ENTECH
ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, CO 80907
PHONE (719) 531-5599

SUBSURFACE SOIL INVESTIGATION
225 NORTH CURTIS ROAD
EL PASO COUNTY, COLORADO

Prepared for:
T-Bone Construction
1310 Ford Street
Colorado Springs, CO 80915

Attn: Daniel Hurney

July 28, 2023

Respectfully Submitted,

ENTECH ENGINEERING, INC.

Logan L. Langford, P.G.
Geologist

Reviewed by:

COLORADO LICENSED
JOSEPH C GOODE III
52381
PROFESSIONAL ENGINEER

Digitally signed by Joseph C Goode III
Date: 2023.07.28 10:15:43 -06'00'

Joseph C. Goode III, P.E.
Project Engineer

LLL:JCG/

Table of Contents

Tables

Figures

List of Appendices

1 INTRODUCTION

Entech Engineering Inc. (Entech) participated on this project as a subconsultant to T-Bone Constructions for the proposed construction of a new office/warehouse building for City Link Trucking with a gravel parking lot and other associated site improvements at 225 North Curtis Road. The site is located south of State Highway 94 and North Curtis Road in El Paso County, Colorado. The approximate location of the project site is shown on the Vicinity Map, Figure 1.

This report describes the subsurface investigation conducted for the planned structure and provides recommendations for foundation design and construction. The Subsurface Soil Investigation included the drilling of three test borings, spaced across the site, with two borings drilled in the footprint of the building and one was drilled in the parking and drive areas, collecting samples of soil, and conducting a geotechnical evaluation of the investigation findings. All drilling and subsurface investigation activities were performed by Entech. The contents of this report, including the geotechnical evaluation and recommendations, are subject to the limitations and assumptions presented in Section 5.

2 PROJECT AND SITE DESCRIPTION

The project will consist of the construction of a new office/warehouse building for City Link Trucking with a gravel parking lot and other associated site improvements with no below grade basement. At the time of drilling, the property for the proposed structure was vacant with fill stockpiles/windrows, and pastureland vegetated with field grasses and weeds. The topography of the site gradually slopes to the southeast. Building loads are expected to be light to moderate. The site is bordered by vacant land with Curtis Road to the west, and a mobile home park to the south.

3 SUBSURFACE EXPLORATIONS AND LABORATORY TESTING

Subsurface conditions in the planned building site were explored by three test borings, designated TB-1 through TB-3, spaced at the approximate locations shown on Site and Exploration Plan, Figure 2. TB-1 and TB-2 were drilled to depths of 20-feet below existing ground surface (bgs) in the footprint of the proposed building and TB-3 was drilled to 10-feet bgs in the parking and drive areas for general construction recommendations. The drilling was performed using a truck-mounted drill rig utilizing continuous flight auger techniques, supplied and operated by Entech. Descriptive boring logs are presented in Appendix A providing lithologies of the subsurface

conditions encountered during drilling. Groundwater levels were measured in each of the open boreholes at the conclusion of drilling and 24 hours subsequent to drilling.

Soil and bedrock samples were obtained from the borings utilizing the Standard Penetration Test (ASTM D-1586) using a split-barrel California sampler. Results of the Standard Penetration Test (SPT) are included on the boring logs in terms of N-values expressed in blows per foot (bpf). Soil and bedrock samples recovered from the borings were visually classified and recorded on the boring logs. The soil and bedrock classifications were later verified utilizing laboratory testing and grouped by soil type. The soil and bedrock type numbers are included on the boring logs. It should be understood that the soil and bedrock descriptions shown on the boring logs may vary between boring location and sample depths. It should also be noted that the lines of stratigraphic separation shown on the boring logs represent approximate boundaries between soil and bedrock types and the actual stratigraphic transitions may be more gradual or variable with location.

Water content testing (ASTM D-2216) was performed on the samples recovered from the borings, and the results are shown on the boring logs. Grain-Size Analysis (ASTM D-422) and Atterberg Limits testing (ASTM D-4318) were performed on selected samples to assist in classifying the materials encountered in the borings. Volume change testing was performed on selected samples using the Swell/Consolidation Test (ASTM D-4546) in order to evaluate potential expansion characteristics of the soil and bedrock. Soluble sulfate testing was performed on select soil samples to evaluate the potential for below grade degradation of concrete due to sulfate attack. The laboratory testing results are presented in Appendix B and summarized on Table B-1.

4 SUBSURFACE CONDITIONS

4.1 Soil and Bedrock

Two primary soil types were encountered in the test borings drilled for the subsurface investigation. Each soil type was classified in accordance with the Unified Soil Classification System (USCS) using the laboratory testing results and the observations made during drilling.

Soil Type 1 classified as native clay with sand and sandy clay (CL). The stiff to hard clay was encountered in all of the test borings below 6 inches of topsoil and extended to depths of 13 to 14 feet bgs or to termination of TB-1 and TB-2 at 10 to 20 feet. Swell/Consolidation Testing on samples of sandy clay resulted in a volume change of 0.6.

Soil Type 2 classified as native silty sand and clayey sand (SM, SC). The dense sand was encountered in two of the test borings at 13 to 14 feet and extending to 17 feet or to termination of TB-2 at 20 feet bgs. Swell/Consolidation testing on the clayey sand resulted in volume change of 0.3 percent.

4.2 Groundwater

Depth to groundwater was measured in each of the borings at the conclusion of, and subsequent to drilling. Groundwater was not encountered in the test borings which were drilled to 10 to 20 feet. It should be noted that groundwater levels could change due to seasonal variations, changes in land runoff characteristics and future development of nearby areas.

5 GEOTECHNICAL EVALUATION AND RECOMMENDATIONS

The following discussion is based on the subsurface conditions encountered in the borings drilled in the planned building footprint. If subsurface conditions different from those described herein are encountered during construction or if the project elements change from those described, Entech Engineering, Inc. should be notified so that the evaluation and recommendations presented can be reviewed and revised if necessary.

As discussed in Section 2, we understand that the site will be developed with the construction of a pre-engineered metal office/warehouse building founded on shallow foundations with no basement. We understand that the grades will be raised as much as 5 feet in the southeast corner of the building and 1 foot in the northwest corner of the building. Expansive subgrade materials were encountered in the borings, therefore we recommend that the building be founded on 3-feet of imported granular fill.

5.1 Shallow Foundations

Due to the cohesive, expansive soils encountered on this site, a shallow foundation system would not be expected to perform adequately if it was to rest on the soils in their in-situ condition. To reduce the potential for swell related movement, the foundation subgrade should be founded on a minimum of 3 feet of imported granular fill beneath all foundation components. The zone of overexcavation should include the entire building footprint and extend 3 feet beyond the building perimeter. Based on preliminary grading plans, an overexcavation will be required, particularly in the northwest corner of the proposed building, and should be prepared as discussed in Section 6.1.

