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August 3, 2023

Ms. Shannon Fickling
Fickling Architectural Services LLC
155 Oak Haven Avenue
Macon, GA 31204

RE: Text Pit Exploration
Cliffview Park Pavillion
Macon-Bibb County, GA
PGC # 19361

Dear Shannon:

Preston Geotechnical Consultants, LLC (PGC) is pleased to submit the following test pit exploration report. We completed the field portion of this investigation on July 31, 2023. The following is a report of our findings.

1. **BACKGROUND AND PURPOSE OF TEST PIT EXPLORATION:**

The site, located at 606 Cliffview Drive, overlooks an existing pond. The site was previously occupied by a house and swimming pool both of which were demolished sometime in the past. The proposed location of the new pavilion is believed to possibly coincide with the old pool or building foundations. Toward that end, test pits were excavated in the approximate proposed location of the pavilion to determine the presence of underlying buried debris or rubble.

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2. METHOD OF SAMPLING:

The sampling on this project was performed using a rubber tired John Deere backhoe to excavate test pits to approximate depths of 10 feet. At varying depths within each test pit, the soil was probed and cone penetrometer resistance testing performed in accordance with ASTM STP 399. Cone penetrometer resistance was correlated to the standard penetration resistance by the use of the appropriate curve on figure 3 of ASTM STP 399.

The equivalent SPT values along with laboratory tests of the soil from the boring enable us to make an assessment of the ability of the soil to support foundations.

The test pits were backfilled immediately after completion of the field work after a final check for the presence and depth of subsurface water was made.

3. GENERAL FINDINGS:

A total of four test pits were excavated by Macon-Bibb County forces under our observation. Test pits TP-2 and TP-3 were located near the north and south ends, respectively of the proposed pavilion while test pit TP-1 was located near the middle of the east side of the pavilion footprint. Finally test pit TP-4 was located further east and outside of the anticipated structural footprint.

Test pit TP-1, near the middle/east side of the pavilion, revealed 3.6 inches of brown silty sand above loose to medium density tan to red/tan silty sand through 4 feet. From 4 feet through the 10 feet depth of the excavation we discovered medium

density white, silty sand. In test pits TP-2 and TP-4, we found fills consisting of brown silty sand along with mixed concrete, brick and block rubble through depths ranging from 1 to 3 feet, respectively. Original soils beneath the fills were medium density red/tan silty sands grading into medium density, white silty sands extending through the 10 feet depth of the test pits. At test pit TP-3, at the south end of the proposed pavilion, we encountered loose to medium density, brown/tan silty sandy clean fills above original soils of medium density tan/red silty sands. No subsurface water was encountered at the time of our investigation. See Test Pit Location Sketch for approximate locations of the test pits. .

The following is a summary tabulation of the depth and the nature of the fill encountered:

| Test Pit Number | Depth of Fill Encountered (Feet ±) | Fill Material Type |
|-----------------|------------------------------------|---|
| TP-1 | no fill observed | no fill observed |
| TP-2 | 0 - 1 | Soil mixed with concrete & brick rubble |
| TP-3 | 0 - 6 | Clean fills |
| TP-4 | 0 - 3 | Soil mixed with concrete, brick, & block rubble |

4. CONCLUSIONS:

We suggest that the mixed rubble material within the pavilion footprint be undercut and removed from the site. Following removal of this material, the entire footprint of the pavilion

should be thoroughly predensified prior to backfilling of the undercut area and prior to placement of fill throughout the remainder of the structural footprint. **This is especially important in that moderately loose upper level soils were encountered that will require predensification in order to "tighten" the subgrade. Sands generally respond well to vibratory predensification efforts.** A vibratory pad foot and/or a smooth drum roller, a loaded dump truck or other rubber tired equipment should be used for the predensification. Overlapping passes of the vehicle should be made across the site in one direction and then at right angles to the original direction of rolling. Following predensification, we recommend a proofroll be observed by a geotechnical engineer or his representative prior to the placement of any structural fill.

Any yielding, pumping or soft areas that still remain should be cut out and replaced with fill compacted as described below.

