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Adam Fulton Johnson
Commissioner, District 4

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Commissioner, District 5

Gregory S. Shaffer
County Manager

February 13, 2025

SANTA FE COUNTY
IFB NO. 2025-0161-PW/TS
CONSTRUCTION SERVICES FOR
ARROYO HONDO TRAIL SEGMENTS #2 & #3
ADDENDUM NO. 2

Dear Proponents,

This addendum is issued to reflect the following immediately. It shall be the responsibility of interested Bidders to adhere to any changes or revisions to the IFB as identified in this Addendum No. 2. This documentation shall become permanent and made part of the departmental files.

Attachment A: Pre-Bid Agenda and Sign in sheet
Attachment B: Geo Tech Report
Attachment C: Arroyo Hondo Trail Segment 4 official bid tab

Please add this Addendum No. 2 to the original proposal documents and refer to proposal documents, hereto as such. This and all subsequent addenda will become part of any resulting contract documents and have effects as if original issued. All other unaffected sections will have their original interpretation and remain in full force and effect. Responders are reminded that any questions or need for clarification must be addressed to Timothy Sintas, Procurement Specialist Senior at tsintas@santafecountynm.gov.

QUESTIONS/ANSWERS:

1. Can you please provide a copy of the bid tabulation for Arroyo Hondo Trail Segment 4?

Answer: Bid tab for Arroyo Hondo Trail Segment 4, is posted on current Addendum 2, as Attachment C.

2. As an independent testing/inspection firm are we restricted on only bidding one (QA or QC). Are we able to bid on both? Or are we restricted in the bidding phase to only bid one?

Answer: QA services are being provided by BHI Inc. QC falls on the responsibility of the awarded contractor for construction services.

3. Per page 28, it shows a section of the walkway. Does the concrete walkway trail take the thickened edge throughout the entire length?

Answer: The concrete thickened edges are only required where Typical Section S3-3 or S3-4 is called for in the plans. These locations are generally at drainage crossings where Riprap (Class A) edge treatments are also called for.

4. Was there a GEO Technical report done on this project? If so, can you attach it to the next addendum?

Answer: Geo Report is posted on current Addendum 2 as Attachment B.

5. Page 62 shows what it appears to be 24" Striping going across the road, along with Yield Striping. Can you add quantity items for this work?

Answer:

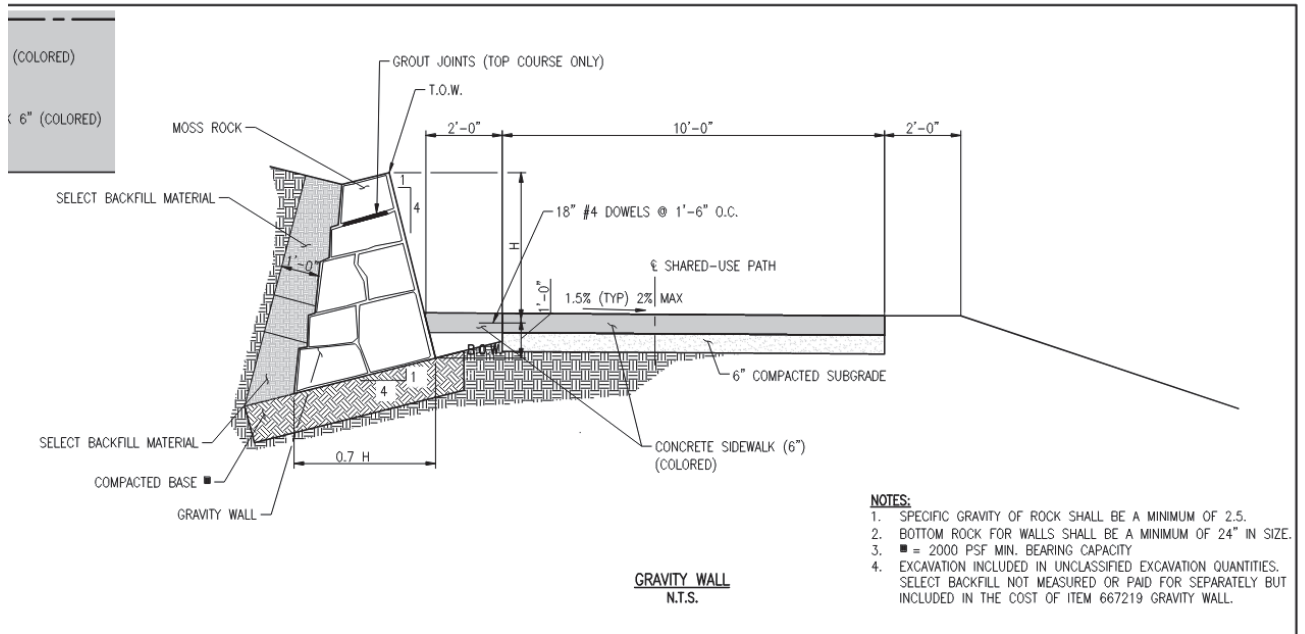
- Crosswalk Striping – 60 LF - Item 704704 – Hot Thermoplastic Pavement Markings 24"
- Yield Striping Triangles – 20 LF – Item 704728 - Hot Thermoplastic Pavement Marking Yield Line

6. What permits are required on this project? Besides NPDES, are there any other permits contractor needs prior to construction?

Answer: See SC7 on page 53 of the IFB.

7. The spec for the gravity wall, NMDOT 667219 has no information. Can you share more information or a detail on what the county of Santa Fe wants built?

Answer: Follow Project Special Provision Section 667a – Gravity Wall (Page 66 in the IFB) and plan details on plan sheet 26 and the detail below.



8. Where is the location of the site water? And how much per gallon or MG?

Answer: Replacing SC14 WATER FOR CONSTRUCTION on page 56 of the IFB with the below.

Contact:

City of Santa Fe Waste Water Division
Matilda (505) 955-4650
73 Paseo Real, Santa Fe, NM 87507

\$3.37/ 1000 gallons

Deposit fee

Vehicle inspection plus application

9. What surfacing items are to be removed? Per 601 removal of Surfacing 56 SY

Answer: Asphalt in Rancho Viejo Boulevard on segment 2 for the pedestrian refuge island.

10. Are there stationing on the 56 SY?

Answer: 77+12.00 to 77+22.00 (see sheet 4, summary of approximate quantity)

11. On segment 2, 607201 remove fence, item 24 down. Is that really 60 SY to remove fence or is it 60 LF?

Answer: This should be LF.



SANTA FE COUNTY

**NON-MANDATORY PRE-BID CONFERENCE
CONSTRUCTION SERVICES FOR THE
ARROYO HONDO TRAIL SEGMENTS 2 & 3**

**Rancho Viejo Fire Station Trailhead located at 37 Rancho Viejo Boulevard, SF, NM 87508
IFB No. 2025-0161-PW/TS
FEBRUARY 6, 2025
10:00 AM**

INTRODUCTIONS

Contracting Agency: Santa Fe County

- | | | |
|----------------------------|----------------------------------|------------------|
| • Timothy Sintas | Procurement Specialist Senior | Santa Fe County |
| • Robert Walton | Project Manager III | Santa Fe County |
| • Amanda Patterson-Sanchez | Procurement Planner Analyst | Santa Fe County |
| • Scott Belonger | Engineer of Record | Otak Engineering |
| • Keith Murphy | Construction Management Services | BHI Inc |
| • Alden Chato | NMDOT Representative | NMDOT |

Bid Documents

- **Complete Bid Documents are available on the Santa Fe County website at <https://www.santafecountynm.gov/finance/purchasing-division/current-bid-solicitations>**
- **Carefully read all bid documents for requirements, including the sample agreement for all terms and conditions.**
- **Bids are due no later than 2:00 pm, Thursday, February 27 2025, and delivered to the Santa Fe County Purchasing Division located at 102 Grant Avenue (First Floor), Santa Fe 87501.**
- **All bid forms must be completed, signed and included in the bid submittal as outlined on page 17 “Bid Forms” in the IFB. *Failure to include any of the listed documents in the bid submittal may be considered grounds for disqualification of the bidder and rejection of its bid.***

Qualifications:

- **All contractors and subcontractors must be registered with the N.M. Department of Workforce Solutions for all work over \$60,000 on day of bid. **All contractors and subs must be registered as “Active” the day of bid opening.****
- **Subcontractor Listing Form must be completed with all required information. For all trades that are listed “only one bid received” or “no bid received”, the Contractors must**

list the name, city, county or place of business and the trade of all businesses contacted for quote.

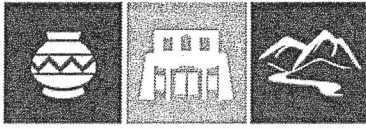
- Bidders must be registered on NMDOT's Prequalified Contractors and Subcontractors list at time of bid opening.
- Construction Observation Services will be provided by BHI Inc.
Construction observation services: Include preconstruction services, construction management and inspection, project closeout and certification, as well as quality assurance and materials testing.

Miscellaneous:

- **Addendum 01** (Sample of Santa Fe County construction contract) can be found at the link below:
<https://www.santafecountynm.gov/finance/purchasing-division/current-bid-solicitations>
- **Last Day for Questions:** Thursday, February 11, 2025 via e-mail to Timothy Sintas at tsintas@santafecountynm.gov (*Only questions answered by formal written addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.*)
- **Addendum Issued:** Responses to questions received, pre-bid conference agenda and sign-in sheet will be issued Friday, February 14, 2025 and will be posted to the Santa Fe County website and sent to all who have returned the Acknowledgement of Receipt form to be placed on the distribution list.
- **Bid Schedule:**
 - Bid Opening: Thursday, February 27, 2024**
 - Location:** Santa Fe County Purchasing Division,
102 Grant Avenue 1st Floor, Santa Fe, N.M. 87501
 - Time:** 2:00 PM
- Basis of Award: The lowest, **responsive** base.
- Project Duration: 360 calendar days.

Project Information

- The Santa Fe County Public Works Department requests bids for the purpose of procuring a licensed, insured, and qualified Contractor to provide construction services for the Arroyo Hondo Trail Segments 2 & 3 construction plans from Otak and technical specification Build America, Buy America Act (BABAA) requirements, NMDOT T/LPA requirements apply to this project.



SANTA FE COUNTY

NON-MANDATORY PRE-BID CONFERENCE

IFB No. 2025-0161-PW/TS

ARROYO HONDO TRAIL SEGMENTS 2 AND 3

Rancho Viejo Fire Station Trailhead located at 37 Rancho Viejo Boulevard, SF, NM 87508

February 06, 2025 AT 10:00 AM

NAME	COMPANY	TELEPHONE	E-MAIL ADDRESS
Timothy Sintas <i>[Signature]</i>	SFC-Purchasing	(505) 992-6745	tsintas@santafecountynm.gov
Amanda Patterson- Sanchez <i>[Signature]</i>	SFC-Purchasing	505-992-6753	apatterson-sanchez@santafecountynm.gov
Robert Walton	SFC- Public Works	505-986-6364	rhwalton@santafecountynm.gov
ISAIAH CRUZ	STAR PAVING Co.	505-975-3201	Monica@STARPAVING.com
PHILIP LOPEZ	STAR PAVING CO.	505-304-6939	PHILIP@STARPAVING.COM
Sean Moore	PACE Pacific	505-331-3885	smoore@pacepacific.com
JUSTIN DEATON	Pace Pacific	6026893918	jdeaton@pacepacific.com
Nathan Tschanz	Geotek	651-592-0411	ntschanz@Geotekusa.com
JD DORCAS	MERIDIAN - CONTRACTING	505 872 2841	T.MUSGRAVE@MERIDIANCON.MEET
Keith Murphy	Behannon Huston	505 934 6398	kmurphy@bhinc.com
Nick Chavez	L-Fam Constructors	505 7363-4844	Nick@L-famconstructors.com

NAME	COMPANY	TELEPHONE	E-MAIL ADDRESS
BRUCE SMITH	GME GENERAL BUILDING	(505) 577-4028	BRUCE@GMEGENERALBUILDING.COM
Curt Temple	SFC		CTemple@SantafeCountyNM.gov
DAN ANDERSON	SFC	505 470 1394	danderson@santafecountynm.gov
Brandon Delgado	SFC	(505) 795-4953	BDelgado@santafecountynm.gov
ALDEN CHATO	NMDOT	505-412- ⁵⁷⁸⁹ 88	ALDEN.CHATO@DOT.NM.GOV

GEO-TEST

**GEOTECHNICAL
ENGINEERING SERVICES
JOB NO. 1-60813
ARROYO HONDO TRAIL
SANTA FE COUNTY, NEW MEXICO**

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PREPARED FOR:

LORIS & ASSOCIATES, INC.

November 25, 2016
File No. 1-60813

Loris & Associates, Inc
100 Superior Plaza Way
Superior, Colorado 80027

Attn: Scott Belonger, P.E.

RE: Geotechnical Engineering Services
Arroyo Hondo Trail
Santa Fe County, New Mexico

Dear Mr. Belonger:

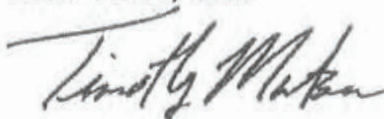
Submitted herein is the Geotechnical Engineering Services report for the above referenced project. The report contains the results of our field investigation, laboratory testing and recommendations for design and construction of the trail, as well as recommendations for two box culverts and two pedestrian bridges.

It has been a pleasure to serve you on this project. If you should have any questions, please contact this office.