A maximum allowable bearing pressure of 2,400 pounds per square foot (psf) is recommended for the imported, compacted granular fill (Section 6.1.2 and 6.1.3). Shallow foundations shall not be placed on uncontrolled fill or site cohesive soils. Actual bearing capacity will be determined at the time of the open excavation observation (Section 6.7).

For design, continuous spread footings are recommended to have a minimum width of 16 inches, and individual column footings for main support beams should have minimum plan dimensions of 24 inches on each side in order to avoid punching failure into the supporting subgrade soils. Exterior footings should extend a minimum of 30 inches below the adjacent exterior site grade for frost protection.

Foundation walls should be designed to resist lateral pressures generated by the soils on this site. An equivalent hydrostatic fluid pressure (in the active state) of 40 pcf is recommended for the imported granular soils. Clay soils such as those encountered on this site are not recommended for backfill against the walls. It should be noted that this value applies to level backfill conditions. If sloping backfill conditions exist, pressures will increase substantially depending on the conditions adjacent to the walls. Surcharge loading should also be considered in wall designs. Equivalent fluid pressures for sloping conditions should be determined on an individual basis.

5.2 On-Grade Floor Slabs

On-grade floor slabs for the planned structures should be supported on 3-feet of compacted, non-expansive, granular fill prepared in accordance with Section 6.1.1. Any loose soils or uncontrolled fill encountered will require removal according to Section 6.1.1.

Grade supported floor slabs should be separated from other building structural components and utility penetrations to allow for possible future vertical movement. Interior partition walls should be constructed in such a manner so as not to transfer slab movement into the overlying floor(s) and/or roof members, should slab movement occur. Control joints in grade-supported slabs are recommended at 10 to 15-foot perpendicular spacings to control cracking. If slab movement cannot be tolerated a structural floor system should be used.

5.3 Seismic Site Classification

Based on the subsurface conditions encountered at the site and in accordance with Section 1613 of the 2015 International Building Code (IBC), the site meets the conditions of a Site Class D.

5.4 Surface and Subsurface Drainage

Positive surface drainage is recommended around the building's perimeter to minimize infiltration of surface water into the supporting foundation soils. A minimum ground surface slope of 5 percent in the first 10 feet adjacent to exterior foundation walls is recommended for unpaved areas. For paved areas and other impervious surfaces, a minimum slope of 2 percent is adequate. All roof drains and gutter downspouts should be extended to discharge well beyond the building's foundation backfill zone or be connected to a storm sewer system.

To help minimize infiltration of water into the foundation zone, vegetative plantings placed close to foundation walls should be limited to those species having low watering requirements and irrigated grass should not be located within 5 feet of the foundation. Similarly, sprinklers are not recommended to discharge water within 5 feet of foundations. Irrigation near foundations should be limited to the minimum amount sufficient to maintain vegetation. Application of more irrigation water than necessary can increase the potential for slab and foundation movement.

Subsurface perimeter drains are recommended around the entire structure at the base of the overexcavation. A typical perimeter drain detail is shown in Figure 3.

6 CONSTRUCTION RECOMMENDATIONS

6.1 Earthwork Recommendations for Structures

6.1.1 Subgrade Preparation

Foundations and on-grade floor slabs may be placed on a 3-foot-thick uniform pad of imported granular fill. The fill will require an overexcavation to be completed to a depth of 3 feet below the bottom of proposed footings and 3 feet below the bottom of slab elevation. Once the final overexcavation depth is reached, the subgrade should be scarified a minimum of 12 inches, moisture conditioned to 0/+3% of optimum moisture, and recompacted to 95% of its maximum Standard Proctor Dry Density ASTM D-698. Imported granular fill should then be placed and compacted in accordance with Section 6.1.2 and 6.1.3. Overexcavations should extend laterally beyond planned footings a minimum distance equal to the depth below planned footings (e.g. the 3 foot overexcavation should extend 3 feet beyond the edge of the foundation).

Uncontrolled fill or loose soil encountered at the base of the overexcavation will require removal to suitable, dense underlying soils and replacement with granular fill.

6.1.2 Granular Fill

Granular fill placed beneath foundation components and floor slabs shall consist of non-expansive, granular soil, free of organic matter, unsuitable materials, debris and cobbles greater than 3-inches in diameter. Entech should approve any imported granular fill to be used within the foundation area prior to delivery to the site.

6.1.3 Fill Placement and Compaction

All granular fill placed within the foundation area should be compacted to a minimum of 95 percent of the soils maximum dry density as determined by the Modified Proctor Test (ASTM D-1557). Fill material should be placed in horizontal lifts such that each finished lift has a compacted thickness of six inches or less. Fill should be placed at water contents conducive to achieving adequate compaction, usually within ±2 percent of the optimum water content as determined by ASTM D-1557. Mechanical methods can be used for placement and compaction of fill; however, heavy equipment should be kept at a distance from foundation walls and below slab infrastructure to avoid overstressing. No water flooding techniques of any type should be used for compaction or placement of foundation or floor slab fill material.

Fill placement and compaction beneath and around foundations should be observed and tested by Entech during construction. Density tests should be performed frequently to verify compaction with the first density test performed at the overexcavated subgrade elevation and with additional testing once each 12 to 18 inches of granular fill have been placed.

6.2 Utility Trench Backfill

Fill placement and compaction in utility trenches, should be observed and tested by Entech during construction. Fill placed in utility trenches should be compacted according to local specifications. Fill should be placed in horizontal lifts having a compacted thickness of six inches or less and at a water content conducive to adequate compaction, within ±2 percent of optimum water content. Mechanical methods should be used for fill placement; however, heavy equipment should be kept at a distance from foundation walls. No water flooding techniques of any type should be used for compaction or placement of utility trench fill.

Trench backfill placement should be performed in accordance with El Paso County specifications. All excavation and excavation shoring/bracing should be performed in accordance with OSHA guidelines.

6.3 General Backfill

Any areas to receive general grading fill should have all topsoil, organic material, and debris removed. Fill must be properly benched into existing slopes in order to be adequately compacted. The fill receiving surface should be scarified to a depth of 12-inches and moisture conditioned to ±2 percent of the optimum water content, and compacted to a minimum of 95 percent of the ASTM D-1557 maximum dry density before the addition of new fill. Fill should be placed in thin lifts not to exceed 6 inches in thickness after compaction while maintaining at least 95 percent of the ASTM D-1557 maximum dry density. Fill material should be free of vegetation and other unsuitable material and shall not contain cobbles or fragments greater than 3-inches. Topsoil and strippings should be segregated from all other fill sources on the site. Fill placement and compaction beneath and around foundations, in utility trenches, beneath roadways or other structural features of the project should be observed and tested by Entech during construction.