The proposed fill soil should be limited to soils classified in accordance with ASTM D 2487 as GM, GC, SW, SP, SM, SC, ML, and CL. Soils classified as Pt, OH, OL, CH and MH are **not** suitable for structural fill. The on-site soils from cut sections **are likely not suitable** for structural fill as they are mixed with miscellaneous rubble.

The area fill should be spread in loose lifts (layers) of not more than eight inches. Each lift should be rolled with a vibratory roller, a sheepsfoot roller or a loaded, rubber-tired dump truck, scraper or loader. Each lift should be compacted to a minimum density of 95 percent of the maximum dry density as determined in accordance with ASTM D 698, current edition.

The fill soil moisture content should be maintained within three percent of the optimum moisture as determined in accordance with ASTM D 698. In the event that the soil is too wet, harrowing, scarifying and aeration should be used to dry the soils to within the required moisture content. If the soil is too dry, a water truck with spreader bar or a spray hose should be used to bring the soil to the proper moisture range. The water should be thoroughly and evenly mixed within the soil prior to compaction. Backfilling of trenches, walls and structures should be done in six inch loose lifts. Each lift should be compacted using a mechanical tamp such as a vibratory or impact type compactor.

In general, sandy soils are best compacted with vibratory type compaction equipment. Clayey soils should be compacted with an impact type or sheepsfoot compactor.

Horizontally, the compacted structural fill should extend at least as far outside the perimeter footings as the fill is in depth below the bottom of the footings.

Density tests should be taken throughout the placement of all structural fill. Density tests should also be performed on all at grade areas and/or areas that are brought to grade as a result of a cut section. These areas should be scarified and compacted in accordance with the same criteria.

In this physiographic area, shallow, poorly bedded seams of CH & MH soils may be encountered during grading operations. These soils are not suitable for use as support soils in direct contact with footings, slabs or pavements. These soils **may** be acceptable for use as fill for grassed areas. If encountered in

structural excavations, these class soils should be undercut and isolated from the structure with 18 inches of granular material such as sand or stone.

5. LIMITATIONS:

Although these findings are valid only at the locations and to the depths shown, they are useful for alerting the grading contractor to certain specific conditions pertinent to the preparation of the site.

Frequently, the grading contractor has never seen the geotechnical report or recommendations for site preparation. In addition, we see many cases where the specifications and plans do not reflect the recommendations made in the geotechnical report.

We suggest that every effort be made to alert the grading contractor so that he may avoid the problems that arise due to his lack of knowledge of potential site problems.

This report has been prepared for the exclusive use of Fickling Architectural Services LLC and its agents for specific application to the construction of the Cliffview Park Pavillion at 606 Cliffview Drive in Macon-Bibb County, Georgia. Preston Geotechnical Consultants, LLC has endeavored to comply with generally accepted geotechnical engineering practice common to the local area. Preston Geotechnical Consultants, LLC makes no other warranty, expressed or implied.

The analyses and conclusions contained in this report are based on data obtained from the test pit exploration. The methods

used indicate subsurface conditions only at the specific locations where samples were obtained, only at the time they were obtained, and only to the depths penetrated. Samples cannot be relied on to accurately reflect the strata variations that usually exist between sampling locations.

The conclusions included in this report are based in part upon the data Preston Geotechnical Consultants, LLC derived from a limited number of soil samples obtained from widely spaced test pits. The nature and extent of variations between these explorations will not become evident until construction or further investigation.

Please call on us if we can be of further service to you on this project.

Very truly yours,

PRESTON GEOTECHNICAL CONSULTANTS, LLC



Chipper J. Renfroe
Subsurface Investigation Manager



Robin C. Webb, P.E.