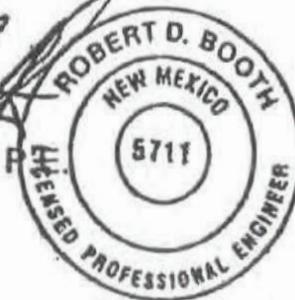
Respectfully submitted:

Reviewed by:

GEO-TEST, INC.



Timothy Matson
Engineering Geologist


Robert D Booth, P.E.


cc: Addressee (3)

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TABLE OF CONTENTS

INTRODUCTION 1

PROPOSED CONSTRUCTION..... 1

FIELD EXPLORATION 2

LABORATORY TESTING..... 2

SITE CONDITIONS 2

SUBSURFACE SOIL CONDITIONS..... 3

CONCLUSIONS AND RECOMMENDATIONS..... 3

FOUNDATIONS..... 4

TRAIL PAVEMENT 7

SITE GRADING 8

CONSTRUCTION EXCAVATIONS 9

MOISTURE PROTECTION 9

FOUNDATION REVIEW AND INSPECTION 10

CLOSURE 10

OVER ALL TRAIL PLAN..... 12

BORING LOCATION MAPS 13

BORING LOGS..... 18

SUMMARY OF LABORATORY RESULTS 43

GRAIN SIZE DISTRIBUTION 47

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INTRODUCTION

This report presents the results of a geotechnical investigation performed by this firm for the proposed Arroyo Hondo Trail to be constructed in Santa Fe County, New Mexico.

The objectives of this investigation were to:

- 1) Evaluate the nature and engineering properties of the subsurface soils underlying the proposed trail alignment.
- 2) To provide recommendations for design and construction of the proposed trail, box culverts, pedestrian bridges, as well as criteria for site grading.

The investigation includes subsurface exploration, selected soil sampling, laboratory testing of the samples, performing an engineering analysis and preparation of this report.

PROPOSED CONSTRUCTION

It is understood that the project consists of a network of new trails to be located in the Rancho Viejo area of Santa Fe County with a total length of approximately 6 miles, as shown on Figure 1, Over All Trail Plan. The trail is divided into 5 separate segments; however, this report addresses segments 1 through 4. Recommendations for segment 5 will be presented in a subsequent report. Two box culverts and two pedestrian bridges are also planned. One of the box culverts will cross beneath the old on-ramp to I-25 from the east frontage road and the other will be next to existing box culverts crossing under NM-14. The southern pedestrian bridge will cross over Cañada del Rancho arroyo and the northern bridge will cross the Arroyo Hondo. The trail will be cut and or filled to provide for a level trail surface.

The proposed box culverts are anticipated to be for pedestrian traffic only and not be subject to storm water runoff. The proposed bridges will be single span pre-fabricated metal truss style type bridges, about 10 feet wide with a span length of about 100 feet. Structural loads on the abutments are 25 kip dead load, 50 kip uniform live load, 12 kip vehicle load and a 14 kip horizontal live load.

Should structural loads or other project details vary significantly from those outlined above, this firm should be notified for review and revision of

recommendations contained herein.

FIELD EXPLORATION

Twenty-five (25) exploratory borings were drilled to depths ranging from approximately 6 to 25½ feet below existing grades. The approximate locations of the borings are shown on the accompanying Boring Location Maps, Figure 2-6. The soils encountered in the borings were continuously examined, visually classified and logged during the drilling operation. The boring logs are presented in a following section of this report. Drilling was generally accomplished using a truck mounted drill rig equipped with 5.5-inch diameter continuous flight hollow stem auger. Subsurface materials were sampled at five-foot intervals or less in the borings utilizing an open tube split barrel sampler driven by a standard penetration test hammer. In areas not accessible to our truck mounted drill rig, the drilling was accomplished using hand augers and samples of the subsurface materials were collected from the auger cuttings.

LABORATORY TESTING

Selected samples were tested in the laboratory to determine certain engineering properties of the soils. Moisture contents were determined to evaluate the various soil deposits both with depth and laterally. The results of these tests are presented on the boring logs.

Sieve analysis and Atterberg limits tests were performed on selected samples to aid in soil classification. The results of these tests are presented in the Summary of Laboratory Results and on the individual test reports.

SITE CONDITIONS

The area of the proposed trail starts near the parking lot for the Rail Runner at the NM 599 stop. The proposed trail extends through commercial and residential developments, and then trends in a mostly northeast direction, generally following the Arroyo Hondo and connecting with trails around the Dinosaur Trail area and the La Entrada subdivision in Rancho Viejo. Based on the Preliminary Geologic Map of the Turquoise Hill 7.5-minute quadrangle, most of the area is underlain by the Ancha Formation as well as younger fluvial terrace deposits, valley fill and alluvium confined to modern drainages.

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SUBSURFACE SOIL CONDITIONS

As indicted by the exploratory borings, the soils underlying the proposed trail consist predominantly of interbedded low plasticity silty clayey sands, sandy clays, silty clays, as well as non-plastic silty sands and relatively clean sands with various amounts of gravel. These soils are generally loose to medium dense or moderately firm to firm at the surface, becoming denser and firmer with depth. Detailed soil descriptions are presented on the boring logs.

Soil moisture contents were generally low throughout the depth of the borings and no groundwater was encountered.

CONCLUSIONS AND RECOMMENDATIONS

Trail

Based on standard penetration and laboratory testing the native soils underlying the proposed trail are predominately medium dense in their present condition and are considered suitable to provide reliable support of the proposed trail. Accordingly, the proposed trail can be constructed directly on the densified native soils or on structural fill.

Box Culverts

The soils encountered at the approximate depth of the proposed box culverts are medium dense and considered suitable to provide reliable support of the box culverts as planned. Based on the above, the box culvert can bear on densified native soils or on properly compacted structural fill. Detailed recommendations for the design of the box culverts are presented in the following sections of this report.

Pedestrian Bridges

The soils underlying the southern pedestrian bridge are moderately firm on the southern abutment and dense on the northern abutment. The soils for the northern pedestrian bridge are medium dense on both abutments. These soils, in their present condition are considered suitable to provide reliable support for the bridges. Based on the subsurface soil conditions underlying the proposed bridge abutments, along with the magnitude of loads involved, it is recommended that the proposed bridge abutments be supported on shallow spread-type footings bearing directly on densified native soils or properly compacted structural fill. However, if the abutments will be subject to scour,

deep foundations may be necessary. Accordingly, as an alternate to shallow foundations, recommendations for the design of deep foundations are also provided. Although various types of deep foundations could be used, considering the subsurface soil conditions along with the magnitude of the foundations loads involved, the use of drilled, straight, cast-in-place concrete piers is considered the most economical deep foundation system.

Detailed recommendations for the design of shallow spread-type footings, as well as drilled pier foundations, along with recommendations for the required earthwork, are presented in the following sections of this report.

FOUNDATIONS

Box Culverts

The base of the culverts will act as self-supporting mat-type foundations. An allowable soil bearing pressure of 1,500 pounds per square foot should not be exceeded for mat foundation bearing on the native soils or on structural fill. This is based on the site preparation being accomplished as recommended in a following section of this report.

If the culverts have wing-walls, shallow spread-type footings should be used for support of the wing walls and they should also bear on densified native soils or on properly compacted structural fill soil placed as recommended in the site grading section of this report. An allowable soil bearing pressure of 2,000 pounds per square foot is recommended for the design of shallow spread-type footings. Minimum widths of continuous footings should be 1.33 feet. Footings, as well as any upstream or downstream cut off walls, should be established a minimum of 2.0 feet below the lowest adjacent grade.

The bearing values recommended above apply to full dead load plus realistic live loads, and can be safely increased by one-third for loading of short durations such as wind or seismic forces.

Settlement of the box culvert or footings designed and constructed as recommended herein are estimated not to exceed 1.0 inch for the soil moisture contents encountered during test drilling or compaction moisture contents introduced during construction. Differential movements are estimated not to exceed 75 percent of total movements.

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Lateral Loads

Resistance to lateral forces will be provided by soil friction between the base of the culverts and footings and by passive earth resistance against their sides. A coefficient of friction of 0.40 should be used for computing the lateral resistance between bases of the culverts and footings and the soil. With backfill as recommended in the site grading section of this report, a passive soil resistance equivalent to a fluid weighing 325 pounds per cubic foot should be used for analysis.

Lateral pressure against culvert walls and any wing walls will depend upon their degree of restraint. Walls which are restrained so as to limit movement at the top to less than 0.001 times the height of the wall should be designed for an "at rest" earth pressure of 55 pounds per square foot per foot of depth. Walls free to move at the top should be designed of an "active" earth pressure equal to 35 pounds per square foot per foot of depth. The recommended equivalent fluid pressures are applicable to a condition of horizontal backfill without surcharge loads. Analysis of earth pressures produced by sloping backfill or surcharge loads can be provided by this firm upon request.

Pedestrian Bridges

Shallow Foundations

Conventional spread-type footings, bearing directly on densified native soils, or on properly compacted structural fill, are recommended for the support of the bridge abutments. An allowable soil bearing pressure of 2,000 pounds per square foot is recommended for footing design. This bearing pressure applies to full dead plus realistic live loads, and can be safely increased by one-third for totals loads including wind and seismic forces. The minimum recommended width of the footing is 24 inches. Footings should be founded at a minimum depth of 2.0 feet below lowest adjacent finished grade, or at a depth of 2.0 feet below the maximum depth of scour, whichever is the greater depth.

Maximum settlement of footings designed and constructed as recommended herein are estimated not to exceed 1.0 inch for the soil moisture contents encountered during test drilling or compaction moisture contents introduced during construction. Differential movements are estimated not to exceed 75 percent of total movements. Significant moisture increases in the foundation soils would create additional settlements.

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Drilled Pier Foundations

If the bridge abutments are subject to scour to greater depths than practicable to found spread-type footings, the bridge abutments can be founded on deep foundations extending below the depth of scour. Estimated allowable downward capacities for various diameters of drilled cast in-place concrete pier foundations versus depth should be established using an allowable end bearing pressure on the order of 4,000 pounds per square foot (psf) and an average side shear on the order of 1,000 psf below the depth of scour. The minimum recommended depth of pier is 10.0 feet below existing natural grade. The allowable downward capacities apply to full dead plus realistic live loads and can be increased by one-third for total loads including wind and seismic loads.

A passive soil resistance equal to an equivalent fluid pressure of 800 pounds per cubic foot against the sides of isolated drilled piers below the depth of scour can be used to analyze lateral resistance. Piers can be considered isolated when they are spaced at least three diameters center-to-center perpendicular to the line of thrust and 6 diameters parallel to the line of thrust. Resistance to lateral forces on the drilled pier foundations can be analyzed by this firm using the computer program LPILE Plus for windows, Version 5.0 by Ensoft, Inc., once the configuration of the piers and depth of scour is established and lateral forces are known.

Straight, drilled pier excavations should be advanced with a single flight auger, or bucket auger bits, to the design depth. It should be verified by observation and measurement that the excavations are open to that depth. The auger should then be placed back into the excavations and two additional passes made to clean loose material present in the bottom of the excavations.

It is estimated that only minor caving and/or sloughing will occur in the surficial soils during the drilling operations. Moderate to heavy caving and sloughing is anticipated in drilled pier excavations that extend into the relatively clean sands. Accordingly, casing and/or slurry drilling methods may be necessary to control concrete over-runs.

Concrete should be placed through a hopper or other device so that it is channeled in such a manner to free fall and clear the walls of the excavation and reinforcing steel until it strikes the bottom. Adequate compaction will be achieved by free fall of the concrete up to the top 5 feet. The top 5 feet of concrete should be vibrated in order to achieve proper compaction. The concrete should be designed from a strength standpoint so that the slump

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during placement is in the range of 4 to 6 inches.

Continuous observation of the construction of drilled piers should be performed by a representative of the geotechnical engineer to insure that they meet the requirements.

TRAIL PAVEMENT

It is recommended that the trail section can be constructed with crusher fines, asphaltic concrete or Portland cement concrete. Prior to placement of any fill or construction of the trail tread, the upper 8-inches of the existing native subgrade soils should be densified prior to placement of structural fill or construction as recommended in the Site Grading section of this report.

If crusher fines are used for the mixed-use trail, a minimum of 4-inches of crusher fines should be placed over a minimum of 8-inches of compacted native soils or on properly compacted structural fill. The crusher fines should have a plasticity index of 15 or less and should have a maximum of 20 percent passing the 200 sieve. The crusher fines should be moisture conditioned to +/- 2 percent and compacted to a minimum of 95 percent of the maximum density as determined in accordance with ASTM D-1557.

If asphaltic concrete is used, it should consist of a minimum of 2-inches of asphaltic concrete over a minimum of 8-inches of compacted native soils or on properly compacted structural fill. The asphaltic pavement should conform to NMSHTD criteria.

If Portland cement concrete pavement is used, the concrete should have minimum thickness of 4-inches and be placed over at least 8-inches of compacted native subgrade soils, or structural fill. The concrete should be air entrained, have a minimum compressive strength of 2,000 pounds per square inch or greater, and be constructed with load transfer joints designed for light maintenance vehicular traffic.

If desired as a working surface, a course of granular base can be placed beneath asphaltic concrete or the Portland cement concrete. Where granular base is used, it should have a plasticity index of no greater than 3 and meet the following grading requirements:

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Sieve Size (Square Openings)	Percent Passing by Dry Weight
1 Inch	100
¾ Inch	85-100
No. 4	45-95
No. 200	0-8

The granular base should be compacted to at least 95 percent of maximum dry density as determined in accordance with ASTM D1557.