6.4 Excavation Potential

Excavation of the site soils should be feasible with rubber-tired equipment. Excavation Stability

Excavation sidewalls must be properly sloped, benched and/or otherwise supported in order to maintain stable conditions. All excavation openings and work completed therein shall conform to OSHA Standards as put forward in CFR 29, Part 1926.650-652, (Subpart P).

6.5 Concrete Degradation Due to Sulfate Attack

Sulfate solubility testing was conducted on several samples recovered from the test borings to evaluate the potential for sulfate attack on concrete placed below surface grade. The test results indicated less than 0.01 and 0.00 percent soluble sulfate (by weight). The test results indicate the sulfate component of the in-place soils presents a negligible exposure threat to concrete placed below the site grade.

Type II cement is recommended for concrete on the site. To further avoid concrete degradation during construction it is recommended that concrete not be placed on frozen or wet ground. Care should be taken to prevent the accumulation or ponding of water in the foundation excavation prior to the placement of concrete. If standing water is present in the foundation excavation, it should be removed by ditching to sumps and pumping the water away from the foundation area prior to concrete placement. If concrete is placed during periods of cold temperatures, the concrete must be kept from freezing. This may require covering the concrete with insulated blankets and adding heat to prohibit freezing.

6.6 Winter Construction

In the event construction of the planned facility occurs during winter, foundations and subgrades should be protected from freezing conditions. Concrete should not be placed on frozen soil and once concrete has been placed, it should not be allowed to freeze. Similarly, once exposed, the foundation subgrade should not be allowed to freeze. During site grading and subgrade preparation, care should be taken to eliminate burial of snow, ice or frozen material within the planned construction area.

6.7 Foundation Excavation and Construction Observation

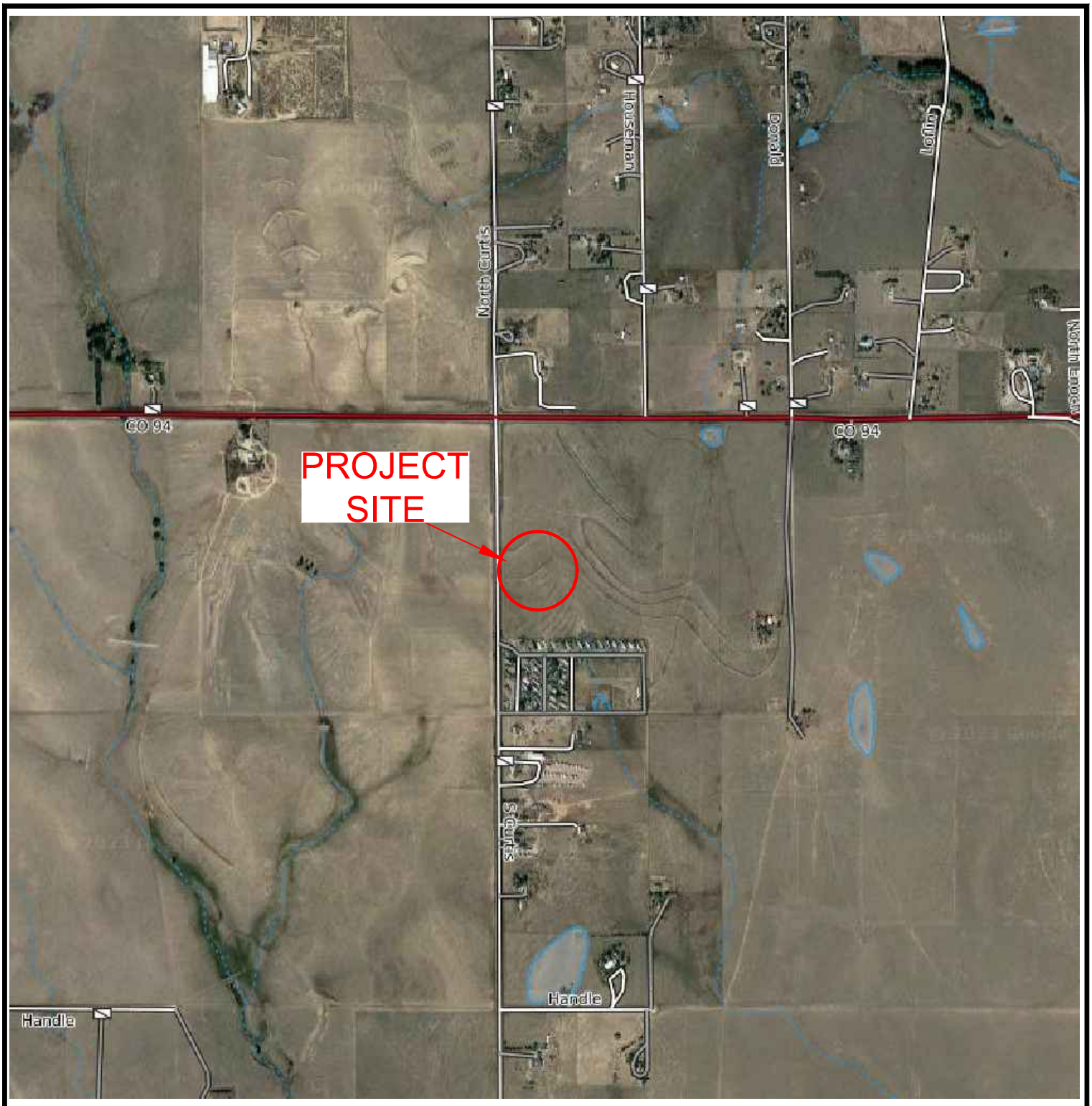
Subgrade preparation for building foundations should be observed by Entech prior to construction of the footings and floor slabs in order to verify that (1) no anomalies are present, (2) materials similar to those described in this report have been encountered or placed, and (3) no soft spots, expansive or organic soil, or debris are present in the foundation area prior to concrete placement or backfilling. Entech should make final recommendations for overexcavation, if required, and foundation drainage at the time of excavation observation, if necessary.

In addition, Entech should observe and document placement and compaction of utility bedding and trench backfill.

