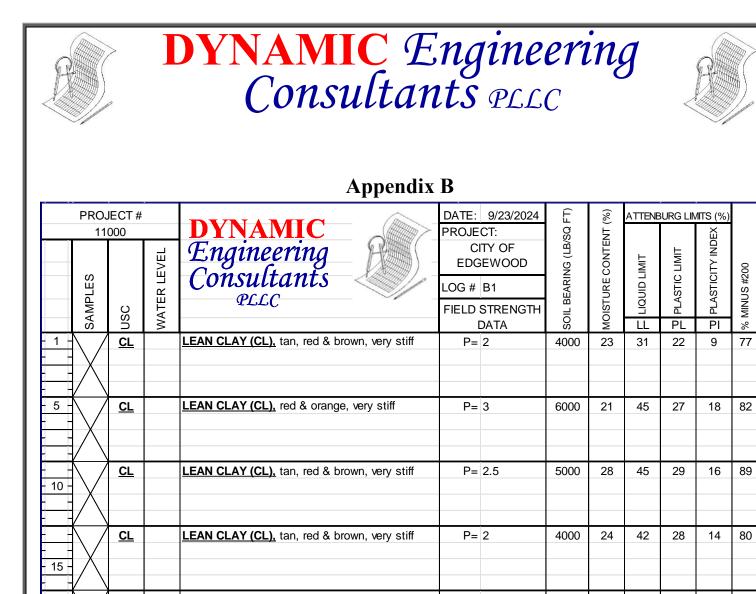


Figure A 4: Symbol for USCS Soil Classifications.



Table A 5: Terms Characterizing Soil Structure.

Slickensided	Having inclined planes of weakness that are slick and glossy in				
Silckensided	appearance.				
Fissured	Containing shrinkage cracks, frequently filled with fine sand or silt.				
rissuleu	Usually vertical.				
Laminated	Composed of thin layers of varying color and texture, usually grading				
Lammateu	from sand or silt at the bottom to clay at the top.				
Crumbly	Cohesive soils which break into small crumbs upon drying.				
Calcareous	Containing appreciable quantities of calcium carbonate. Usually				
Calcareous	nodular.				
Well Graded	Having wide range in grain sizes and substantial amounts of all				
Well Graded	intermediate particle sizes.				
Boorly Craded	Predominantly of one grain size (uniformly graded) or having a range				
Poorly Graded	of sizes with some intermediate size missing (gap or skip graded).				



KEY TO ABBREVIATIONS

D=DYNAMIC PENOTROMETER (BLOWS/1.75")

N=SPT DATA (BLOWS/FT)

T=TORVANE (TSF)

P=POCKET PENOTROM ETER (TSF)

20

WATER LEVEL:

ESTIMATED

MEASURED

PERCHED

 $\overline{\mathbf{V}}$

V

NONE

NOTES: Boring

terminated @ 16' depth





		ECT #	•	DYNAMIC	DATE: PROJE	9/23/2024 CT:	SQ FT)	NT (%)	ATTENE	BURG LIN		
	SAMPLES	usc	WATER LEVEL	DYNAMIC Engineering Consultants PLLC	EDC LOG # FIELD	STRENGTH	soil Bearing (LB/SQ	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	% MINUS #200
1	S /	് CL	N	LEAN CLAY (CL), tan, grey, red & orange, very stiff	-	DATA 1.75	ගි 3500	≚ 27	LL	PL	PI	%
 	X			LEAN CLAT (CL), tan, grey, red & orange, very stin	F=	1.75	3500	21				
- 5 -	X	<u>CL</u>		LEAN CLAY (CL), tan, grey, red & orange, very stiff	P=	2.5	5000	23				
- 10 -	\mathbf{X}	<u>CL</u>		LEAN CLAY (CL), tan, grey, red & orange, very stiff	P=	2.25	4500	26				
 - 15 -	$\left \right\rangle$	<u>CL</u>		LEAN CLAY (CL), tan & red, very stiff	P=	3.5	7000	26				
- 20 -	$\left \right\rangle$											
			NONE			KEY TO ABBRE	VIATIONS			S: Bori		
MEAS	IATED SURED CHED	⊳¦i≽¦i≽¦i			P=POCKET	TA (BLOWS/FT) PENOTROMETER (IC PENOTROMETEF NE (TSF)		75")	termin	ated @	16' dej	pth

For vendor doing business with local governmental entity	FORM CI
his questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.	OFFICE USE ONLY
his questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who as a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the endor meets requirements under Section 176.006(a).	Date Received
y law this questionnaire must be filed with the records administrator of the local governmental entity not later an the 7th business day after the date the vendor becomes aware of facts that require the statement to be ed. See Section 176.006(a-1), Local Government Code.	
vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An fense under this section is a misdemeanor.	
Name of vendor who has a business relationship with local governmental entity.	
Check this box if you are filing an update to a previously filed questionnaire. (The law re completed questionnaire with the appropriate filing authority not later than the 7th busines you became aware that the originally filed questionnaire was incomplete or inaccurate.	ss day after the date on which
Name of local government officer about whom the information is being disclosed.	
Name of Officer	
A. Is the local government officer or a family member of the officer receiving or I other than investment income, from the vendor?	ikely to receive taxable income
other than investment income, from the vendor?	t income, from or at the direction
Other than investment income, from the vendor? Yes No B. Is the vendor receiving or likely to receive taxable income, other than investmen of the local government officer or a family member of the officer AND the taxable	t income, from or at the direction
Other than investment income, from the vendor? Yes No B. Is the vendor receiving or likely to receive taxable income, other than investmen of the local government officer or a family member of the officer AND the taxable local governmental entity?	t income, from or at the direction income is not received from the maintains with a corporation or officer or director, or holds an
Other than investment income, from the vendor? Yes No B. Is the vendor receiving or likely to receive taxable income, other than investmen of the local government officer or a family member of the officer AND the taxable local governmental entity? Yes No Describe each employment or business relationship that the vendor named in Section 1 m other business entity with respect to which the local government officer serves as an covenership interest of one percent or more. Check this box if the vendor has given the local government officer or a family member	t income, from or at the direction income is not received from the maintains with a corporation or officer or director, or holds an

CONFLICT OF INTEREST QUESTIONNAIRE For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at http://www.statutes.legis.state.tx.us/ Docs/LG/htm/LG.176.htm. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

(A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;

(B) a transaction conducted at a price and subject to terms available to the public; or

(C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds \$2,500 during the 12-month period preceding the date that the officer becomes aware that

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than \$100 in the 12-month period preceding the date the officer becomes aware that:

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

(1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);

(2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or

(3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

(A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

(A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.