SITE GRADING

The following general guidelines should be included in the project construction specifications to provide a basis for quality control during earthwork operations. It is recommended that all structural fill and backfill be placed and compacted under engineering supervision and in accordance with the following:

- 1) After clearing and grubbing, removal of any existing man-made fill, and making any required excavations, the exposed native soils should be densified prior to construction or placement of structural fill.
- 2) Densification of the exposed native soils should consist of scarifying to a depth of 8 inches, moisture conditioning to within 2 percent of the optimum moisture content and compacting the area to a minimum of 95 percent of maximum dry density as determined in accordance with ASTM D-1557.
- 3) The results of this investigation indicate that most of the native soils will be suitable for use as structural fill; however, some on site blending may be required to meet the specifications for structural fill. Any imported material must also meet the criteria for structural fill. All structural fill and backfill should be free of vegetation and debris, and contain no rocks larger than 3 inches. Gradation of the backfill material, as determined in accordance with ASTM D-422, should be as follows:

Size	Percent Passing
3 inch	100
No. 4	60 - 100
No. 200	15 - 60

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- 4) The plasticity index of the structural fill should be no greater than 15 when tested in accordance with ASTM D-4318.
- 5) Fill or backfill, consisting of soil approved by the geotechnical engineer, shall be placed in 8 inch loose lifts and compacted with approved compaction equipment. Loose lifts should be reduced to 4 inches if hand held compaction equipment is used. All compaction of fill or backfill shall be accomplished to a minimum of 95 percent of the maximum dry density as determined in accordance with ASTM D-1557. The moisture content of the structural fill during compaction should be within 2 percent of the optimum moisture content.
- 6) Tests for degree of compaction should be determined by the ASTM D-1556 method or ASTM D-6938. Observation and field tests should be carried on during fill and backfill placement by the geotechnical engineer to assist the contractor in obtaining the required degree of compaction. If less than 95 percent is indicated, additional compaction effort should be made with adjustment of the moisture content as necessary until 95 percent compaction is obtained.

CONSTRUCTION EXCAVATIONS

Excavated slopes for construction should be designed and constructed in accordance with 29 CFR 1926, Subpart P, and any applicable state or local regulations. Excavated permanent slopes should not exceed 2 to 1 (horizontal to vertical). Temporary construction excavations should be maintained at slopes of 1.5 to 1 (horizontal to vertical).

MOISTURE PROTECTION

The trail should be graded to drain and not allow any ponding on the surface of the paved areas. Positive drainage should also be provided away from the perimeter of the trail. Where possible, drainage should be routed around or under the trail and not be allowed to cross over or enter the paved trail.

Precautions should be taken during and after construction to minimize moisture increases of bridge foundation soils or behind culvert walls. It is recommended that positive drainage be provided away from the culvert walls and abutments to prevent ponding adjacent to the foundations. Backfill should be well compacted and should meet the specifications outlined in the site grading section of this report.

The foregoing recommendations should only be considered minimum

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requirements for overall site development. It is recommended that a civil/drainage engineer be consulted more detailed grading and drainage recommendations.

FOUNDATION REVIEW AND INSPECTION

This report has been prepared to aid in the evaluation of the trail alignment and to assist in the design of this project. It is recommended that the geotechnical engineer be provided the opportunity to review the final design drawings and specifications in order to determine whether the recommendations in this report are applicable to the final design. Review of the final design drawings and specifications will be noted in writing by the geotechnical engineer.

Variations from soil conditions presented herein may be encountered during construction of this project. In order to permit correlation between the conditions encountered during construction and to confirm recommendations presented herein, it is recommended that the geotechnical engineer be retained to perform sufficient review during construction of this project. Observation and testing should be performed during construction to confirm that suitable fill soils are placed upon competent materials and properly compacted.

CLOSURE

The data and analyses presented herein are:

- 1) Based upon our evaluation and interpretation of the findings of the field and laboratory program.
- 2) Based upon an interpolation of soil conditions between and beyond the explorations.
- 3) Subject to confirmation of the conditions encountered during construction.
- 4) Based upon the assumption that sufficient observation will be provided during construction.
- 5) Prepared in accordance with generally accepted professional geotechnical engineering principles and practice.

We make no other warranty, either expressed or implied. Any person using

this report for bidding or construction purposes should perform such independent investigation as he deems necessary to satisfy himself as to the surface and subsurface conditions to be encountered and the procedures to be used in the performance of work on this project. If conditions encountered during construction appear to be different than indicated by this report, this office should be notified.

This report has been prepared for the sole use of Loris and Associates, Inc., specifically to aid in the design of the proposed Arroyo Hondo Trail, Segments 1 through 4, and associated box culverts and pedestrian bridges to be constructed in Santa Fe County, New Mexico, and not for the use by any third party.

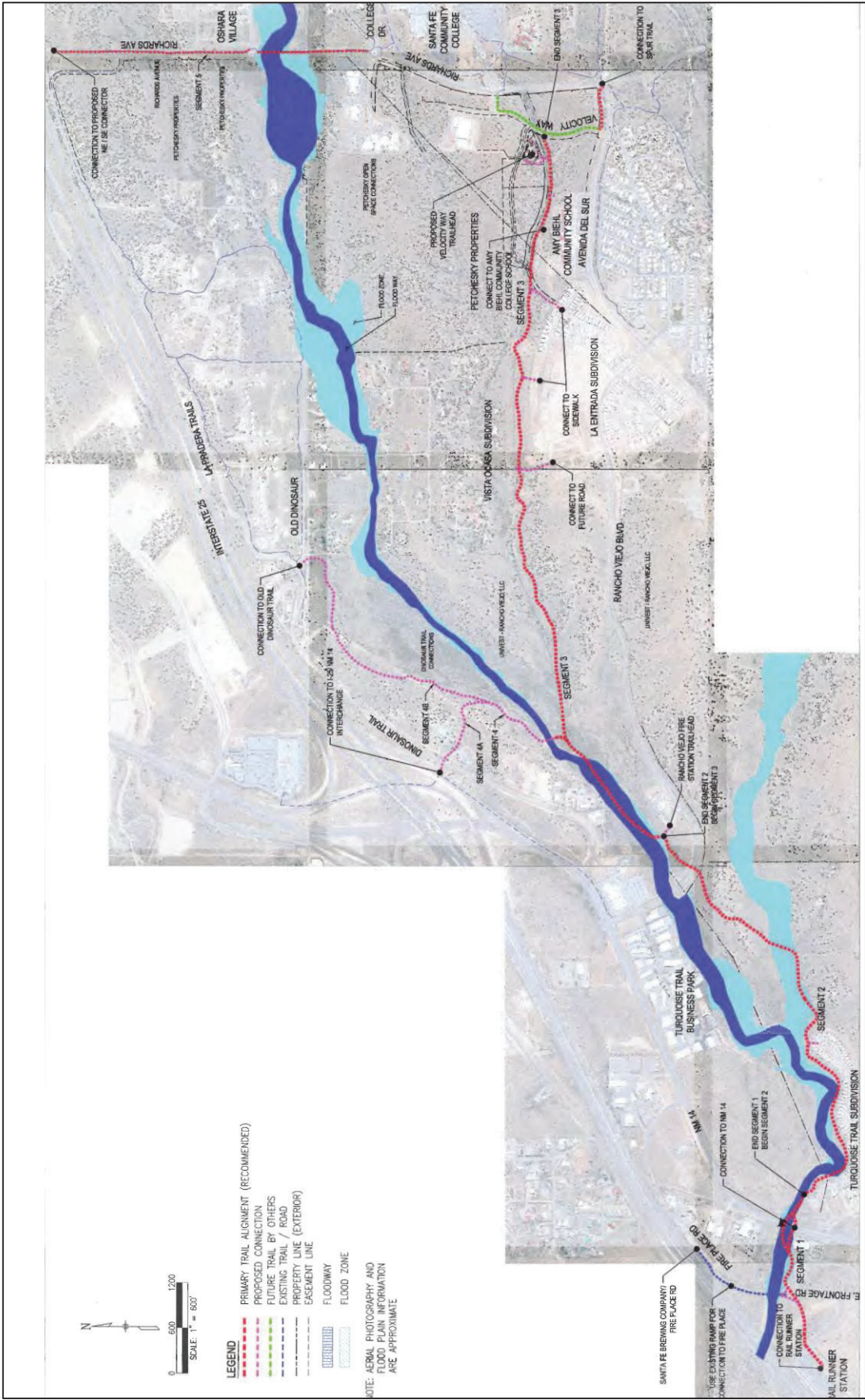
All soil samples will be discarded 30 days after the date of this report unless we receive a specific request to retain the samples for a longer period of time.

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OVERALL TRAIL PLAN



Arroyo Hondo Trail
 Santa Fe, New Mexico
 Job No. 1-60813

Figure 1



BORING LOCATION MAP



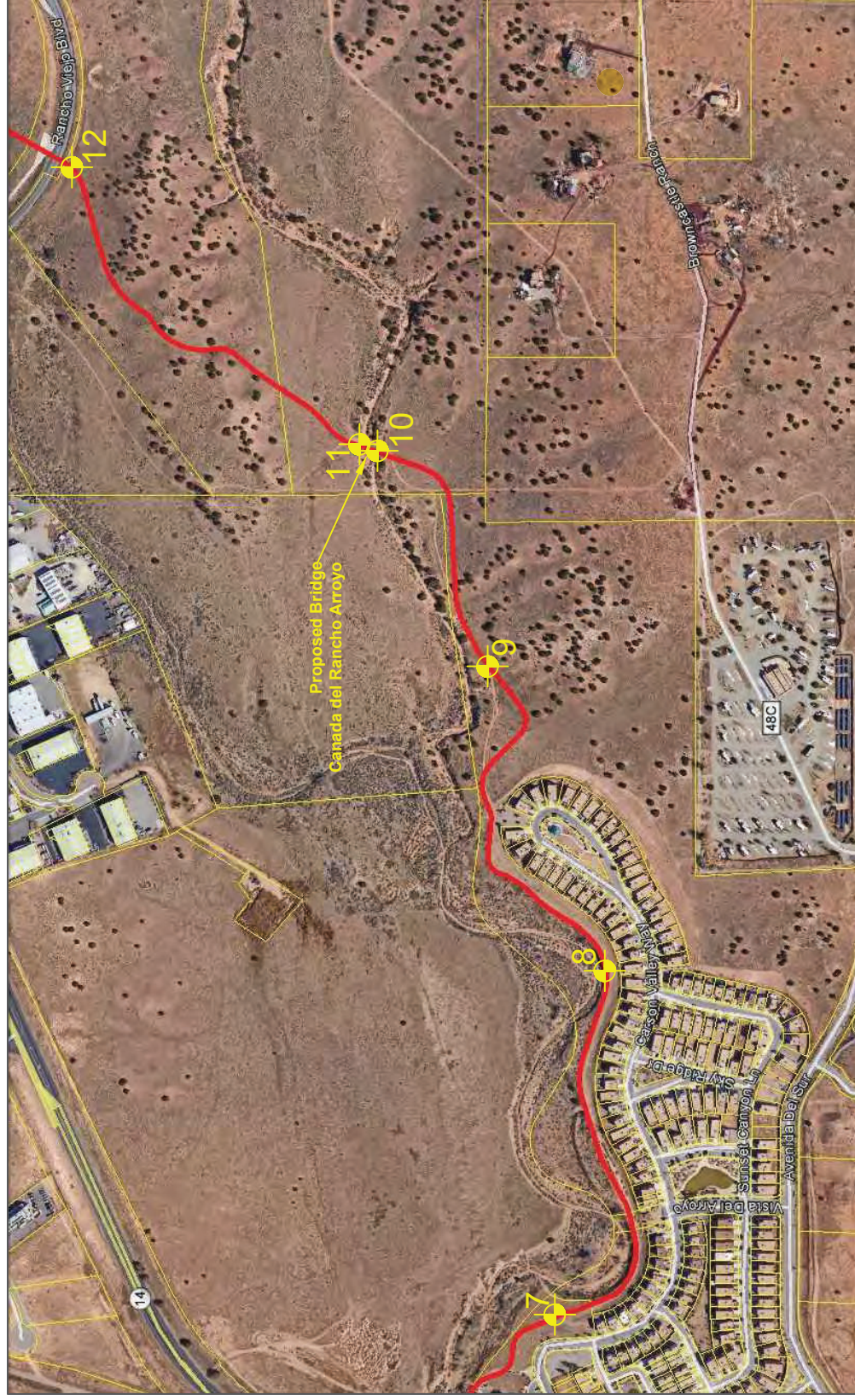
Arroyo Hondo Trail
Santa Fe, New Mexico
Job No. 1-60813