7 CLOSURE

The subsurface investigation, geotechnical evaluation and recommendations presented in this report are intended for use by T-Bone Construction, Inc. with application to the planned pre-engineered metal office/warehouse building, located at 225 North Curtis Road in El Paso County, Colorado. In conducting the subsurface investigation, laboratory testing, engineering evaluation and reporting, Entech Engineering, Inc. endeavored to work in accordance with generally accepted professional geotechnical and geologic practices and principles consistent with the level of care and skill ordinarily exercised by members of the geotechnical profession currently practicing in same locality and under similar conditions. No other warranty, expressed or implied is made. During final design and/or construction, if conditions are encountered which appear different from those described in this report, Entech Engineering, Inc. requests that it be notified so that the evaluation and recommendations presented herein can be reviewed and modified as appropriate.

If there are any questions regarding the information provided herein or if Entech Engineering, Inc. can be of further assistance, please do not hesitate to contact us.



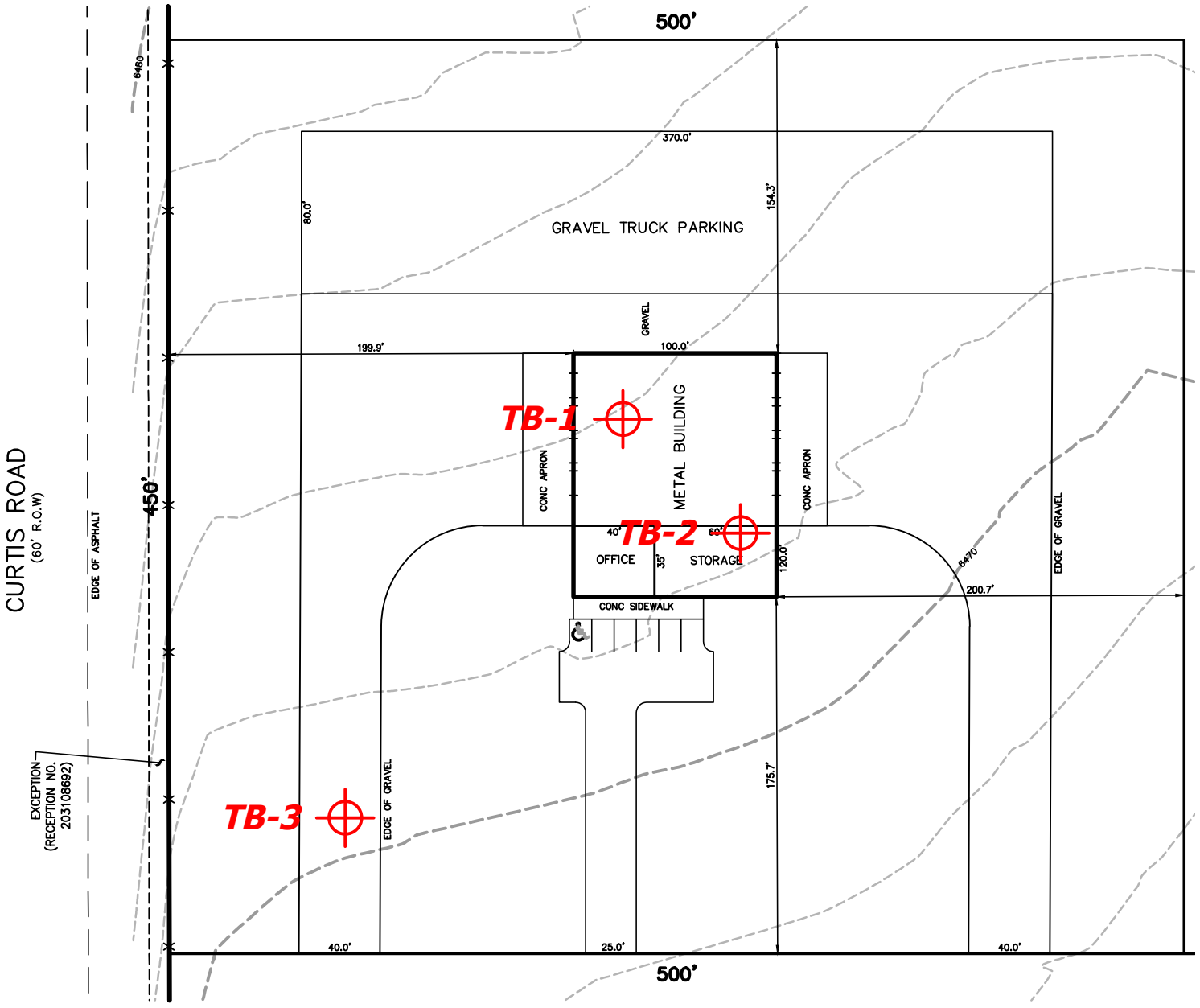
N

ENTECH ENGINEERING, INC.

VICINITY MAP
225 NORTH CURTIS ROAD
T-BONE CONSTRUCTION, INC.

JOB NO.
230743

FIG. 1



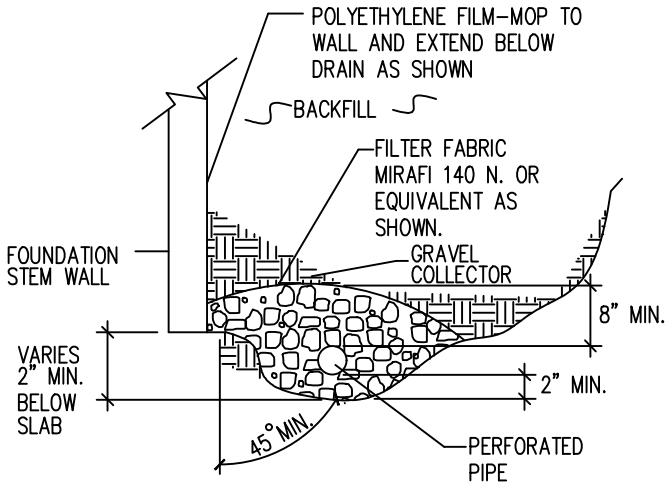
TB- APPROXIMATE TEST BORING LOCATION AND NUMBER

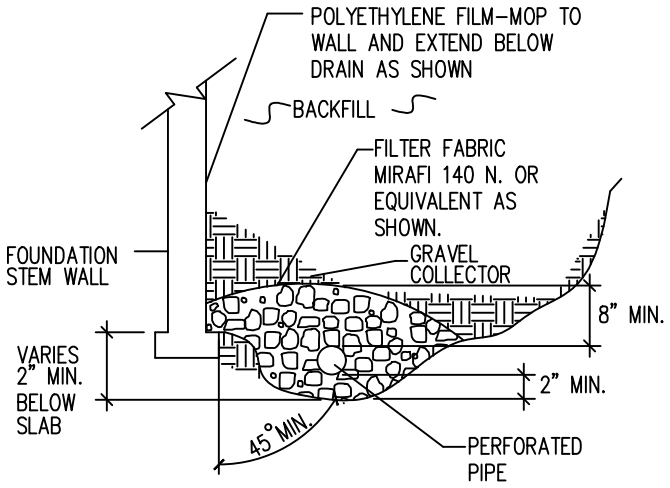
ENTECH ENGINEERING, INC.