CLIFFVIEW PARK

MACON, GA 31206

REVIEW SET
 NOT FOR CONSTRUCTION
 THESE DOCUMENTS ARE UNAPPROVED
 UNTIL THEY ARE REVIEWED AND APPROVED
 BY THE CITY OF MACON
 PROJECT NUMBER: 19-24-023

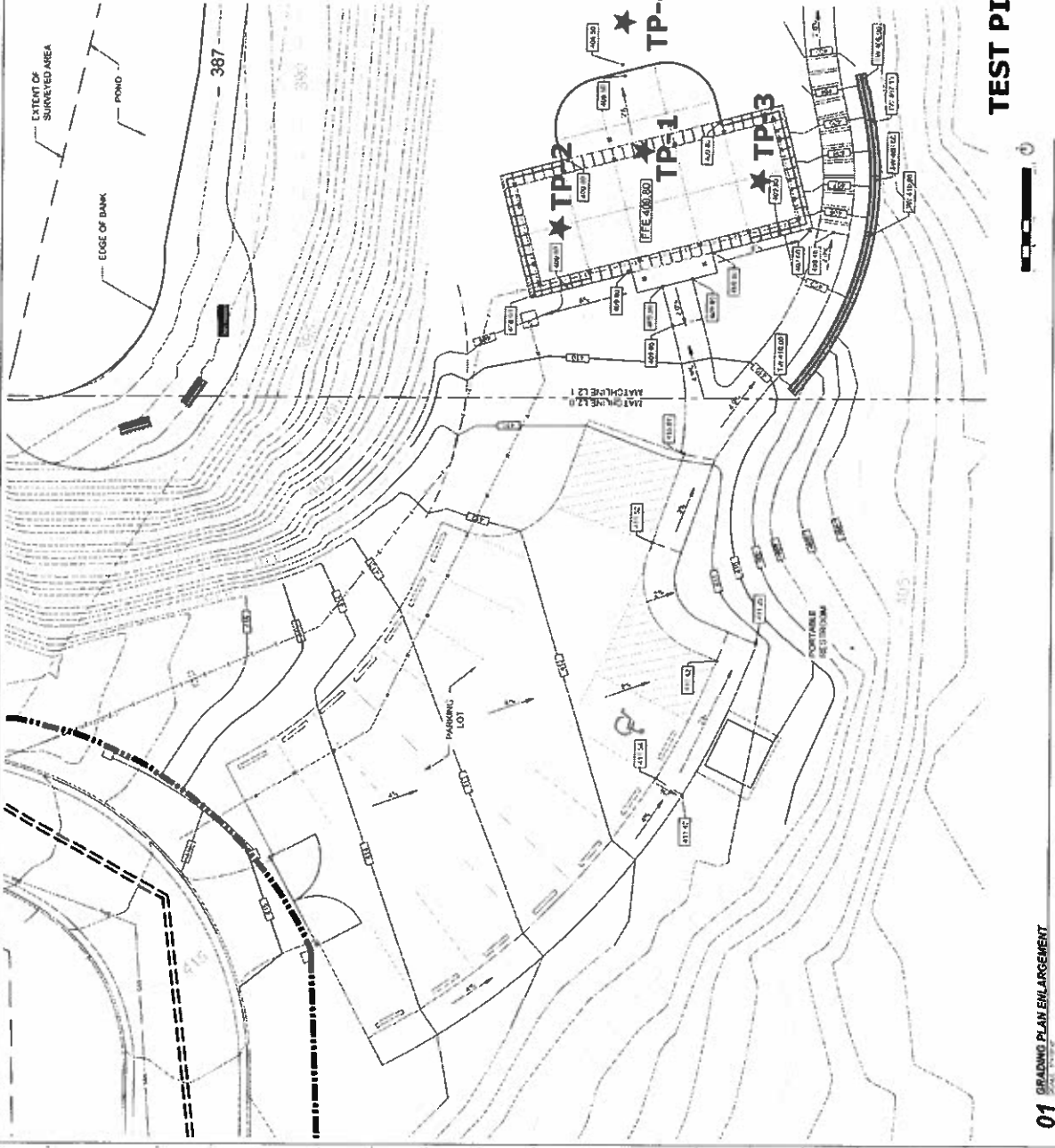
| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
| | | |
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| | | |