GEO-TEST
GEOTECHNICAL ENGINEERING
AND MATERIAL TESTING

Figure 2

BORING LOCATION MAP

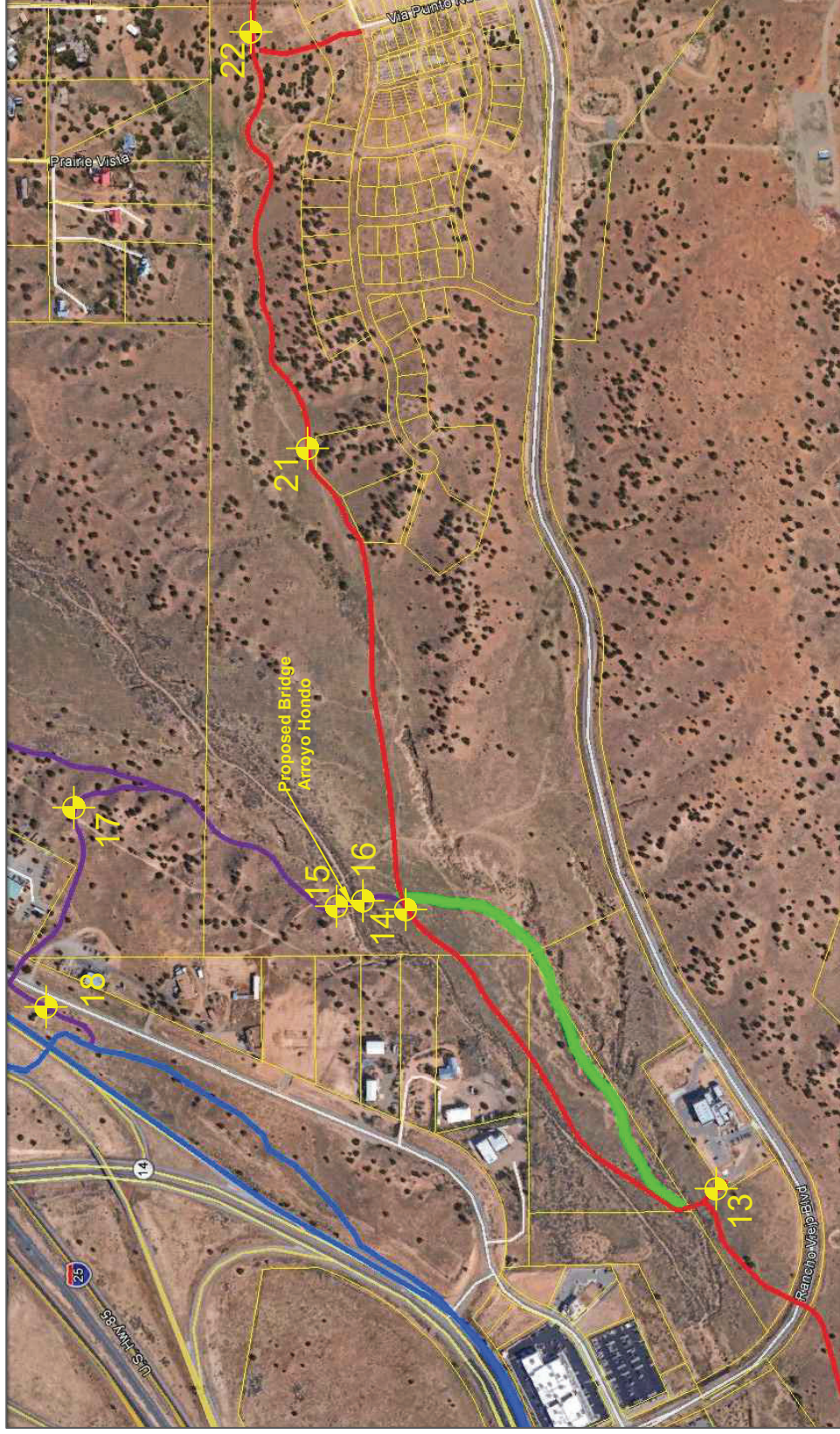


Arroyo Hondo Trail
Santa Fe, New Mexico
Job No. 1-60813

Figure 3



BORING LOCATION MAP



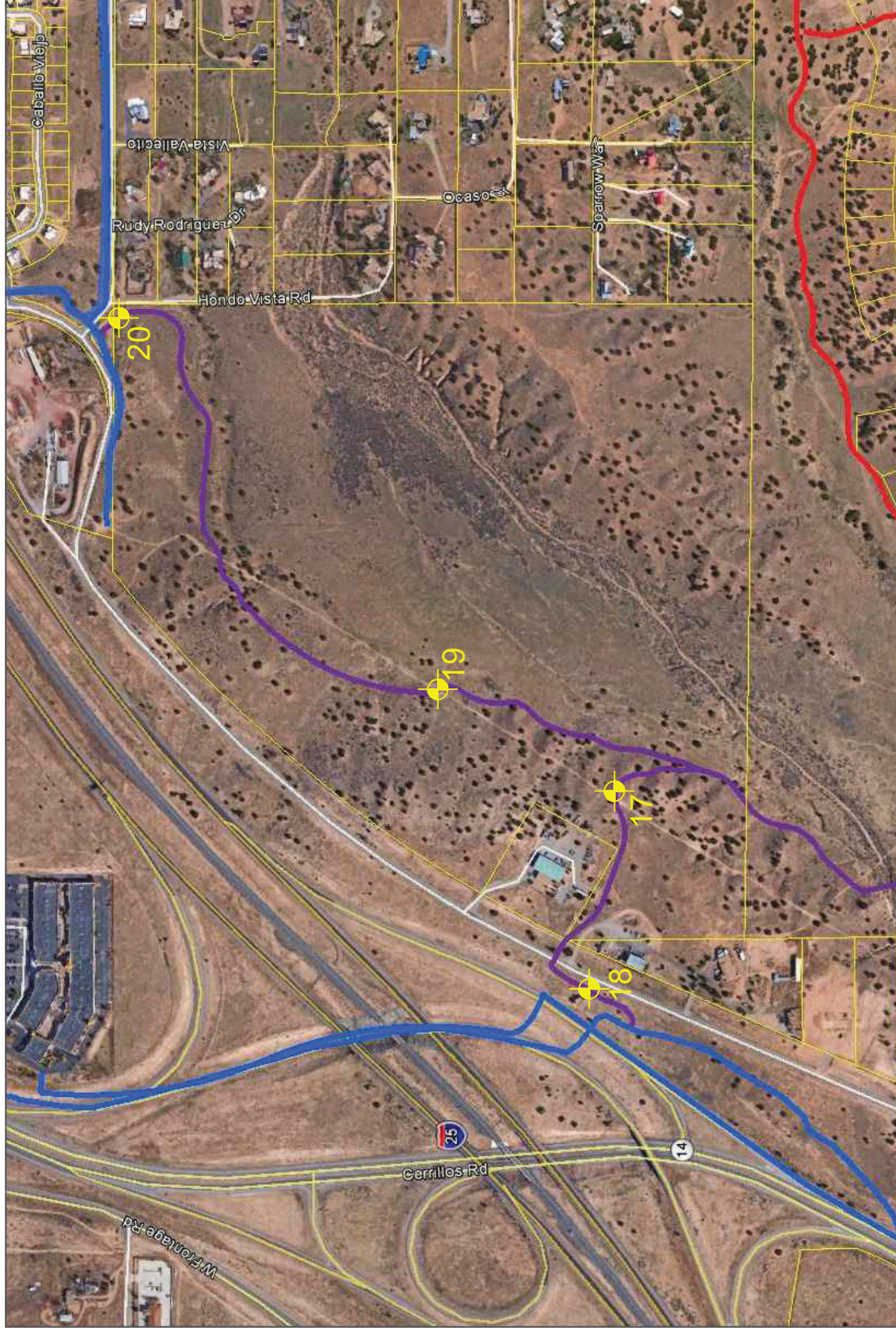
Arroyo Hondo Trail
Santa Fe, New Mexico
Job No. 1-60813



Figure 5

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GEOTECHNICAL ENGINEERING
AND MATERIAL TESTING

BORING LOCATION MAP



Arroyo Hondo Trail
Santa Fe, New Mexico
Job No. 1-60813

Figure 6



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GEOTECHNICAL ENGINEERING
AND MATERIAL TESTING



Project: Arroyo Hondo Trail

Date: 11/07/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 1

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE		
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft	
									20 40 60 80	
			SS	6-4-5 9	8					9
			SS	8-9-9 18	9		SC-SM	SILTY, CLAYEY SAND, low plasticity, loose to medium dense, slightly moist, brown		18
5			SS	10-10-10 20	9					20
								Stopped Auger @ 4.5 Stopped Sampler @ 6 feet		
10										

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16

LEGEND

SS - Split Spoon
 AC - Auger Cuttings
 UD/SL - Undisturbed Sleeve

AMSL - Above Mean Sea Level
 CS - Continuous Sampler
 UD - Undisturbed
 ST - Shelby Tube

Stratification lines represent approximate boundaries between soil types. Transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.



Project: Arroyo Hondo Trail

Date: 11/16/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 2

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE					SUBSURFACE PROFILE	
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION
5			SS	9-10-10 20	6		SM	SILTY SAND, fine to coarse grained, non-plastic, medium dense, slightly moist, brown *interbedded gravels between 5 and 10 feet
			SS	14-11-11 22	3			
10			SS	5-17-14 31	2		SW-SM	SAND with SILT, fine to medium grained, non-plastic, dense to very dense, slightly moist to dry, pink/brown
15			SS	24-25-26 51	2			
20			SS	27-50/6" 50/6"	1			Stopped Auger @ 19 feet Stopped Sampler @ 20 feet

N blows/ft	
20	40 60 80
20	
22	
31	
51	

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDI 11/28/16

LEGEND

SS - Split Spoon
AC - Auger Cuttings
UD/SL - Undisturbed Sleeve

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Project: Arroyo Hondo Trail

Date: 11/16/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 3

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE						
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft					
									20	40	60	80		
5			AC		5		FILL	SILTY SAND, fine to coarse grained, non-plastic, medium dense, slightly moist, brown/red *misc. trash debris between 7 and 9 feet						
			SS	12-11-14 25	6									
			AC SS	50/0" 50/0"										
10								Auger & Sampler Refusal @ 9 feet						
15														
20														
25														

LEGEND

SS - Split Spoon
 AC - Auger Cuttings
 UD/SL - Undisturbed Sleeve

AMSL - Above Mean Sea Level
 CS - Continuous Sampler
 UD - Undisturbed
 ST - Shelby Tube

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LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16



Project: Arroyo Hondo Trail

Date: 11/07/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 4

During Drilling: none

After 24 Hours:

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE		
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft	
			SS	5-4-5 9	6					20 40 60 80
			SS	8-7-7 14	6		SC	CLAYEY SAND, low plasticity, loose to medium dense, slightly moist, brown		
5			SS	8-9-10 19	6					
								Stopped Auger @ 4.5 feet Stopped Sampler @ 6 feet		
10										

LEGEND

- SS - Split Spoon
- AC - Auger Cuttings
- UD/SL - Undisturbed Sleeve

- AMSL - Above Mean Sea Level
- CS - Continuous Sampler
- UD - Undisturbed
- ST - Shelby Tube

Stratification lines represent approximate boundaries between soil types. Transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.



Project: Arroyo Hondo Trail

Date: 11/14/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 5

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE	
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft
5		7-8-9 17	SS	8			CL-ML	SANDY, SILTY, CLAY, low plasticity, firm, slightly moist to dry, brown	17
		8-10-11 21	SS	6					21
10		5-7-13 20	SS	1			SP-SM	SAND with SILT and GRAVEL, fine to coarse grained, non-plastic, medium dense to very dense, dry, brown	20
15		20-20-20 40	SS	1					40
20		32-50/6" 50/6"	SS	2					
25									

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL.GPJ GEO TEST.GDT 11/28/16

LEGEND

SS - Split Spoon
AC - Auger Cuttings
UD/SL - Undisturbed Sleeve

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Project: Arroyo Hondo Trail

Date: 11/07/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 6

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE		
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft	
			SS	7-8-12 20	6					
			SS	7-10-17 27	6		CL	SANDY CLAY, low plasticity, firm, slightly moist to dry, brown		
5			SS	9-10-14 24	5					
								Stopped Auger @ 4.5 feet Stopped Sampler @ 6 feet		
10										

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16

LEGEND

SS - Split Spoon
AC - Auger Cuttings
UD/SL - Undisturbed Sleeve

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Project: Arroyo Hondo Trail

Date: 11/07/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 7

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE		
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft	
			SS	4-5-4 9	6					
			SS	5-6-7 13	7		CL	SANDY CLAY, low plasticity, moderately firm to firm, slightly moist to dry, brown		
5			SS	7-10-9 19	7					
								Stopped Auger @ 4.5 feet Stopped Sampler @ 6 feet		
10										

LOG OF TEST BORING - 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16

LEGEND

SS - Split Spoon
 AC - Auger Cuttings
 UD/SL - Undisturbed Sleeve

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Project: Arroyo Hondo Trail

Date: 11/07/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 8

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE				
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft			
			SS	7-10-11 21	10							
			SS	6-12-17 29	9		CL-ML	SILTY CLAY with SAND, low plasticity, firm to very firm, slightly moist, brown				
			SS	20-23-21 44	8							
								Stopped Auger @ 4.5 feet Stopped Sampler @ 6 feet				

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16

LEGEND

SS - Split Spoon
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UD/SL - Undisturbed Sleeve

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Project: Arroyo Hondo Trail

Date: 11/07/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 9

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE		
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft	
			SS	11-11-12 23	6					
			SS	4-4-6 10	9		CL-ML	SILTY CLAY with SAND, low plasticity, moderately firm to firm, dry, brown		
			SS	7-7-9 16	9					
								Stopped Auger @ 4.5 feet Stopped Sampler @ 6 feet		

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16

LEGEND

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Project: Arroyo Hondo Trail

Date: 11/14/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 10

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE	
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC		DESCRIPTION
5		5-7-6 13	SS	6			CL	CLAY with SAND, fine grained, low plasticity, moderately firm to firm, slightly moist, brown	13
		5-7-8 15	SS	7					15
10		8-10-13 23	SS	13					23
15		12-13-19 32	SS	9					32
20		13-13-13 26	SS	10					26
25		16-15-16 31	SS	11					31
30									
								Stopped Auger @ 24 feet Stopped Sampler @ 25.5 feet	