SITE PLAN/TEST BORING LOCATION MAP
225 NORTH CURTIS ROAD
T-BONE CONSTRUCTION, INC.

JOB NO.
230743

FIG. 2





NOTES:

–GRAVEL SIZE IS RELATED TO DIAMETER OF PIPE PERFORATIONS–85% GRAVEL GREATER THAN 2x PERFORATION DIAMETER.

–PIPE DIAMETER DEPENDS UPON EXPECTED SEEPAGE. 4–INCH DIAMETER IS MOST OFTEN USED.

–ALL PIPE SHALL BE PERFORATED PLASTIC. THE DISCHARGE PORTION OF THE PIPE SHOULD BE NON–PERFORATED PIPE.

–FLEXIBLE PIPE MAY BE USED UP TO 8 FEET IN DEPTH, IF SUCH PIPE IS DESIGNED TO WITHSTAND THE PRESSURES. RIGID PLASTIC PIPE WOULD OTHERWISE BE REQUIRED.

–MINIMUM GRADE FOR DRAIN PIPE TO BE 1% OR 3 INCHES OF FALL IN 25 FEET.

–DRAIN TO BE PROVIDED WITH A FREE GRAVITY OUTFALL, IF POSSIBLE. A SUMP AND PUMP MAY BE USED IF GRAVITY OUT FALL IS NOT AVAILABLE.

ENTECH ENGINEERING, INC.

PERIMETER DRAIN DETAIL
225 NORTH CURTIS ROAD
T-BONE CONSTRUCTION, INC.

JOB NO. 230743

FIG. 3

APPENDIX A: Test Boring Logs

TABLE A-1

DEPTH TO BEDROCK & GROUNDWATER

TEST BORING	DEPTH TO BEDROCK (ft.)	DEPTH TO GROUNDWATER (ft.)
1	>20	>20
2	>20	>20
3	>10	>10

TEST BORING 1
DATE DRILLED 6/2/2023

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 20', 6/8/23						
6" TOPSOIL						
CLAY, WITH SAND, BROWN, STIFF to VERY STIFF, MOIST				13	7.8	1
	5			17	7.4	1
	10			24	5.6	1
SAND, SILTY, BROWN, DENSE, DRY						
	15			32	2.8	2
CLAY, SANDY, BROWN, HARD, MOIST						
	20			46	5.6	1

TEST BORING 2
DATE DRILLED 6/2/2023

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 20', 6/8/23						
6" TOPSOIL						
CLAY, WITH SAND, BROWN, STIFF to VERY STIFF, MOIST				16	7.7	1
	5			15	8.9	1
	10			30	6.0	1
SAND, SILTY, BROWN, DENSE, MOIST	15			38	5.0	2
SAND, CLAYEY, BROWN, DENSE, MOIST						
	20			38	8.1	2

ENTECH ENGINEERING, INC.

TEST BORING LOGS

225 N. CURTIS ROAD
T-BONE CONSTRUCTION

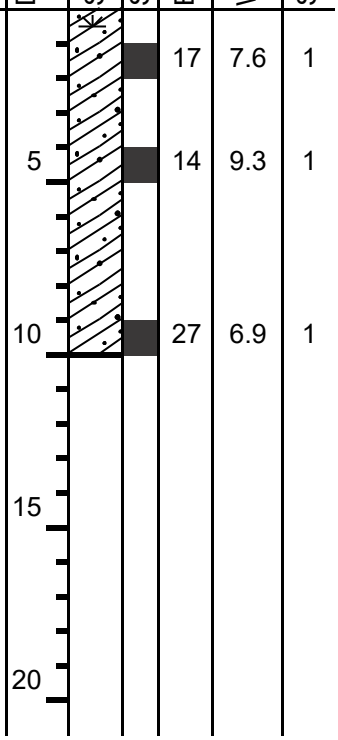
JOB NO. 230743

FIG. A-1

TEST BORING 3
DATE DRILLED 6/2/2023

REMARKS

DRY TO 100', 6/8/23



ENTECH ENGINEERING, INC.

TEST BORING LOGS

225 N. CURTIS ROAD
T-BONE CONSTRUCTION

JOB NO. 230743

FIG. A-2

APPENDIX B: Laboratory Test Results

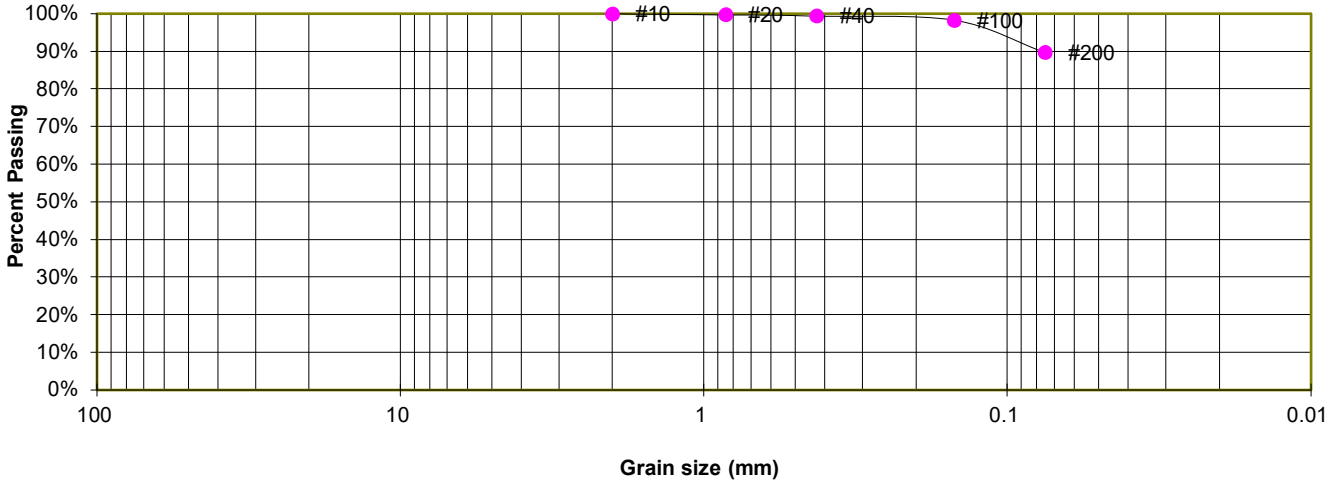
ENTECH ENGINEERING, INC.

