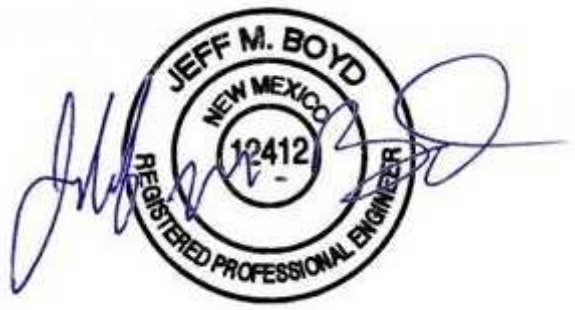
Western Technologies Inc.

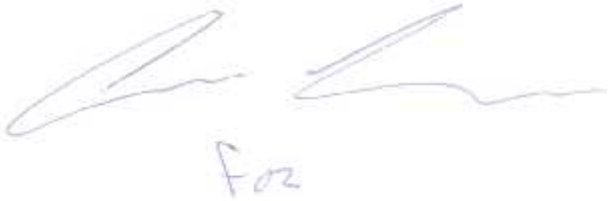
GEOTECHNICAL EVALUATION REPORT

CONEJO TRANSFER STATION
Manzano Expressway
Valencia County, New Mexico
WT Reference No. 3225JJ300

PREPARED FOR:
Advisory Inspection & Operations Co., LLC
460 St. Michaels Drive, Suite 801
Santa Fe, New Mexico
Attn: Joe J. Sanchez, P.E.

December 23, 2015





Jeff M. Boyd, P.E.
Senior Geotechnical Engineer

Reviewed By: Bruce M. MacIlroy, P.E.
Technical Director

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GEOTECHNICAL EVALUATION
CONEJO TRANSFER STATION
MANZANO EXPRESS WAY
VALENCIA, NEW MEXICO
WT JOB NO. 3225JJ300

1.0 PURPOSE

This report contains the results of our geotechnical evaluation for the proposed improvements to the existing transfer station, and was performed in general accordance with our contract. The purpose of our services is to provide information and recommendations regarding:

- Subsurface conditions
- Groundwater
- Foundation design parameters
- Retaining walls
- Slabs-on-grade
- Drainage
- Earthwork, including site preparation, fill placement, and suitability of existing soils for fill materials, and compaction

Results of the field exploration, field and laboratory tests are presented in the Appendices.

2.0 PROJECT DESCRIPTION

Project information supplied by Joe J. Sanchez, P.E. on September 8, 2015 indicates that the project will include new retaining walls and a concrete apron for trash trucks. Final site grading plans were not available at the time of this report. Should our assumptions not be correct, we should be notified immediately.

3.0 SCOPE OF SERVICES

3.1 Field Exploration

Two borings were drilled to a depth of 16.5 feet below existing grade at locations designated by the Client. The borings were drilled at the approximate locations shown on the attached Boring Location Diagram. A field log was prepared for each boring. These logs contain visual classifications of the materials encountered during drilling as well as interpolation of the subsurface conditions between samples. Final logs, included in Appendix A, represent our interpretation of the field logs and may include modifications based on laboratory observations and tests of the field samples. The final logs describe the materials encountered, their thicknesses, and the locations where samples were obtained.

The Unified Soil Classification System was used to classify soils. The soil classification symbols appear on the boring logs and are briefly described in Appendix A.

3.2 Laboratory Analysis

Laboratory analyses were performed on representative soil samples to aid in material classification and to estimate pertinent engineering properties of the on-site soils for preparation of this report. The following tests were performed in general accordance with applicable procedures, and the results are presented in Appendix B.

- Field moisture content
- In-situ soil density
- -#200 Sieve
- Liquid limit and plasticity index
- Compression

3.3 Analyses and Report

Analyses were performed and this report was prepared for the exclusive purpose of providing geotechnical engineering and/or testing information and recommendations. The scope of services for this project does not include, either specifically or by implication, any environmental assessment of the Site or identification of contaminated or hazardous materials or conditions. If the owner is concerned about the potential for such contamination, other studies should be undertaken. We are available to discuss the scope of such studies with you.