LOG OF TEST BORING 1-60813.ARROYO HONDO TRAIL.GPJ.GEO TEST.GDT 11/28/16

LEGEND

SS - Split Spoon
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Project: Arroyo Hondo Trail

Date: 11/14/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

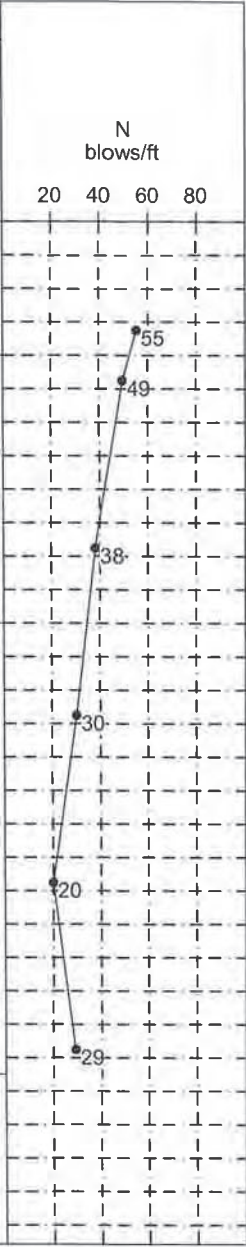
GROUNDWATER DEPTH

NO: 11

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE					SUBSURFACE PROFILE	
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION
5		25-25-30	SS	55	1		GP	GRAVEL with SAND, fine to coarse grained, non-plastic, very dense to dense, slightly moist to dry, red/brown
		19-25-24	SS	49	14			
10		14-18-20	SS	38	6		CL-ML	SANDY, SILTY CLAY, low plasticity, very firm, moist to slightly moist, red/brown
15		8-14-16	SS	30	7			
20		10-10-10	SS	20	5		SM	SILTY SAND, fine to coarse grained, non-plastic, medium dense, slightly moist, red/brown
25		12-15-14	SS	29	9			
								Stopped Auger @ 24 feet Stopped Sampler @ 25.5 feet



LEGEND

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LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDI 11/28/16



Project: Arroyo Hondo Trail

Date: 11/16/2016

Elevation:

Project No: 1-60813

Type: Hand Auger


LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 12

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE					SUBSURFACE PROFILE		N blows/ft			
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	20	40	60	80
5			GB		5		CL-ML	SANDY, SILTY, CLAY, low plasticity, slightly moist, brown				
								Stopped Hand Auger at 3 feet				
10												

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDI 11/28/16

LEGEND

SS - Split Spoon
 AC - Auger Cuttings
 UD/SL - Undisturbed Sleeve

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Project: Arroyo Hondo Trail

Date: 10/27/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 13

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE				
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft			
									20	40	60	80
5			AC		4		SC	CLAYEY SAND with GRAVEL, weakly cemented (caliche), medium plasticity, dry, light brown/white				
								Stopped Auger @ 4.5 feet * grade to steep to raise sampler boom				
10												

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16

LEGEND

SS - Split Spoon
 AC - Auger Cuttings
 UD/SL - Undisturbed Sleeve

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Project: Arroyo Hondo Trail

Date: 10/27/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 14

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE	
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft
5			SS	6-7-7 14	5				14
			SS	7-10-8 18	2		SW-SM	WELL GRADED SAND with SILT and GRAVEL, non-plastic, medium dense, slightly moist to dry, brown	18
			SS	9-10-10 20	1				20
								Stopped Auger @ 4.5 feet Stopped Sampler @ 6 feet	
10									

LEGEND

SS - Split Spoon
 AC - Auger Cuttings
 UD/SL - Undisturbed Sleeve

AMSL - Above Mean Sea Level
 CS - Continuous Sampler
 UD - Undisturbed
 ST - Shelby Tube

Stratification lines represent approximate boundaries between soil types. Transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16



Project: Arroyo Hondo Trail

Date: 11/14/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 15

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE	
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft
5			SS	5-5-7 12	2		SC-SM	SILTY, CLAYEY SAND, fine to medium grained, low plasticity, medium dense, slightly moist to dry, brown	
			SS	7-8-9 17	2				
10			SS	10-10-15 25	2				
15			SS	27-50/6" 50/6"	2		SW-SC		
20			SS	50/6" 50/6"	2			Stopped Auger @ 19 feet Stopped Sampler @ 19.5 feet	
25									

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16

LEGEND

SS - Split Spoon
AC - Auger Cuttings
UD/SL - Undisturbed Sleeve

AMSL - Above Mean Sea Level
CS - Continuous Sampler
UD - Undisturbed
ST - Shelby Tube

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Project: Arroyo Hondo Trail

Date: 11/14/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 16

During Drilling: none

After 24 Hours:

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDI 11/28/16

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE						
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft					
5			SS	5-6-7 13	2		SM	SILTY SAND, fine to medium grained, non-plastic, medium dense, slightly moist to dry, brown	20	40	60	80		
			SS	7-7-7 14	5									
10			SS	6-9-13 22	7									
15			SS	16-31-32 63	2		CL-ML	SANDY, SILTY CLAY, low plasticity, hard, dry, brown						
20			SS	50/6" 50/6"	2									
								Stopped Auger @ 19 feet Stopped Sampler @ 19.5 feet						
25														

LEGEND

SS - Split Spoon
 AC - Auger Cuttings
 UD/SL - Undisturbed Sleeve

AMSL - Above Mean Sea Level
 CS - Continuous Sampler
 UD - Undisturbed
 ST - Shelby Tube

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Project: Arroyo Hondo Trail

Date: 10/27/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 17

During Drilling: none

After 24 Hours:

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE		
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft	
			SS	10-11-11 22	4					
			SS	9-8-8 16	5		SC	CLAYEY SAND, medium plasticity, medium dense, slightly moist to dry, brown		
5			SS	5-5-6 11	4					
								Stopped Auger @ 4.5 feet Stopped Sampler @ 6 feet		
10										

LEGEND

SS - Split Spoon
AC - Auger Cuttings
UD/SL - Undisturbed Sleeve

AMSL - Above Mean Sea Level
CS - Continuous Sampler
UD - Undisturbed
ST - Shelby Tube

Stratification lines represent approximate boundaries between soil types. Transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.



Project: Arroyo Hondo Trail

Date: 11/16/2016

Elevation:

Project No: 1-60813

Type: Hand Auger


LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 18

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE				
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft			
									20	40	60	80
			GB		7		SC-SM	SILTY, CLAYEY SAND, low plasticity, slightly moist, brown				
								Stopped Hand Auger @ 3 feet				
5												
10												

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16

LEGEND

SS - Split Spoon
 AC - Auger Cuttings
 UD/SL - Undisturbed Sleeve

AMSL - Above Mean Sea Level
 CS - Continuous Sampler
 UD - Undisturbed
 ST - Shelby Tube

Stratification lines represent approximate boundaries between soil types. Transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.



Project: Arroyo Hondo Trail

Date: 10/27/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 20

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE	
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft
5		5-11-11	SS	22	4		SM	SILTY SAND, non-plastic to low plasticity, medium dense, slightly moist to dry, dark brown	22
		13-9-8	SS	17	4				17
		6-7-8	SS	15	5				15
								Stopped Auger @ 4.5 feet Stopped Sampler @ 6 feet	
10									

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16

LEGEND

SS - Split Spoon
AC - Auger Cuttings
UD/SL - Undisturbed Sleeve

AMSL - Above Mean Sea Level
CS - Continuous Sampler
UD - Undisturbed
ST - Shelby Tube

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Project: Arroyo Hondo Trail

Date: 11/03/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 21

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE					SUBSURFACE PROFILE		N blows/ft			
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	20	40	60	80
5			AC		5		CL	SANDY CLAY, low plasticity, dry, brown				
								Stopped Auger @ 4.5 feet * grade too steep to boom up sampler				
10												

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16

LEGEND

- SS - Split Spoon
- AC - Auger Cuttings
- UD/SL - Undisturbed Sleeve

- AMSL - Above Mean Sea Level
- CS - Continuous Sampler
- UD - Undisturbed
- ST - Shelby Tube

Stratification lines represent approximate boundaries between soil types. Transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.



Project: Arroyo Hondo Trail

Date: 11/03/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 22

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE	
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft
5		15-15-17	SS	32	5		CL	SANDY CLAY, medium plasticity, very firm to hard, slightly moist to dry, brown	32
		22-29-31	SS	60	5				60
		22-18-20	SS	38	6				38
								Stopped Auger @ 4.5 feet Stopped Sampler @ 6 feet	
10									

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16

LEGEND

SS - Split Spoon
AC - Auger Cuttings
UD/SL - Undisturbed Sleeve

AMSL - Above Mean Sea Level
CS - Continuous Sampler
UD - Undisturbed
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Project: Arroyo Hondo Trail

Date: 11/03/2016

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 23

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE		
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft	
5			SS	14-15-14 29	4					
			SS	13-14-15 29	4		SC	CLAYEY SAND, low plasticity, medium dense, slightly moist to dry, brown		
			SS	5-4-8 12	3					
								Stopped Auger @ 4.5 feet Stopped Sampler @ 6 feet		

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16

LEGEND

- SS - Split Spoon
- AMSL - Above Mean Sea Level
- AC - Auger Cuttings
- CS - Continuous Sampler
- UD/SL - Undisturbed Sleeve
- UD - Undisturbed
- ST - Shelby Tube

Stratification lines represent approximate boundaries between soil types. Transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.



Project: Arroyo Hondo Trail

Date: 11/16/2016

Elevation:

Project No: 1-60813

Type: Hand Auger


LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 24

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE					SUBSURFACE PROFILE		N blows/ft			
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	20	40	60	80
5			GB		9		CL	SANDY CLAY, fine grained, medium plasticity, slightly moist, brown				
								Stopped Hand Auger @ 3 feet				
10												

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16

LEGEND

SS - Split Spoon
 AC - Auger Cuttings
 UD/SL - Undisturbed Sleeve

AMSL - Above Mean Sea Level
 CS - Continuous Sampler
 UD - Undisturbed
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Project: Arroyo Hondo Trail

Date: 11/16/2016

Elevation:

Project No: 1-60813

Type: Hand Auger

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 25

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE						SUBSURFACE PROFILE				
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft			
									20	40	60	80
			GB		8		ML	SANDY SILT, low plasticity, slightly moist, brown				
								Stopped Hand Auger @ 3 feet				
5												
10												

LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL GPJ GEO TEST GDT 11/28/16

LEGEND

SS - Split Spoon
 AC - Auger Cuttings
 UD/SL - Undisturbed Sleeve

AMSL - Above Mean Sea Level
 CS - Continuous Sampler
 UD - Undisturbed
 ST - Shelby Tube

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SUMMARY OF LABORATORY RESULTS

TEST HOLE	DEPTH (FEET)	UNIFIED CLASS	(% MOIST)	LL	PI	SIEVE ANALYSIS PERCENT PASSING											
						NO 200	NO 100	NO 40	NO 10	NO 4	3/8"	1/2"	3/4"	1"	1 1/2"	2"	4"
6	2.5	CL	5.7	28	8	58	71	81	95	99	100						
6	5.0		4.6														
7	0.5	CL	6.0	30	9	57	69	78	89	96	99	100					
7	2.5		6.6														
7	5.0		6.8														
8	0.5		9.8														
8	2.5		8.9														
8	5.0		7.7														
9	0.5		6.5														
9	2.5	CL-ML	8.7	27	6	82	94	97	100								
9	5.0		8.6														
10	2.5		6.3														
10	4.0	CL	7.2	24	8	73	84	92	97	99	100						
10	9.0		12.7														
10	14.0	CL	8.9	25	8	59	71	82	97	100							
10	19.0		10.4														
10	24.0	CL	10.7	31	10	82	89	93	98	100							
11	2.5	GP	1.3	NP	NP	4	5	10	28	40	48	51	55	58	78	99	
11	4.0		13.7														