DATE: APRIL 22, 2021
 SHEET: 01

L2.0

- SYMBOL LEGEND**
- PROPERTY LINE
 - EXISTING SEWER LINE
 - EXISTING STORM LINE
 - EXISTING OVERHEAD ELEC LINE
 - EXISTING CHAIN LINK FENCE
 - EXISTING WATER METER
 - EXISTING FIRE HYDRANT
 - EXISTING VEGETATION
 - EXISTING CONTOUR - MINOR
 - EXISTING CONTOUR - MAJOR
 - PROPOSED CONTOUR - MINOR
 - PROPOSED CONTOUR - MAJOR
 - GRADE BREAK
 - SLOPE
 - SPOT GRADE

- NOTES**
- THE SURVEY CONDUCTED FOR THIS PROJECT COVERS ONLY A PORTION OF THE PROPERTY AS SHOWN BY THE WELLSTON ASSOCIATES LAND SURVEYORS 1628203.
 - THE EXISTING CONDITION PLAN WAS CREATED THROUGH GIS DATA PROVIDED BY THE CITY OF MACON. THE USER SHALL VERIFY ALL DIMENSIONS, OBJECTS, AND UTILITIES IN FIELD.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL ADJACENT PROPERTY OWNERS AND NEIGHBORS OF THE PROJECT AND VERIFY BETWEEN FIELD CONDITIONS AND PLANS FOR BACK OF CURB ELEVATIONS, BUILDING FLOOR ELEVATIONS, ETC.
 - PAVED AREAS SHALL HAVE A MINIMUM SLOPE OF 1% ON THE SURFACE IN DIRECTION OF TRAVEL, AND 2% CROSS SLOPE UNLESS OTHERWISE SPECIFIED.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING POSITIVE DRAINAGE AT ALL TIMES DURING CONSTRUCTION.
 - ALL FINISHED HARDSCAPE AND LANDSCAPE AREAS SHALL BE MAINTAINED TO PREVENT EROSION AND DAMAGE TO ADJACENT BUILDINGS.
 - GRADES IN LANDSCAPE AREAS SHALL HAVE A MINIMUM OF 1% SLOPE AT A MAXIMUM OF 7% UNLESS OTHERWISE NOTED OR APPROVED.
 - FEATHER ALL FINISH GRADITS TO MEET EXISTING GRADES WITHOUT ADOPT CHANGE IN SLOPE.
 - CONTRACTOR SHALL STABILIZE AND MAINTAIN EXISTING SLOPES AND GRADES AS REQUIRED AND/OR AS DIRECTED BY THE CITY OF MACON. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY EXCESSIVE SLOPE FAILURE AT NO ADDITIONAL COST TO THE OWNER.
 - CONTRACTOR SHALL CONSIDER EROSION CONTROL AND ALL APPLICABLE STATE AND LOCAL CODES FOR STORMWATER MANAGEMENT.



TEST PIT LOCATION SKETCH

PGC#19361





TEST PIT AUGER/PENETROMETER LOG PGC NO. 19361
PRESTON GEOTECHNICAL CONSULTANTS, LLC

CLIENT: FICKLING ARCHITECTURAL SERVICES, LLC BORING NO. TP-1

PROJECT NAME: TEST PIT EXPLORATION, CLIFFVIEW PARK PAVILLION, MACON-BIBB COUNTY

BORING LOCATION: SEE CORE/AUGER HOLE LOCATION SKETCH

DATUM: EXISTING GRADE HAMMER WT. 15 lbs HAMMER DROP 20 in. HOLE DIA: N/A

SUBSURFACE WATER DEPTH: NONE OBSERVED @ TIME OF BORING; BACKFILLED @ TIME OF BORING

SURFACE ELEV.: N/A DATE STARTED: 07-31-23 COMPLETED: 07-31-23 BORING METHOD: STP 399, ASTM D 1452

| SAMPLES | | BLOWS PER FOOT | DEPTH (FEET) | BORING LOG |
|-------------------------------------|-------------|----------------|--------------|--|
| STANDARD PENETRATION BLOWS PER FOOT | DESCRIPTION | | | |
| 0 | 10 | | | |
| 0 | | | 0 | 3.6" BROWN, SILTY FINE TO MEDIUM SAND (SM) |
| | | | 0.3 | |
| 1 | | 7 | 1 | TAN, SILTY FINE TO MEDIUM SAND (SM) |
| 2 | | 12 | 2 | RED-TAN, SILTY FINE SAND (SM) |
| | | | 3 | |
| | | | 4 | |
| | | | 5 | |
| 5 | | 13 | 5 | WHITE, SILTY FINE SAND (SM) |
| | | | 6 | |
| | | | 7 | |
| | | | 8 | |
| | | | 9 | |
| | | | 10 | |
| 10 | | 10 | 10 | TEST PIT TERMINATED |