This geotechnical engineering report includes a description of the project, a discussion of the field and laboratory testing programs, a discussion of the subsurface conditions, and design recommendations as required to satisfy the purpose previously described.

4.0 SITE CONDITIONS

4.1 Surface

At the time of our exploration, the Site was developed as a waste transfer station. The transfer station is built on approximately 10 to 15 feet of fill. There were three existing buildings and a concrete loading pad. General site drainage was to the northwest along a gradual slope, however the fill slopes are moderately steep.

4.2 Subsurface

As presented on the boring logs, surface soils to depths of 10 to 16.5 feet consist of Silty SAND and poorly graded SAND. Near surface soils are non-plastic. The materials underlying the surface soils and extending to the full depth of exploration in boring 2 consisted of Sandy CLAY and Silty SAND. Groundwater was not encountered in any of the borings at the time of exploration.

5.0 GEOTECHNICAL PROPERTIES & ANALYSIS

5.1 Laboratory Tests

Laboratory test results (see Appendix B) indicate that native subsoils near shallow foundation level at the retaining wall location exhibit slight compressibility at existing water contents. Very high amounts of additional compression occurs when the water content is increased.

Near-surface soils are non-plastic to low plasticity. These soils are not expected to exhibit significant shrink/swell upon changes in moisture content.

6.0 RECOMMENDATIONS

6.1 General

Recommendations contained in this report are based on our understanding of the project criteria described in **Section 2.0**, and the assumption that the soil and subsurface conditions are those disclosed by the borings. Others may change the plans, final elevations, number and type of structures, foundation loads, and floor levels during design or construction. Substantially different subsurface conditions from those described herein may be encountered or become known. Any changes in the project criteria or subsurface conditions shall be brought to our attention in writing.

6.3 Retaining Wall Foundations

Conventional spread-type footings may be used to support the proposed retaining structure. Since the native soils exhibit substantial settlement potential, the footings should bear on engineered fills achieved by removal and recompaction of the soils below footings. The depth and lateral extent of the engineered fills is presented in the **Earthwork** section of this report.

Footing Depth Below Finished Grade (ft.) [1]	Allowable Bearing Capacity (psf) [2]
1.5 [3]	2,500
3.0	3,500

[1] Finished grade is the lowest adjacent grade for perimeter footings and floor level for interior footings.
[2] Allowable bearing capacities assume fulfillment of **EARTHWORK** recommendations.
[3] Minimum depth for frost protection for exterior footings or footings in unheated spaces.

We anticipate that differential movement of the proposed structure, supported as recommended, should be ¾ of one inch or less. Additional foundation movements could occur if water from any source infiltrates the foundation soils. Therefore, proper drainage should be provided in the final design and during construction.

All footings, stem walls, and masonry walls should be reinforced to reduce the potential for distress caused by differential foundation movements. The use of joints at openings or other discontinuities in masonry walls is recommended.

We recommend that the geotechnical engineer or his representative observe the footing excavations before reinforcing steel and concrete are placed. This observation is to assess whether the soils exposed are similar to those anticipated for support of the footings. Any soft, loose or unacceptable soils should be undercut to suitable materials and backfilled with approved fill materials or lean concrete. Soil backfill should be properly compacted.

6.4 Lateral Design Criteria

Earth retaining structures less than 15 feet in height, above any free water surface, with level backfill and no surcharge loads may be designed using the equivalent fluid pressure method. Recommended equivalent fluid pressures and coefficients of base friction are:

- Active:
  Undisturbed subsoil.....35 psf/ft
  Compacted imported backfill.....30 psf/ft

- Passive:
  Shallow wall footings.....250 psf/ft

- Coefficient of base friction 0.4*

*The coefficient of base friction should be reduced to 0.3 when used in conjunction with passive pressure.