LL = LIQUID LIMIT
PI = PLASTICITY INDEX
NP = NON PLASTIC or NO VALUE

Project: Arroyo Hondo Trail
Location: Santa Fe, NM
Number: 1-60813

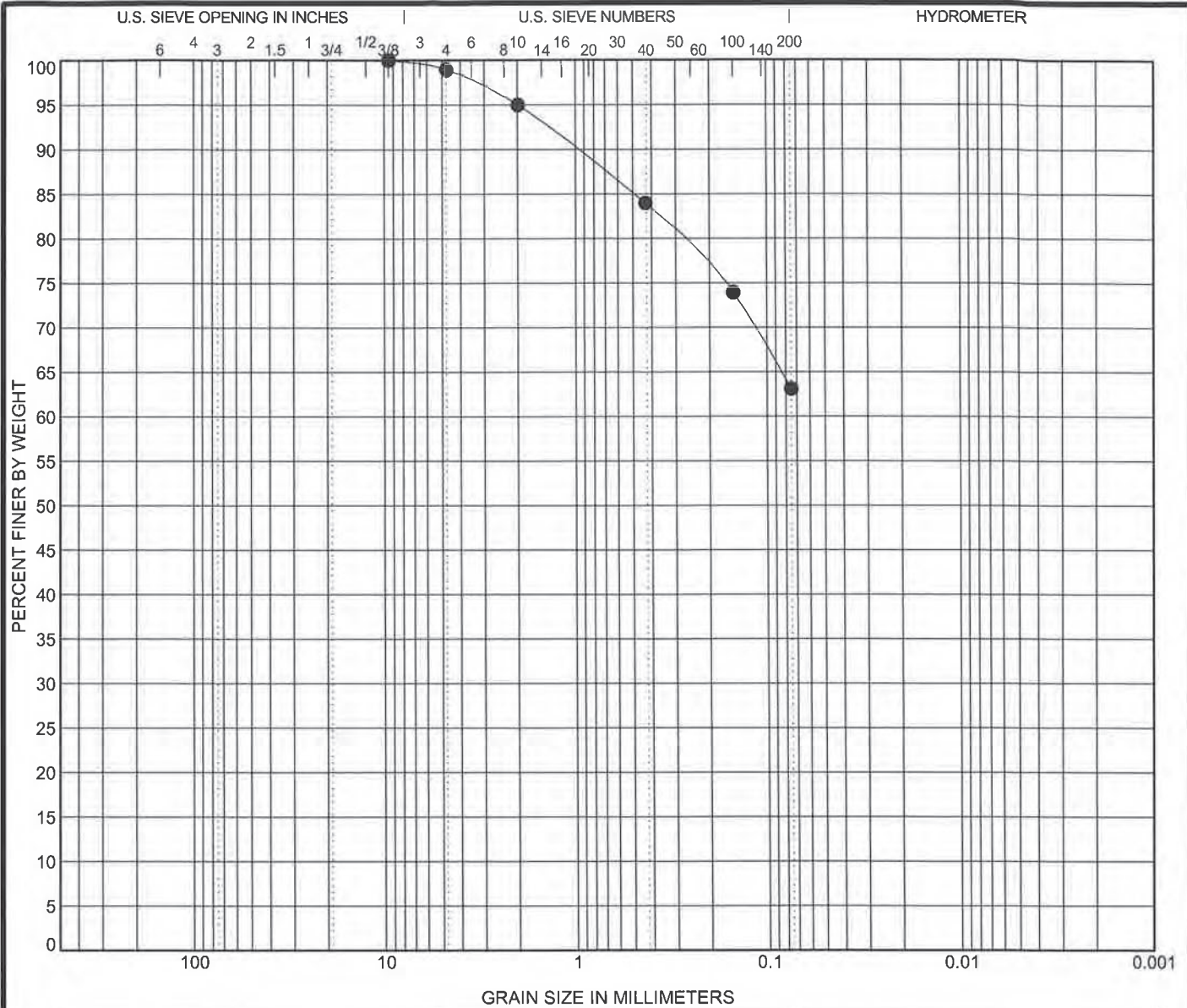
SUMMARY OF LABORATORY RESULTS

TEST HOLE	DEPTH (FEET)	UNIFIED CLASS	(% MOIST)	LL	PI	SIEVE ANALYSIS PERCENT PASSING											
						NO 200	NO 100	NO 40	NO 10	NO 4	3/8"	1/2"	3/4"	1"	1 1/2"	2"	4"
17	0.5	SC	4.1	28	11	40	58	73	87	94	100						
17	2.5		5.1														
17	5.0		4.3														
18	1.5	SC-SM	6.6	24	4	44	65	85	96	99	100						
19	0.5		7.2														
19	2.5	CL	11.0	34	14	79	89	95	98	99	100						
19	5.0		8.0														
20	0.5		4.1														
20	2.5	SM	3.9	23	3	34	53	75	89	95	99	100					
20	5.0		5.5														
21	2.0	CL	4.5	30	9	63	73	80	83	96	100						
22	0.5		5.0														
22	2.5	CL	5.4	32	15	62	79	87	96	99	100						
22	5.0		5.8														
23	0.5		4.5														
23	2.5	SC	4.1	27	11	43	62	74	88	94	98	99	100				
23	5.0		2.7														
24	1.5	CL	8.7	30	12	68	76	84	95	99	100						
25	1.5	ML	8.4	30	7	63	74	84	95	99	100						



LL = LIQUID LIMIT
 PI = PLASTICITY INDEX
 NP = NON PLASTIC or NO VALUE

Project: Arroyo Hondo Trail
 Location: Santa Fe, NM
 Number: 1-60813



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Classification	LL	PL	PI	Cc	Cu
● 25 1.5	SANDY SILTY (ML)	30	23	7		

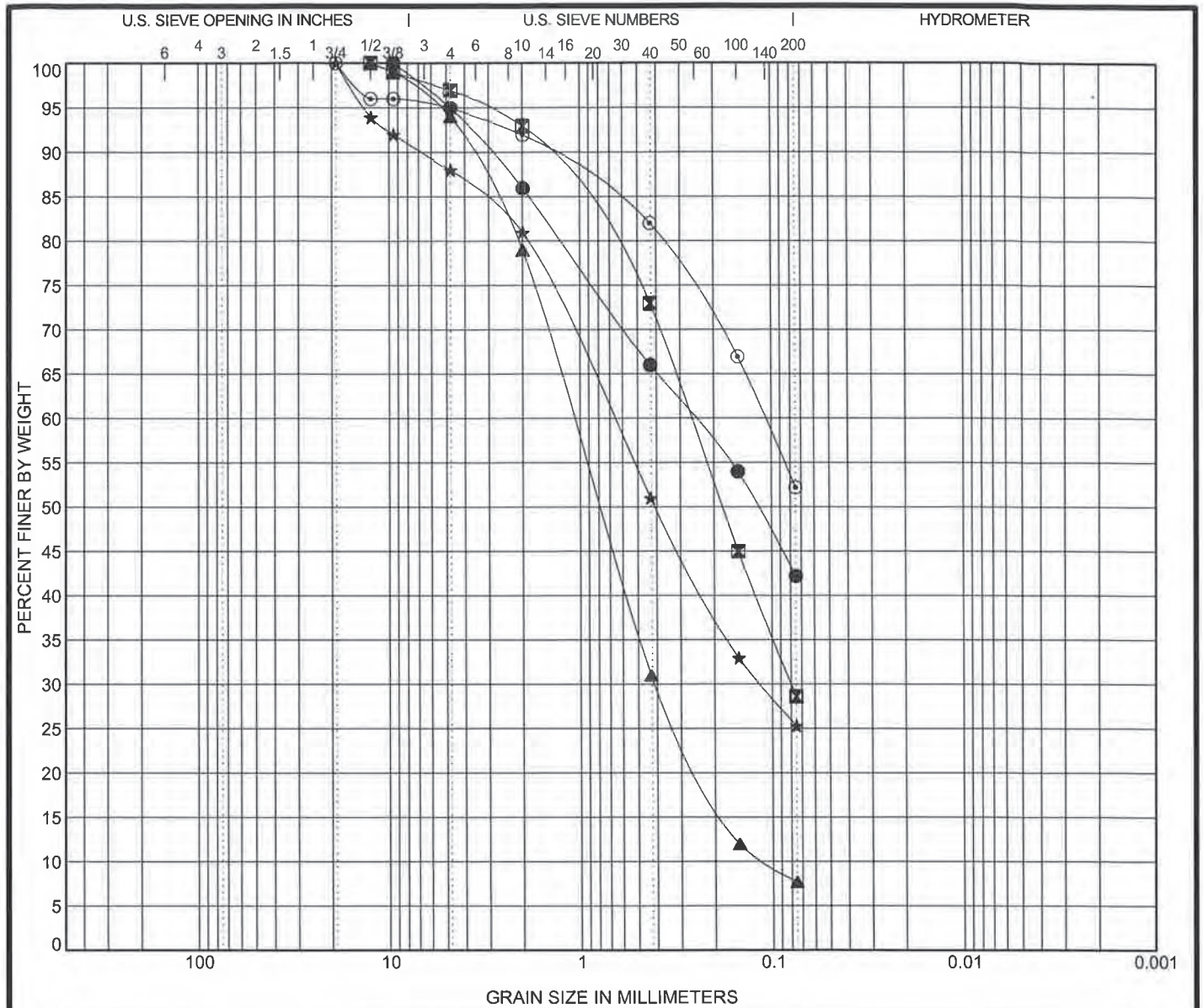
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● 25 1.5	9.5				1.0	35.9	63.1	

GRAIN SIZE DISTRIBUTION



Project: Arroyo Hondo Trail
 Location: Santa Fe, NM
 Number: 1-60813

US GRAIN SIZE 1-60813 ARROYO HONDO TRAIL.GPJ GEO TEST.GDT 11/28/16



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

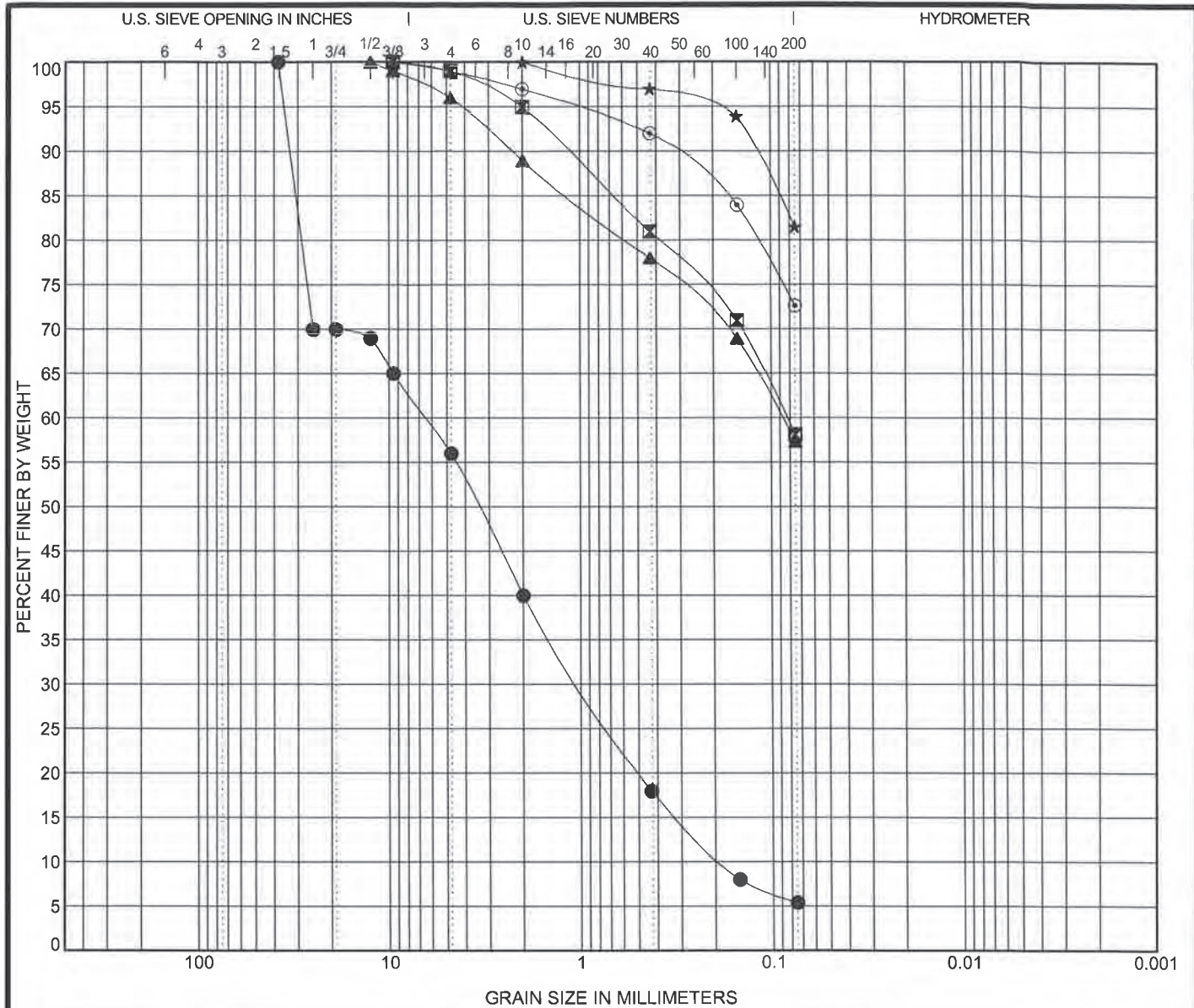
Specimen Identification	Classification	LL	PL	PI	Cc	Cu		
● 1	2.5 SILTY, CLAYEY SAND(SC-SM)	23	16	7				
☒ 2	4.0 SILTY SAND(SM)	20	17	3				
▲ 2	14.0 WELL-GRADED SAND with SILT(SW-SM)	NP	NP	NP	1.40	10.02		
★ 4	0.5 CLAYEY SAND(SC)	23	14	9				
◎ 5	4.0 SANDY SILTY CLAY(CL-ML)	24	18	6				
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● 1	2.5	9.5	0.254		5.0	52.8	42.2	
☒ 2	4.0	12.5	0.264	0.08	3.0	68.4	28.6	
▲ 2	14.0	12.5	1.088	0.407	0.109	6.0	86.3	7.7
★ 4	0.5	19	0.682	0.115		12.0	62.7	25.3
◎ 5	4.0	19	0.108			5.0	42.8	52.2