TEST PIT AUGER/PENETROMETER LOG PGC NO. 19361
PRESTON GEOTECHNICAL CONSULTANTS, LLC

CLIENT: FICKLING ARCHITECTURAL SERVICES, LLC BORING NO. TP-2

PROJECT NAME: TEST PIT EXPLORATION, CLIFFVIEW PARK PAVILLION, MACON-BIBB COUNTY

BORING LOCATION: SEE CORE/AUGER HOLE LOCATION SKETCH

DATUM: EXISTING GRADE HAMMER WT. 15 lbs HAMMER DROP 20 in. HOLE DIA: N/A

SUBSURFACE WATER DEPTH: NONE OBSERVED @ TIME OF BORING; BACKFILLED @ TIME OF BORING

SURFACE ELEV.: N/A DATE STARTED: 07-31-23 COMPLETED: 07-31-23 BORING METHOD: STP 399, ASTM D 1452

| SAMPLES | | BLOWS PER FOOT | DEPTH (FEET) | BORING LOG | | | | | |
|-------------------------------------|-------------|----------------|--------------|------------|----|-----|----|---|--|
| STANDARD PENETRATION BLOWS PER FOOT | DESCRIPTION | | | | | | | | |
| 0 | 10 | 20 | 40 | 60 | 80 | 100 | 0 | | |
| 0 | | | | | | | 0 | BROWN, SILTY FINE TO MEDIUM SAND (SM) WITH CONCRETE AND BRICK RUBBLE (FILL) | |
| 1 | | | | | | | 13 | 1 | |
| 2 | | | | | | | 11 | 2 | RED-TAN, SILTY FINE SAND (SM) (ORIGINAL) |
| 3 | | | | | | | | 3 | |
| 4 | | | | | | | | 4 | |
| 5 | | | | | | | 11 | 5 | |
| 6 | | | | | | | | 6 | |
| 7 | | | | | | | | 7 | WHITE, SILTY FINE SAND (SM) |
| 8 | | | | | | | | 8 | |
| 9 | | | | | | | | 9 | |
| 10 | | | | | | | 12 | 10 | |
| | | | | | | | | TEST PIT TERMINATED | |



TEST PIT AUGER/PENETROMETER LOG
PRESTON GEOTECHNICAL CONSULTANTS, LLC

PGC NO. 19361

CLIENT: FICKLING ARCHITECTURAL SERVICES, LLC

BORING NO. TP-3

PROJECT NAME: TEST PIT EXPLORATION, CLIFFVIEW PARK PAVILLION, MACON-BIBB COUNTY

BORING LOCATION: SEE CORE/AUGER HOLE LOCATION SKETCH

DATUM: EXISTING GRADE

HAMMER WT. 15 lbs

HAMMER DROP 20 in.

HOLE DIA: N/A

SUBSURFACE WATER DEPTH: NONE OBSERVED @ TIME OF BORING; BACKFILLED @ TIME OF BORING

SURFACE ELEV.: N/A

DATE STARTED: 07-31-23

COMPLETED: 07-31-23

BORING METHOD: STP 399, ASTM D 1452

| SAMPLES | | BLOWS PER FOOT | DEPTH (FEET) | BORING LOG |
|-------------------------------------|-------------|----------------|--------------|--|
| STANDARD PENETRATION BLOWS PER FOOT | DESCRIPTION | | | |
| 0 | 10 | 0 | 0 | |
| 1 | 10 | 7 | 1 | |
| 2 | 10 | 8 | 2 | BROWN-TAN, SILTY FINE TO MEDIUM SAND (SM) |
| 3 | 10 | 15 | 3 | |
| 4 | 10 | | 4 | |
| 5 | 10 | | 5 | |
| 6 | 10 | | 6 | |
| 7 | 10 | | 7 | |
| 8 | 10 | | 8 | TAN-RED, SILTY FINE TO MEDIUM SAND (SM) (ORIGINAL) |
| 9 | 10 | | 9 | |
| 10 | 10 | | 10 | |