The lateral earth pressures presented herein do not include the lateral pressures arising from the presence of:

- Hydrostatic conditions, submergence or partial submergence
- Sloping backfill, positively or negatively
- Surcharge loading, permanent or temporary
- Seismic or dynamic conditions

We recommend a free-draining soil layer or manufactured geosynthetic material, be constructed adjacent to the back of the wall. A filter may be required between the soil backfill and drainage layer. This drainage zone should help prevent development of hydrostatic pressure on the wall. This vertical drainage zone should be tied into a gravity drainage system at the base of the wall.

Fill against footings, stem walls, and retaining walls should be compacted to densities specified in **EARTHWORK**. Compaction of each lift adjacent to walls should be

accomplished with hand-operated tampers or other lightweight compactors. Over-compaction may cause excessive lateral earth pressures that could result in wall movements.

6.5 Concrete Apron Slab

The concrete apron slabs-on-grade can be supported on properly placed and compacted fill or approved natural soils. The slab subgrade should be prepared by the procedures outlined in this report. The recommended modulus of subgrade reaction (k) is 200 pounds per cubic inch.

The apron slab should contain properly spaced weakened plane control joints in both the longitudinal and transverse directions. Normal control joints should be square patterns not to exceed ten to fifteen feet per side. All control joints should have a depth of at least ¼ of the slab thickness. Depending on the method used, control joints should be cut as soon as possible during curing operations to prevent random cracking. Structures and features projecting into the slab should be isolated from the pavement with a 1-inch thick pre-molded expansion joint material. Transverse expansion joints should be placed at proper intervals to provide expansion/contraction relief. All joints should be cleaned and sealed with an approved material prior to opening to traffic.

All concrete placement and curing operations should follow the American Concrete Institute manual recommendations. Improper curing techniques and/or high slump (high water-cement ratio) could cause excessive shrinkage, cracking or curling. Concrete slabs should be allowed to cure adequately before placing vinyl or other moisture sensitive floor covering.

6.6 Drainage

The major cause of soil problems in this vicinity is moisture increase in soils below structures. Therefore, it is extremely important that positive drainage be provided during construction and maintained throughout the life of the proposed development. Infiltration of water into utility or foundation excavations must be prevented during construction.

Backfill against footings, exterior walls, and in utility line trenches should be well compacted and free of all construction debris to minimize the possibility of moisture infiltration.

7.0 EARTHWORK

7.1 General

The conclusions contained in this report for the proposed construction are contingent upon compliance with recommendations presented in this section. Any excavating, trenching, or disturbance that occurs after completion of the earthwork must be backfilled, compacted and tested in accordance with the recommendations contained herein. It is not reasonable to rely upon our conclusions and recommendations if any future unobserved and untested trenching, earthwork activities or backfilling occurs.

7.2 Site Clearing

Strip and remove any existing vegetation, organic topsoils, debris, and any other deleterious materials from the structure and slab areas. The structure area is defined as that area within the foundation footprint plus five feet beyond the perimeter of the footprint. All exposed surfaces should be free of mounds and depressions that could prevent uniform compaction.

Sloping areas steeper than 5:1 (horizontal:vertical) should be benched to reduce the potential for slippage between existing slopes and fills. Benches should be level and wide enough to accommodate compaction and earth moving equipment.

7.3 Foundation Preparation

In footing areas, remove existing soils to a minimum depth of 4 feet below the bottom of the footing. Removal should extend a minimum of 3 feet beyond the footing edges. Replace with engineered fill material. After any overexcavation has been accomplished, the exposed soils should be scarified, moistened or dried as required, and compacted to a minimum depth of 10 inches.

7.4 Apron Slab Preparation

Scarify, moisten or dry as required, and compact all subgrade soils to a minimum depth of 10 inches. The subgrade preparation is to be accomplished in a manner that will result in uniform water contents and densities after compaction.

7.5 Materials

Clean on-site native soils with low-expansive potentials or imported materials may be used as fill material for the following:

- Foundation areas
- Slab areas
- Backfill

Imported soils should conform to the following:

- Gradation (ASTM C136):

	percent finer by weight
6"	100
4"	85-100
¾"	70-100
No. 4 Sieve	50-100
No. 200 Sieve	20 (max)

- Maximum soluble sulfates (%) 0.10
- Maximum Plasticity Index (PI) ..... Non-Plastic

Base course should conform to NMDOT specifications.