GRAIN SIZE DISTRIBUTION



Project: Arroyo Hondo Trail
 Location: Santa Fe, NM
 Number: 1-60813

US GRAIN SIZE 1-60813 ARROYO HONDO TRAIL.GPJ GEO TEST.GDT 11/28/15



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

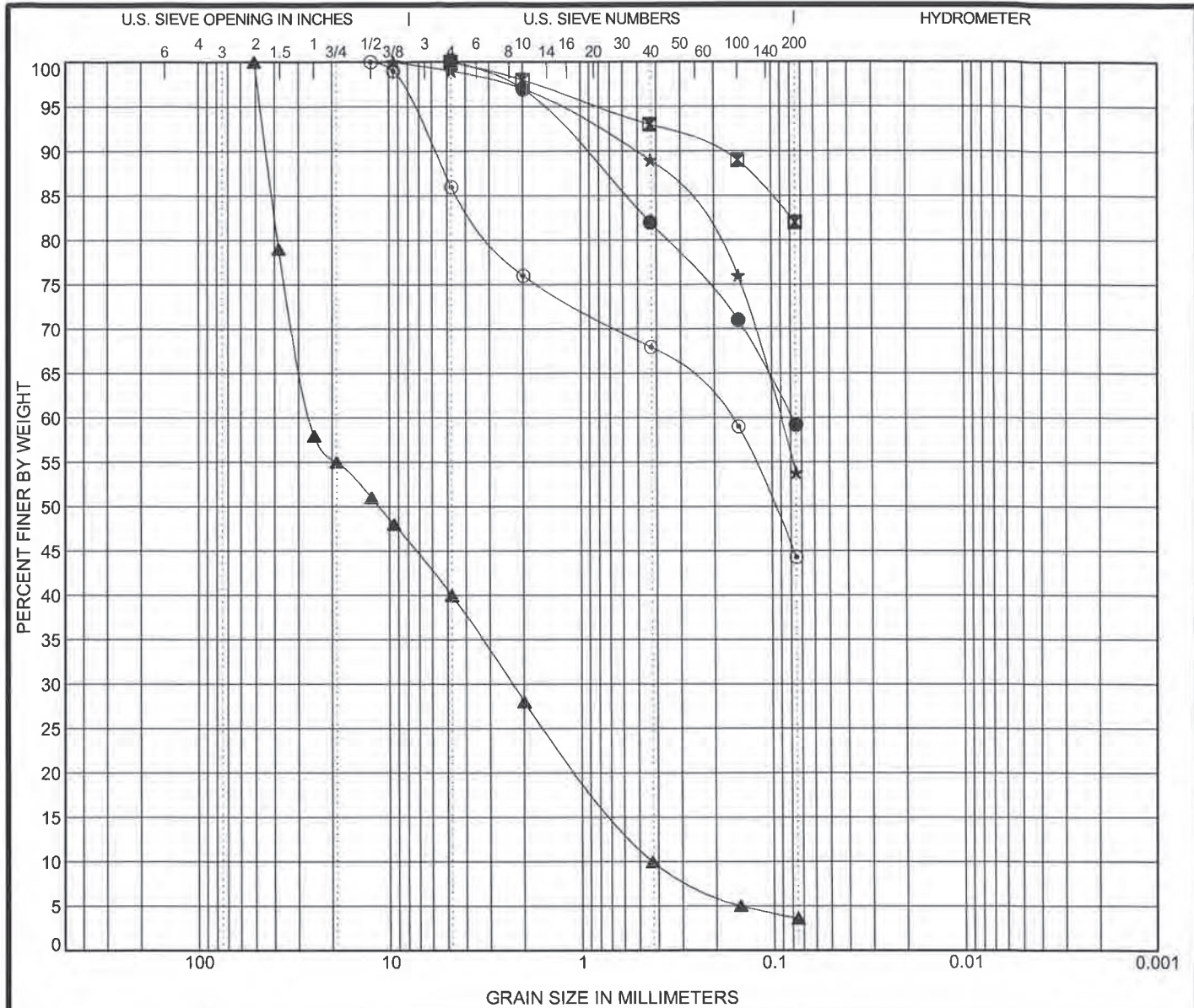
Specimen Identification	Classification	LL	PL	PI	Cc	Cu		
● 5	14.0 POORLY GRADED SAND with SILT and GRAVEL(SP-SM)	NP	NP	NP	0.83	34.91		
■ 6	2.5 SANDY LEAN CLAY(CL)	28	20	8				
▲ 7	0.5 SANDY LEAN CLAY(CL)	30	21	9				
★ 9	2.5 SILTY CLAY with SAND(CL-ML)	27	21	6				
◎ 10	4.0 LEAN CLAY with SAND(CL)	24	16	8				
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● 5	14.0	38	6.464	0.994	0.185	44.0	50.6	5.4
■ 6	2.5	9.5	0.083			1.0	40.9	58.1
▲ 7	0.5	12.5	0.088			4.0	38.7	57.3
★ 9	2.5	2				0.0	18.5	81.5
◎ 10	4.0	9.5				1.0	26.4	72.6

GRAIN SIZE DISTRIBUTION

GEO-TEST

Project: Arroyo Hondo Trail
 Location: Santa Fe, NM
 Number: 1-60813

US GRAIN SIZE 1-60813 ARROYO HONDO TRAIL.GPJ GEO TEST.GDT 11/28/16



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

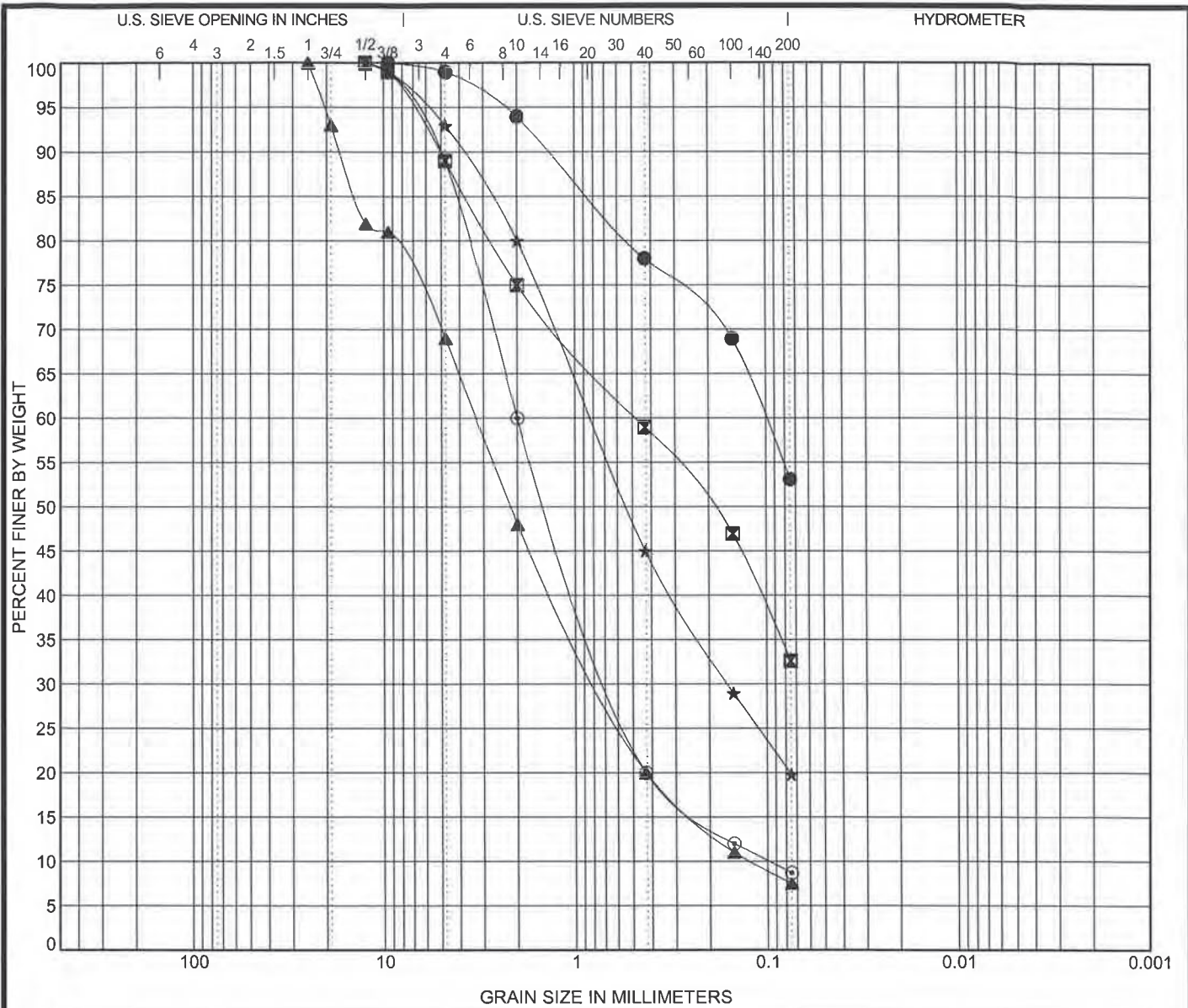
Specimen Identification	Classification	LL	PL	PI	Cc	Cu		
● 10	14.0 SANDY LEAN CLAY(CL)	25	17	8				
☒ 10	24.0 LEAN CLAY with SAND(CL)	31	21	10				
▲ 11	2.5 POORLY GRADED GRAVEL with SAND(GP)	NP	NP	NP	0.48	60.50		
★ 11	9.0 SANDY SILTY CLAY(CL-ML)	22	18	4				
◎ 11	19.0 SILTY SAND(SM)	21	19	2				
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● 10	14.0	4.75	0.079		0.0	40.8	59.2	
☒ 10	24.0	4.75			0.0	18.0	82.0	
▲ 11	2.5	51	26.017	2.31	0.43	60.0	36.4	3.6
★ 11	9.0	9.5	0.091		1.0	45.2	53.8	
◎ 11	19.0	12.5	0.169		14.0	41.7	44.3	

GRAIN SIZE DISTRIBUTION

GEO-TEST

Project: Arroyo Hondo Trail
 Location: Santa Fe, NM
 Number: 1-60813

US GRAIN SIZE 1-60813 ARROYO HONDO TRAIL.GPJ GEO TEST.GDT 11/28/16



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Classification	LL	PL	PI	Cc	Cu
● 12	1.5 SANDY SILTY CLAY(CL-ML)	23	17	6		
☒ 13	2.0 CLAYEY SAND(SC)	29	18	11		
▲ 14	5.0 WELL-GRADED SAND with SILT and GRAVEL(SW-SM)	NP	NP	NP	1.37	26.64
★ 15	4.0 SILTY, CLAYEY SAND(SC-SM)	22	17	5		
⊙ 15	14.0 WELL-GRADED SAND with SILTY CLAY(SW-SC)	22	16	6	2.02	20.29

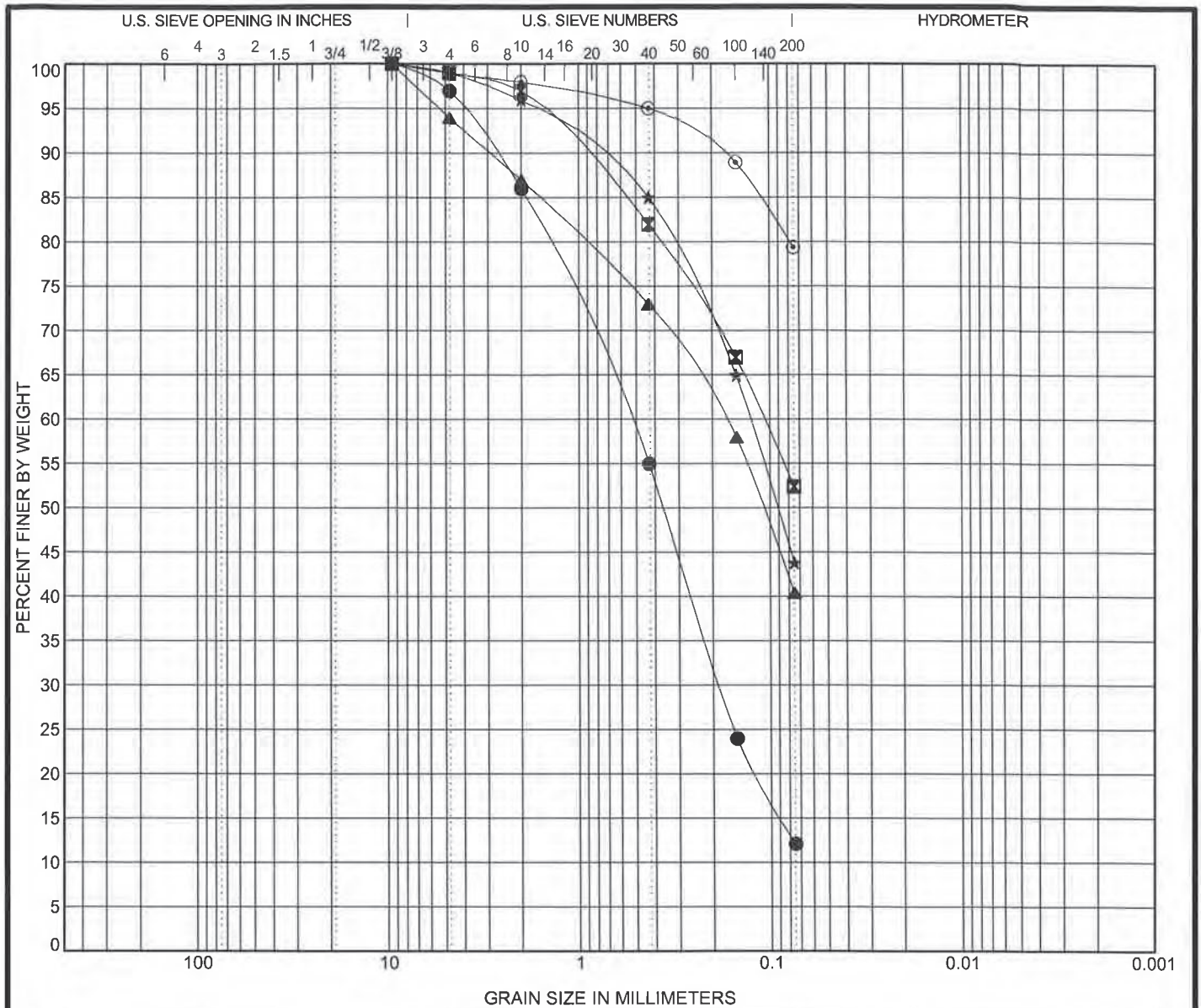
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● 12	1.5	9.5	0.101		1.0	45.9		53.1
☒ 13	2.0	12.5	0.473		11.0	56.4		32.6
▲ 14	5.0	25	3.279	0.745	0.123	31.0	61.5	7.5
★ 15	4.0	12.5	0.831	0.16		7.0	73.2	19.8
⊙ 15	14.0	12.5	2	0.631	0.099	11.0	80.3	8.7