TABLE B-1
SUMMARY OF LABORATORY TEST RESULTS

SOIL TYPE	TEST BORING NO.	DEPTH (FT)	WATER (%)	DRY DENSITY (PCF)	PASSING NO. 200 SIEVE (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX	SULFATE (WT %)	SWELL/ CONSOL (%)	USCS	SOIL DESCRIPTION
1	1	2-3			89.7	35	21	14	0.00		CL	CLAY, WITH SAND
1	2	5	15.3	111.8	85.0					0.6	CL	CLAY, SANDY
1	3	1-2			88.9	36	21	15			CL	CLAY, SANDY
1	3	0-3			87.4	37	23	14			CL	CLAY, WITH SAND
2	1	15			22.1	21	17	4	<0.01		SM	SAND, SILTY
2	2	20	11.9	113.9	47.7					0.3	SC	SAND, CLAYEY

Project: 225 N. Curtis Road
Client: T-Bone Construction
Job No: 230743

TEST BORING	1	SOIL DESCRIPTION	CLAY, WITH SAND
DEPTH (FT)	2-3	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	99.7%
40	99.4%
100	98.3%
200	89.7%

ATTERBERG LIMITS

Plastic Limit	21
Liquid Limit	35
Plastic Index	14

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

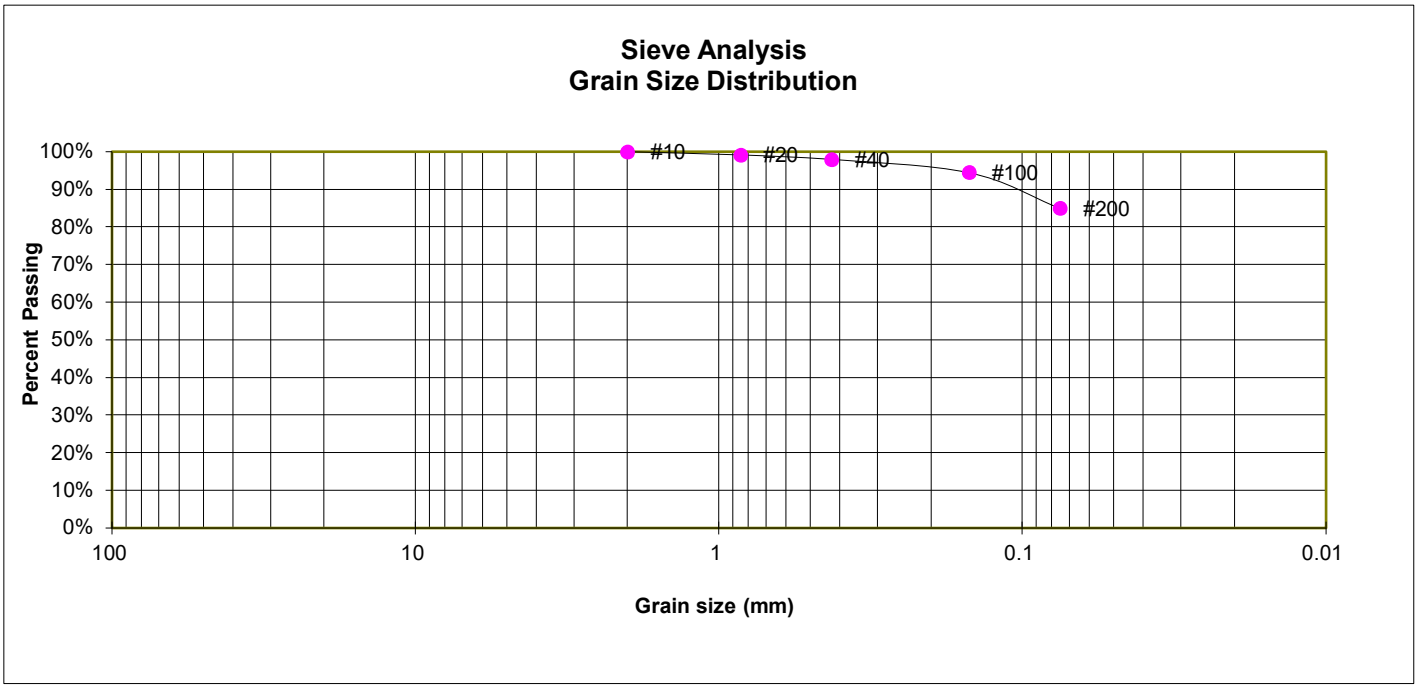
LABORATORY TEST RESULTS

225 N. CURTIS ROAD
T-BONE CONSTRUCTION

JOB NO. 230743

FIG. B-1

TEST BORING	2	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	99.2%
40	98.0%
100	94.5%
200	85.0%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

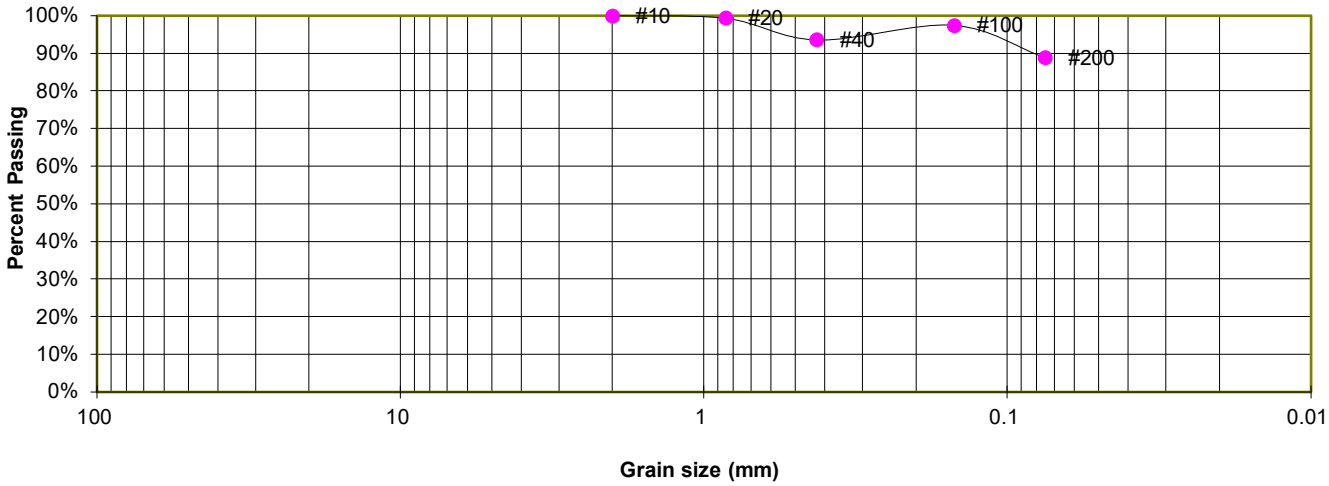
LABORATORY TEST RESULTS

225 N. CURTIS ROAD
T-BONE CONSTRUCTION

JOB NO. 230743

FIG. B-2

TEST BORING	3	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	1-2	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	99.4%
40	93.6%
100	97.5%
200	88.9%