7.6 Placement and Compaction

a. Place and compact fill in horizontal lifts, using equipment and procedures that will produce recommended water contents and densities throughout the lift.
b. Uncompacted fill lifts should not exceed 10 inches.
c. Frozen soil should not be used as fill and no fill should be placed over frozen ground.
d. Materials should be compacted to the following:

Material	Minimum Percent Compaction (ASTM D1557)
On-site soil, reworked and fill	95
Imported soil	95
Aggregate base course below slabs-on-grade	95
Nonstructural backfill	90

On-site and imported soils should be compacted within a water content range of two percent below to three percent above optimum.

7.7 Compliance

Recommendations for slabs-on-grade and foundation elements supported on compacted fills or prepared subgrade depend upon compliance with **EARTHWORK** recommendations. To assess compliance, observation and testing should be performed under the direction of a geotechnical engineer.

8.0 LIMITATIONS

This report has been prepared assuming the project criteria described in **Section 2.0**. If changes in the project criteria occur, or if different subsurface conditions are encountered or become known, the conclusions and recommendations presented herein shall become invalid. In any such event, WT should be contacted in order to assess the effect that such variations may have on our conclusions and recommendations.

The recommendations presented are based entirely upon data derived from a limited number of samples obtained from widely spaced borings. The attached logs are indicators of subsurface conditions only at the specific locations and times noted. This report assumes the uniformity of the geology and soil structure between borings, however variations can and often do exist. Whenever any deviation, difference or change is encountered or becomes known, WT should be contacted.

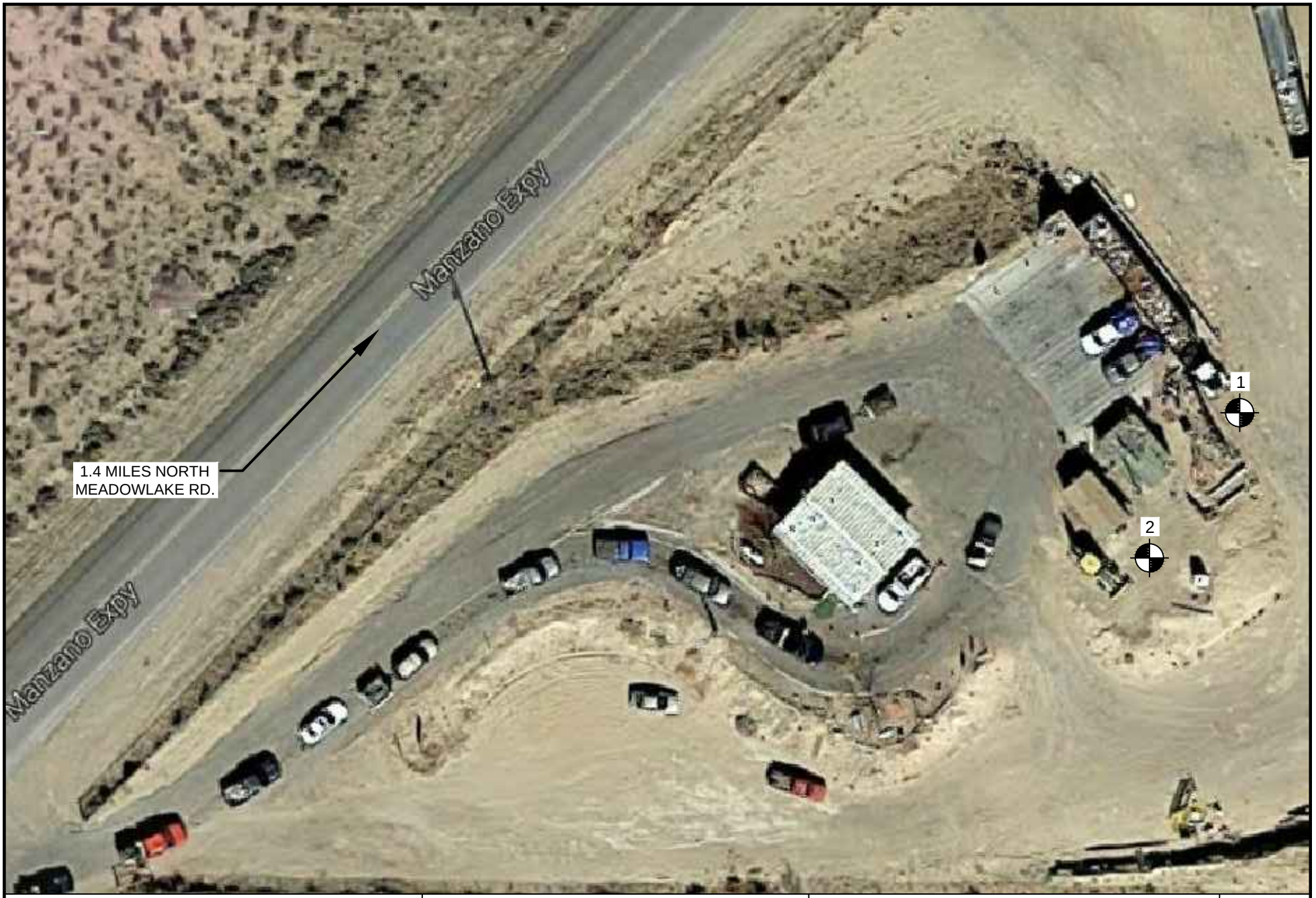
This report is for the exclusive benefit of our client alone. There are no intended third-party beneficiaries of our contract with the client or this report., and nothing contained in the contract or this report shall create any express or implied contractual or any other relationship with, or claim or cause of action for, any third party against WT.