TEST PIT TERMINATED



TEST PIT AUGER/PENETROMETER LOG PGC NO. 19361
PRESTON GEOTECHNICAL CONSULTANTS, LLC

CLIENT: FICKLING ARCHITECTURAL SERVICES, LLC BORING NO. TP-4

PROJECT NAME: TEST PIT EXPLORATION, CLIFFVIEW PARK PAVILLION, MACON-BIBB COUNTY

BORING LOCATION: SEE CORE/AUGER HOLE LOCATION SKETCH

DATUM: EXISTING GRADE HAMMER WT. 15 lbs HAMMER DROP 20 in. HOLE DIA: N/A

SUBSURFACE WATER DEPTH: NONE OBSERVED @ TIME OF BORING; BACKFILLED @ TIME OF BORING

SURFACE ELEV.: N/A DATE STARTED: 07-31-23 COMPLETED: 07-31-23 BORING METHOD: STP 399, ASTM D 1452

| SAMPLES | | BLOWS PER FOOT | DEPTH (FEET) | BORING LOG | | | | | |
|----------------|-------------|----------------|--------------|-------------|----|-----|--|--|---|
| STANDARD | PENETRATION | | | DESCRIPTION | | | | | |
| BLOWS PER FOOT | | | | | | | | | |
| 0 | 10 | 20 | 40 | 60 | 80 | 100 | | | |
| 0 | | | | 0 | | | | | |
| 1 | | | | 1 | | | | | |
| 2 | | | | 2 | | | | | |
| 3 | | | | 3 | 10 | | | | BROWN, SILTY FINE TO MEDIUM SAND (SM) WITH CONCRETE, BRICK, AND BLOCK RUBBLE (FILL) |
| 4 | | | | 4 | | | | | |
| 5 | | | | 5 | 11 | | | | RED-TAN, SILTY FINE SAND (SM) (ORIGINAL) |
| 6 | | | | 6 | | | | | |
| 7 | | | | 7 | | | | | |
| 8 | | | | 8 | | | | | |
| 9 | | | | 9 | | | | | |
| 10 | | | | 10 | | | | | WHITE, SILTY FINE SAND (SM) |
| | | | | | | | | | TEST PIT TERMINATED |

DEFINITION OF TERMS

- U.D. - Undisturbed sample (ASTM D 1587, Shelby Tube)
SPT - Standard Penetration Test (ASTM D 1586, Split Spoon)
L.L. - Liquid Limit (ASTM D 4318)
P.L. - Plastic Limit (ASTM D 4318)
P.I. - Plasticity Index (ASTM D 4318)
ATOB - At Time of Boring

CLAYS AND SILTS

| <u>Consistency</u> | <u>SPT (Blows per foot)</u> |
|--------------------|-----------------------------|
| Very soft | Less than 2 |
| Soft (L.L.) | 2 - 4 |
| Medium | 4 - 8 |
| Stiff | 8 - 15 |
| Very Stiff (P.L.) | 15 - 30 |
| Hard | Over |

SANDS

| <u>Relative density</u> | <u>SPT (Blows per foot)</u> |
|-------------------------|-----------------------------|
| Very loose | 0 - 4 |
| Loose | 4 - 10 |
| Medium or firm | 10 - 30 |
| Dense | 30 - 50 |
| Very dense | Over 50 |

SOIL FRACTIONS

| <u>Term</u> | <u>Size Range</u> |
|---|---------------------|
| Cobbles | Above 3" |
| Gravel | Coarse 3" to 3/4" |
| Fine | 3/4" to No. 4 Sieve |
| Sand Coarse | No. 4 to No. 10 |
| Medium | No. 10 to No. 40 |
| Fine | No. 40 to No. 200 |
| Fines Clay-Silt | Below No. 200 sieve |
| Gravel - Naturally occurring aggregates | |
| Crushed Stone - Man-made aggregates such as crushed granite | |