ATTERBERG LIMITS

Plastic Limit	21
Liquid Limit	36
Plastic Index	15

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

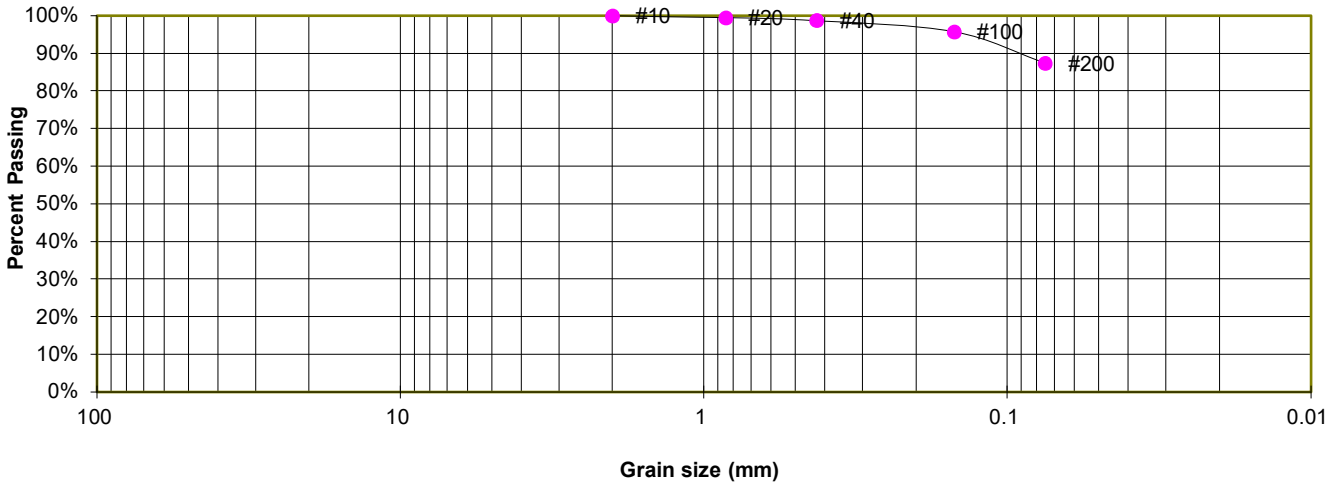
LABORATORY TEST RESULTS

225 N. CURTIS ROAD
T-BONE CONSTRUCTION

JOB NO. 230743

FIG. B-3

TEST BORING	3	SOIL DESCRIPTION	CLAY, WITH SAND
DEPTH (FT)	0-3	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	99.5%
40	98.8%
100	95.8%
200	87.4%

ATTERBERG LIMITS

Plastic Limit	23
Liquid Limit	37
Plastic Index	14

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

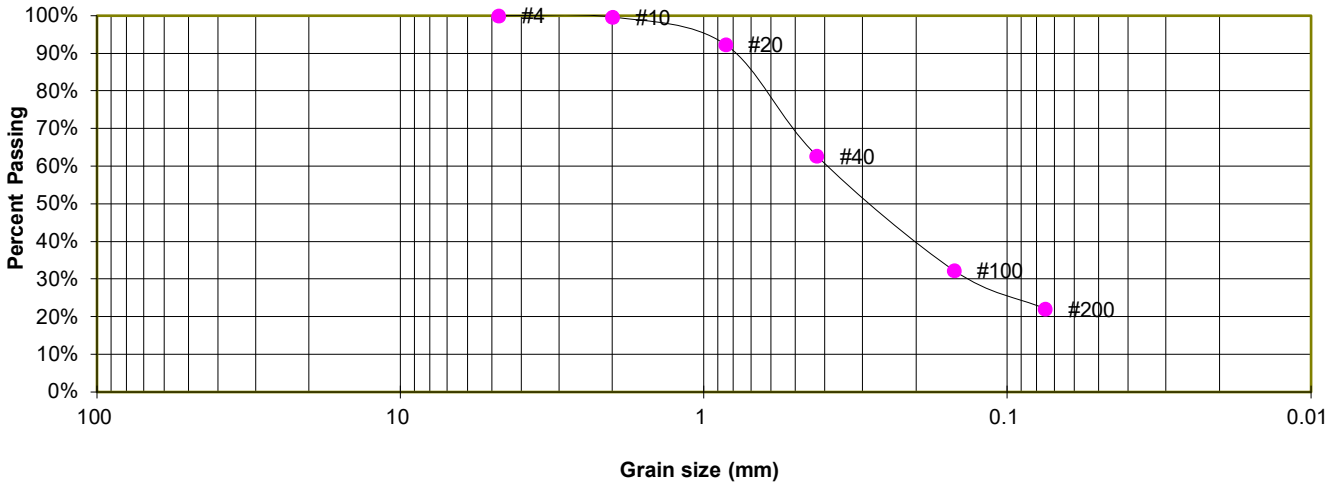
LABORATORY TEST RESULTS

225 N. CURTIS ROAD
T-BONE CONSTRUCTION

JOB NO. 230743

FIG. B-4

TEST BORING	1	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	15	SOIL TYPE	2



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.6%
20	92.3%
40	62.7%
100	32.3%
200	22.1%