This report is valid for the earlier of one year from the date of issuance, a change in circumstances, or discovered variations. After expiration, no person or entity shall rely on this report without the express written authorization of WT.

9.0 CLOSURE

We prepared this report as an aid to the designers of the proposed project. The comments, statements, recommendations and conclusions set forth in this report reflect the opinions of the

authors. These opinions are based upon data obtained at the location of the borings, and from laboratory tests. Work on your project was performed in accordance with generally accepted standards and practices utilized by professionals providing similar services in this locality. No other warranty, express or implied, is made.



Approximate Boring Location

NOT TO SCALE

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JOB NO.: **3225JJ300**

BORING LOCATION DIAGRAM

PLATE
1

Allowable Soil Bearing Capacity	The recommended maximum contact stress developed at the interface of the foundation element and the supporting material.
Backfill	A specified material placed and compacted in a confined area.
Base Course	A layer of specified aggregate material placed on a subgrade or subbase.
Base Course Grade	Top of base course.
Bench	A horizontal surface in a sloped deposit.
Caisson/Drilled Shaft	A concrete foundation element cast in a circular excavation which may have an enlarged base (or belled caisson).
Concrete Slabs-On-Grade	A concrete surface layer cast directly upon base course, subbase or subgrade.
Crushed Rock Base Course	A base course composed of crushed rock of a specified gradation.
Differential Settlement	Unequal settlement between or within foundation elements of a structure.
Engineered Fill	Specified soil or aggregate material placed and compacted to specified density and/or moisture conditions under observations of a representative of a soil engineer.
Existing Fill	Materials deposited through the action of man prior to exploration of the site.
Existing Grade	The ground surface at the time of field exploration.
Expansive Potential	The potential of a soil to expand (increase in volume) due to absorption of moisture.
Fill	Materials deposited by the actions of man.
Finished Grade	The final grade created as a part of the project.
Gravel Base Course	A base course composed of naturally occurring gravel with a specified gradation.
Heave	Upward movement.
Native Grade	The naturally occurring ground surface.
Native Soil	Naturally occurring on-site soil.
Rock	A natural aggregate of mineral grains connected by strong and permanent cohesive forces. Usually requires drilling, wedging, blasting or other methods of extraordinary force for excavation.
Sand and Gravel Base Course	A base course of sand and gravel of a specified gradation.
Sand Base Course	A base course composed primarily of sand of a specified gradation.
Scarify	To mechanically loosen soil or break down existing soil structure.
Settlement	Downward movement.
Soil	Any unconsolidated material composed of discrete solid particles, derived from the physical and/or chemical disintegration of vegetable or mineral matter, which can be separated by gentle mechanical means such as agitation in water.
Strip	To remove from present location.
Subbase	A layer of specified material placed to form a layer between the subgrade and base course.
Subbase Grade	Top of subbase.
Subgrade	Prepared native soil surface.