GRAIN SIZE DISTRIBUTION



Project: Arroyo Hondo Trail
 Location: Santa Fe, NM
 Number: 1-60813

US GRAIN SIZE 1-60813 ARROYO HONDO TRAIL.GPJ GEO TEST.GDT 11/28/16



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

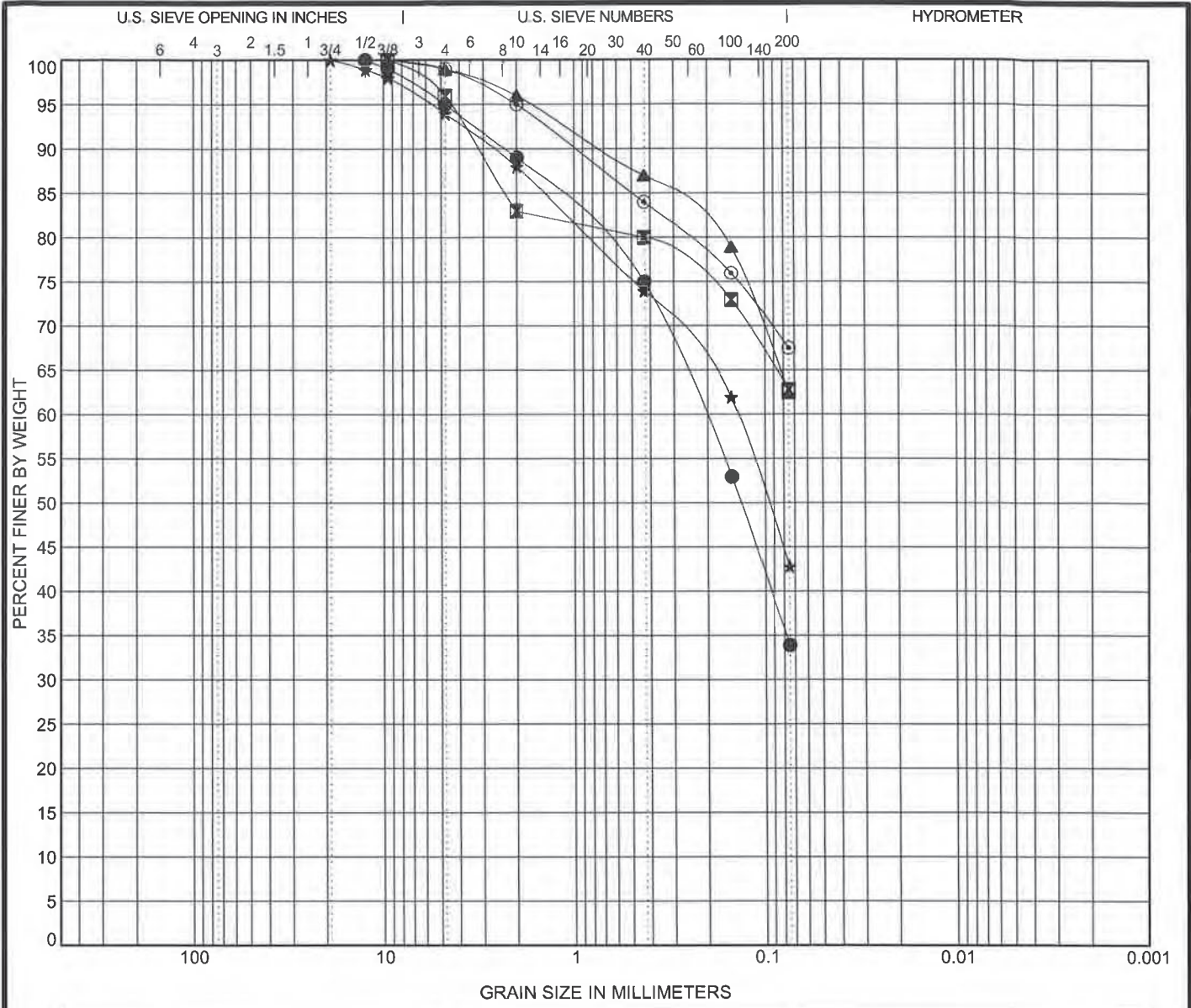
Specimen Identification	Classification	LL	PL	PI	Cc	Cu		
● 16	2.5 SILTY SAND(SM)	NP	NP	NP	0.93	8.30		
⊠ 16	9.0 SANDY SILTY CLAY(CL-ML)	26	19	7				
▲ 17	0.5 CLAYEY SAND(SC)	28	17	11				
★ 18	1.5 SILTY, CLAYEY SAND(SC-SM)	24	20	4				
⊙ 19	2.5 LEAN CLAY with SAND(CL)	34	20	14				
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● 16	2.5	9.5	0.551	0.184	3.0	84.9	12.1	
⊠ 16	9.0	9.5	0.108		1.0	46.6	52.4	
▲ 17	0.5	9.5	0.173		6.0	53.6	40.4	
★ 18	1.5	9.5	0.127		1.0	55.2	43.8	
⊙ 19	2.5	9.5			1.0	19.6	79.4	

GRAIN SIZE DISTRIBUTION



Project: Arroyo Hondo Trail
 Location: Santa Fe, NM
 Number: 1-60813

US GRAIN SIZE 1-60813 ARROYO HONDO TRAIL.GPJ GEO TEST.GDT 11/28/16



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Classification					LL	PL	PI	Cc	Cu	
● 20	2.5	SILTY SAND(SM)					23	20	3		
■ 21	2.0	SANDY LEAN CLAY(CL)					30	21	9		
▲ 22	2.5	SANDY LEAN CLAY(CL)					32	17	15		
★ 23	2.5	CLAYEY SAND(SC)					27	16	11		
◎ 24	1.5	SANDY LEAN CLAY(CL)					30	18	12		
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay			
● 20	2.5	12.5	0.21		5.0	61.1	33.9				
■ 21	2.0	9.5			4.0	33.2	62.8				
▲ 22	2.5	9.5			1.0	36.6	62.4				
★ 23	2.5	19	0.14		6.0	51.2	42.8				
◎ 24	1.5	9.5			1.0	31.5	67.5				

GRAIN SIZE DISTRIBUTION



Project: Arroyo Hondo Trail
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US GRAIN SIZE 1-60813 ARROYO HONDO TRAIL.GPJ GEO TEST.GDT 11/28/16



Project: Arroyo Hondo Trail

Date: 03/16/2018

Elevation:

Project No: 1-60813

Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 31

During Drilling: none

After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE					SUBSURFACE PROFILE		N blows/ft			
		SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	20	40	60	80
5		2-2-4 6	SS	2-2-4	3		SM	SILTY SAND, fine grained, non-plastic, loose, dry, brown				
		4-4-6 10	SS	4-4-6	7		CL	SANDY CLAY, low plasticity, soft to moderately firm, dry, brown to light brown				
10		3-5-9 14	SS	3-5-9	2		SP-SM	SAND with SILT, fine to coarse grained, non-plastic, medium dense, dry, tan/light brown				
15		3-4-6 10	SS	3-4-6	9							
20		5-6-6 12	SS	5-6-6	7		ML	SANDY SILT, low plasticity, moderately firm, dry, tan/light brown				
25		9-12-17 29	SS	9-12-17	2							
30		11-14-20 34	SS	11-14-20	2		SP	SAND, fine to coarse grained, some gravel, non-plastic, medium dense to dense, dry, tan/reddish brown				
								Stopped Sampler @ 29 feet Stopped Auger @ 30.5 feet				
35												

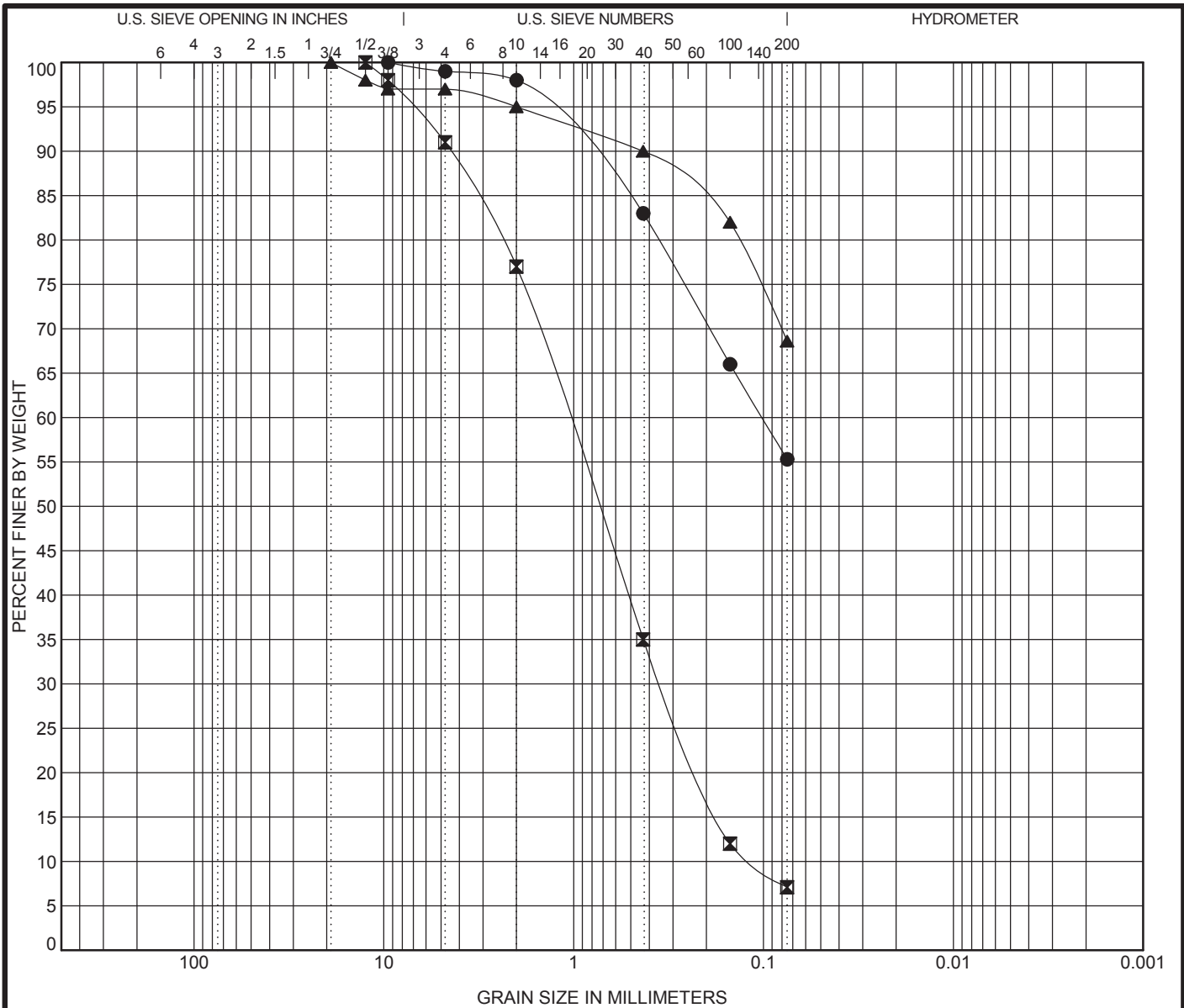
LOG OF TEST BORING 1-60813 ARROYO HONDO TRAIL.GPJ GEO TEST.GDT 3/22/18

LEGEND

SS - Split Spoon
AC - Auger Cuttings
UD/SL - Undisturbed Sleeve

AMSL - Above Mean Sea Level
CS - Continuous Sampler
UD - Undisturbed
ST - Shelby Tube

Stratification lines represent approximate boundaries between soil types. Transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Classification	LL	PL	PI	Cc	Cu
● 31 5.0	SANDY LEAN CLAY(CL)	27	19	8		
■ 31 10.0	POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP	0.96	9.50
▲ 31 20.0	SANDY SILT(ML)	22	19	3		

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● 31 5.0	9.5	0.102			1.0	43.7	55.3	
■ 31 10.0	12.5	1.074	0.342	0.113	9.0	83.9	7.1	
▲ 31 20.0	19				3.0	28.4	68.6	



GRAIN SIZE DISTRIBUTION

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US GRAIN SIZE 1-60813 ARROYO HONDO TRAIL.GPJ GEO TEST.GDT 3/22/18