ATTERBERG LIMITS

Plastic Limit	17
Liquid Limit	21
Plastic Index	4

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

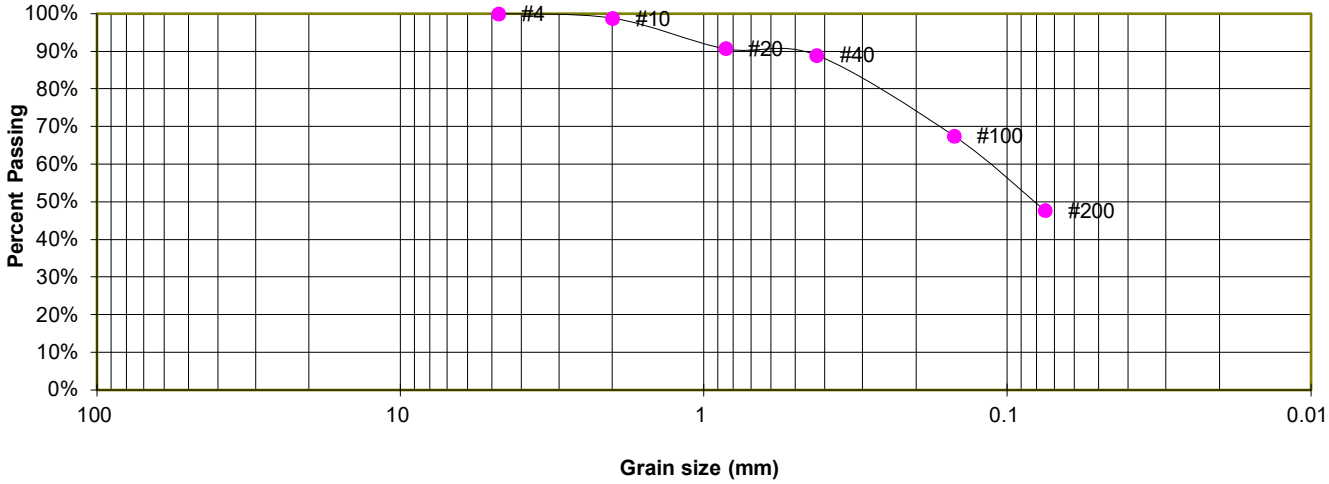
LABORATORY TEST RESULTS

225 N. CURTIS ROAD
T-BONE CONSTRUCTION

JOB NO. 230743

FIG. B-5

TEST BORING	2	SOIL DESCRIPTION	SAND, CLAYEY
DEPTH (FT)	20	SOIL TYPE	2



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	98.8%
20	90.8%
40	89.0%
100	67.6%
200	47.7%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SC

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

225 N. CURTIS ROAD
T-BONE CONSTRUCTION

JOB NO. 230743

FIG. B-6

TEST BORING	2	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	5	SOIL TYPE	1

SWELL/CONSOLIDATION TEST RESULTS

NATURAL UNIT DRY WEIGHT (PCF): 112
NATURAL MOISTURE CONTENT: 15.3%
SWELL/CONSOLIDATION (%): 0.6%

ENTECH ENGINEERING, INC.

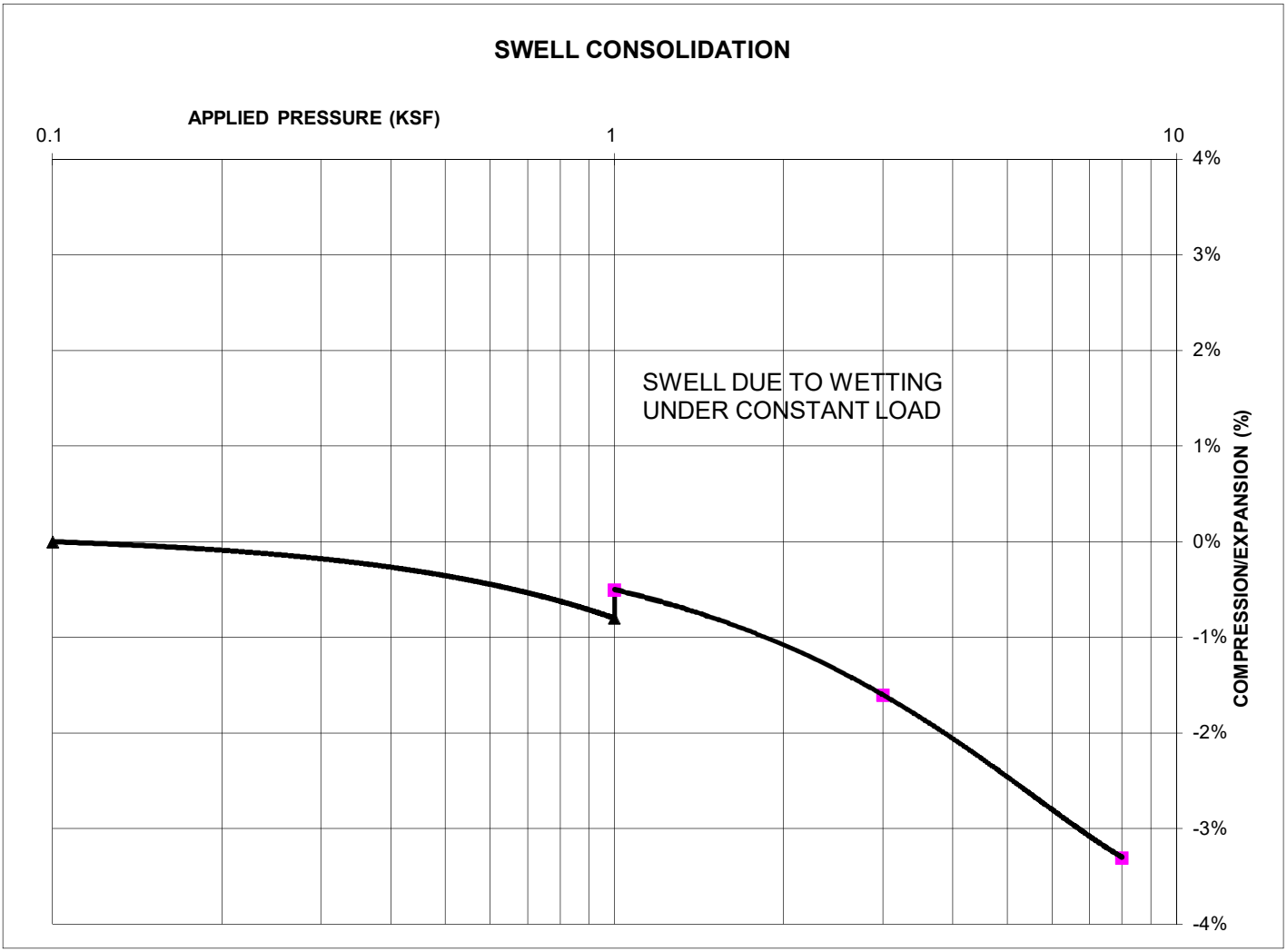
SWELL/CONSOLIDATION TEST RESULTS

225 N. CURTIS ROAD
T-BONE CONSTRUCTION

JOB NO. 230743

FIG. B-7

TEST BORING	2	SOIL DESCRIPTION	SAND, CLAYEY
DEPTH (FT)	20	SOIL TYPE	2



SWELL/CONSOLIDATION TEST RESULTS

NATURAL UNIT DRY WEIGHT (PCF): 114
NATURAL MOISTURE CONTENT: 11.9%
SWELL/CONSOLIDATION (%): 0.3%

ENTECH ENGINEERING, INC.

SWELL/CONSOLIDATION TEST RESULTS

225 N. CURTIS ROAD
T-BONE CONSTRUCTION

JOB NO. 230743

FIG. B-8