COARSE-GRAINED SOILS

LESS THAN 50% FINES

GROUP SYMBOLS	DESCRIPTION	MAJOR DIVISIONS
GW	WELL-GRADED GRAVEL OR WELL-GRADED GRAVEL WITH SAND, LESS THAN 5% FINES	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE
GP	POORLY-GRADED GRAVEL OR POORLY-GRADED GRAVEL WITH SAND, LESS THAN 5% FINES	
GM	SILTY GRAVEL OR SILTY GRAVEL WITH SAND, MORE THAN 12% FINES	
GC	CLAYEY GRAVEL OR CLAYEY GRAVEL WITH SAND, MORE THAN 12% FINES	
SW	WELL-GRADED SAND OR WELL-GRADED SAND WITH GRAVEL, LESS THAN 5% FINES	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE
SP	POORLY-GRADED SAND OR POORLY-GRADED SAND WITH GRAVEL, LESS THAN 5% FINES	
SM	SILTY SAND OR SILTY SAND WITH GRAVEL, MORE THAN 12% FINES	
SC	CLAYEY SAND OR CLAYEY SAND WITH GRAVEL, MORE THAN 12% FINES	

NOTE: Coarse-grained soils receive dual symbols if they contain 5% to 12% fines (e.g., SW-SM, GP-GC).

FINE-GRAINED SOILS

MORE THAN 50% FINES

GROUP SYMBOLS	DESCRIPTION	MAJOR DIVISIONS
ML	SILT, SILT WITH SAND OR GRAVEL, SANDY SILT, OR GRAVELLY SILT	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50
CL	LEAN CLAY OF LOW TO MEDIUM PLASTICITY, SANDY CLAY, OR GRAVELLY CLAY	
OL	ORGANIC SILT OR ORGANIC CLAY OF LOW TO MEDIUM PLASTICITY	
MH	ELASTIC SILT, SANDY ELASTIC SILT, OR GRAVELLY ELASTIC SILT	SILTS AND CLAYS LIQUID LIMIT MORE THAN 50
CH	FAT CLAY OF HIGH PLASTICITY, SANDY FAT CLAY, OR GRAVELLY FAT CLAY	
OH	ORGANIC SILT OR ORGANIC CLAY OF HIGH PLASTICITY	
PT	PEAT AND OTHER HIGHLY ORGANIC SOILS	HIGHLY ORGANIC SOILS

NOTE: Fine-grained soils may receive dual classification based upon plasticity characteristics (e.g. CL-ML).

SOIL SIZES

COMPONENT	SIZE RANGE
BOULDERS	Above 12 in.
COBBLES	3 in. – 12 in.
GRAVEL	No. 4 – 3 in.
Coarse	¾ in. – 3 in.
Fine	No. 4 – ¾ in.
SAND	No. 200 – No. 4
Coarse	No. 10 – No. 4
Medium	No. 40 – No. 10
Fine	No. 200 – No. 40
Fines (Silt or Clay)	Below No. 200

NOTE: Only sizes smaller than three inches are used to classify soils

CONSISTENCY

CLAYS & SILTS	BLOWS PER FOOT
VERY SOFT	0 – 2
SOFT	3 – 4
FIRM	5 – 8
STIFF	9 – 15
VERY STIFF	16 – 30
HARD	OVER 30

RELATIVE DENSITY

SANDS & GRAVELS	BLOWS PER FOOT
VERY LOOSE	0 – 4
LOOSE	5 – 10
MEDIUM DENSE	11 – 30
DENSE	31 – 50
VERY DENSE	OVER 50

NOTE: Number of blows using 140-pound hammer falling 30 inches to drive a 2-inch-OD (1⅜-inch ID) split-barrel sampler (ASTM D1586).

PLASTICITY OF FINE GRAINED SOILS

PLASTICITY INDEX	TERM
0	NON-PLASTIC
1 – 7	LOW
8 – 20	MEDIUM
Over 20	HIGH

DEFINITION OF WATER CONTENT

DRY
SLIGHTLY DAMP
DAMP
MOIST
WET
SATURATED

The number shown in **"BORING NO."** refers to the approximate location of the same number indicated on the "Boring Location Diagram" as positioned in the field by pacing or measurement from property lines and/or existing features, or through the use of Global Positioning System (GPS) devices. The accuracy of GPS devices is somewhat variable.

"DRILLING TYPE" refers to the exploratory equipment used in the boring wherein **HSA = hollow stem auger**, and the dimension presented is the outside diameter of the HSA used.

"N" in "BLOW COUNTS" refers to a 2-inch outside diameter split-barrel sampler driven into the ground with a 140 pound drop-hammer dropped 30 inches repeatedly until a penetration of 18 inches is achieved or until refusal. The number of blows, or "blow count", of the hammer is recorded for each of three 6-inch increments totaling 18 inches. The number of blows required for advancing the sampler for the last 12 inches (2nd and 3rd increments) is defined as the Standard Penetration Test (SPT) "**N**"-Value. Refusal to penetration is considered more than 50 blows per 6 inches. (Ref. ASTM D1586).

"R" in "BLOW COUNTS" refers to a 3-inch outside diameter ring-lined split barrel sampler driven into the ground with a 140 pound drop-hammer dropped 30 inches repeatedly until a penetration of 12 inch is achieved or until refusal. The number of blows required to advance the sampler 12 inches is defined as the "**R**" blow count. The "**R**" blow count requires an engineered conversion to an equivalent SPT N-Value. Refusal to penetration is considered more than 50 blows per foot. (Ref. ASTM D3550).

"CS" in "BLOWS/FT." refers to a 2½-in. outside diameter California style split-barrel sampler, lined with brass sleeves, driven into the ground with a 140-pound hammer dropped 30 inches repeatedly until a penetration of 18 inches is achieved or until refusal. The number of blows of the hammer is recorded for each of the three 6-inch increments totaling 18 inches. The number of blows required for advancing the sampler for the last 12 inches (2nd and 3rd increments) is defined as the "CS" blow count. The "CS" blow count requires an engineered conversion to an equivalent SPT N-Value. Refusal to penetration is considered more than 50 blows for a 6-inch increment. (Ref. ASTM D 3550)

"SAMPLE TYPE" refers to the form of sample recovery, in which **N** = Split-barrel sample, **R** = Ring-lined sample, **"CS"** = California style split-barrel sample, **G** = Grab sample, **B** = Bucket sample, **C** = Core sample (ex. diamond bit rock coring).

"DRY DENSITY (LBS/CU FT)" refers to the laboratory-determined dry density in pounds per cubic foot. The symbol **"NR"** indicates that no sample was recovered.

"WATER (MOISTURE) CONTENT" (% of Dry Wt.) refers to the laboratory-determined water content in percent using the standard test method ASTM D2216.

"USCS" refers to the "Unified Soil Classification System" Group Symbol for the soil type as defined by ASTM D2487 and D2488. The soils were classified visually in the field, and where appropriate, classifications were modified by visual examination of samples in the laboratory and/or by appropriate tests.

These notes and boring logs are intended for use in conjunction with the purposes of our services defined in the text. Boring log data should not be construed as part of the construction plans nor as defining construction conditions.

Boring logs depict our interpretations of subsurface conditions at the locations and on the date(s) noted. Variations in subsurface conditions and characteristics may occur between borings. Groundwater levels may fluctuate due to seasonal variations and other factors.

The stratification lines shown on the boring logs represent our interpretation of the approximate boundary between soil or rock types based upon visual field classification at the boring location. The transition between materials is approximate and may be more or less gradual than indicated.

DATE DRILLED: **12-14-15**
LOCATION: **See Location Diagram**
ELEVATION: **Not Determined**

BORING NO. 1

EQUIPMENT TYPE: **CME-75**
DRILLING TYPE: **7"HSA**
FIELD ENGINEER: **L.Anderson**

MOISTURE CONTENT (% OF DRY WT.)	DRY DENSITY (LBS/CU FT)	SAMPLE TYPE	SAMPLE	BLOW COUNTS	DEPTH (FEET)	USCS	GRAPHIC	SOIL DESCRIPTION
						SM		Silty SAND; brown/light brown, loose, damp
8.0	93	R		7				
		G						light brown
4.8	100	R		9	5			
6.1	112	R		31	10			medium dense, dry, cobbles
		N		17	15			
								BORING TERMINATED AT 16.5 FEET

N- STANDARD PENETRATION TEST
R- RING SAMPLE
NR- NO SAMPLE RECOVERY
G- GRAB SAMPLE
B- BUCKET SAMPLE

NOTES: **Groundwater Not Encountered**

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

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PROJECT: **CONEJO TRANSFER STATION**
JOB NO.: **3225JJ300**

PLATE **A-4**

BORING LOG

DATE DRILLED: **12-14-15**
LOCATION: **See Location Diagram**
ELEVATION: **Not Determined**

BORING NO. 2

EQUIPMENT TYPE: **CME-75**
DRILLING TYPE: **7"HSA**
FIELD ENGINEER: **L.Anderson**

MOISTURE CONTENT (% OF DRY WT.)	DRY DENSITY (LBS/CU FT)	SAMPLE TYPE	SAMPLE	BLOW COUNTS	DEPTH (FEET)	USCS	GRAPHIC	SOIL DESCRIPTION
						SP		SAND; some gravel and cobbles, light brown, medium dense, damp
2.3	105	R		16				
		G						light brown
3.0	117	R		25	5			
25.0	98	R		30	10	CL		CLAY; red brown, very stiff, wet
		N		15	15	SM-SC		Silty SAND; with clay, brown, medium dense, damp
								BORING TERMINATED AT 16.5 FEET

N- STANDARD PENETRATION TEST
R- RING SAMPLE
NR- NO SAMPLE RECOVERY
G- GRAB SAMPLE
B- BUCKET SAMPLE

NOTES: **Groundwater Not Encountered**

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

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PLATE **A-5**

BORING LOG

SOIL PROPERTIES

Boring No.	Depth (ft.)	Soil Class.	Initial Dry Density (pcf)	Initial Water Content (%)	Compression Properties			Expansion Properties		Plasticity		Percent Passing #200	Soluble Salts (ppm)	Remarks
					Surcharge (ksf)	Total Compression (%)		Surcharge (ksf)	Expansion (%)	Liquid Limit	Plasticity Index			
						In-Situ	After Saturation							
1	2-3	SM	87	2.3	.55	0.1								
					1.1	1.0								
					2.2	1.5	20.1							2
					4.4		23.0							2
1	0-5	SM		8.4							NP	17		
2	2-3	SP	108		.55	0.1								
					1.1	0.1								
					2.2	0.2	0.8							2
					4.4		1.5							2
2	0-5	SP		2.5							NP	4.5		

Note: Initial Dry Density and Initial Water Content are in-situ values unless otherwise noted. NP = Non-Plastic

Remarks

1. Compacted density (approx. 95% of ASTM D698 max. density at moisture content slightly below optimum.)
2. Submerged to approximate saturation.
3. Slight rebound after saturation.
4. Sample disturbance observed.

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PROJECT: **CONEJO TRANSFER STATION**

JOB NO.: **3225JJ300**

SOIL PROPERTIES

PLATE **B-1**