

CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director



Mayor Timothy M. Keller

May 21, 2024

Andrea Rand
ISG
7100 International Dr, Ste 5550
Minneapolis, MN 55425

**RE: U-Haul
8200 Jefferson Street NE
Conceptual Grading and Drainage Plans
Engineer's Stamp Date: No Stamp Date
Hydrology File: C17D146**

Dear Ms. Rand:

PO Box 1293
Based upon the information provided in your submittal received 05/14/2024, the Conceptual Grading & Drainage Plans are preliminary approved for action by the Development Facilitation Team (DFT) on Site Plan for Building Permit.

Albuquerque
PRIOR TO BUILDING PERMIT:

NM 87103
1. Please submit a more detailed Grading & Drainage Plan to Hydrology for review and approval. This digital (.pdf) is emailed to PLNDRS@cabq.gov along with the Drainage Transportation Information Sheet.

www.cabq.gov
As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Dough Hughes, PE, jhughes@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov.

Sincerely,

Renée C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department



City of Albuquerque

Planning Department
Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (DTIS)

Project Title: _____ Hydrology File # _____

Legal Description: _____

City Address, UPC, OR Parcel: _____

Applicant/Agent: _____ Contact: _____

Address: _____ Phone: _____

Email: _____

Applicant/Owner: _____ Contact: _____

Address: _____ Phone: _____

Email: _____

(Please note that a DFT SITE is one that needs Site Plan Approval & ADMIN SITE is one that does not need it.)

TYPE OF DEVELOPMENT: PLAT (#of lots) _____ RESIDENCE
DFT SITE ADMIN SITE

RE-SUBMITTAL: YES NO

DEPARTMENT: TRANSPORTATION HYDROLOGY/DRAINAGE

Check all that apply under Both the Type of Submittal and the Type of Approval Sought:

TYPE OF SUBMITTAL:

ENGINEER/ARCHITECT CERTIFICATION
PAD CERTIFICATION
CONCEPTUAL G&D PLAN
GRADING & DRAINAGE PLAN
DRAINAGE REPORT
DRAINAGE MASTER PLAN
CLOMR/LOMR
TRAFFIC CIRCULATION LAYOUT (TCL)
ADMINISTRATIVE
TRAFFIC CIRCULATION LAYOUT FOR DFT
APPROVAL
TRAFFIC IMPACT STUDY (TIS)
STREET LIGHT LAYOUT
OTHER (SPECIFY) _____

TYPE OF APPROVAL SOUGHT:

BUILDING PERMIT APPROVAL
CERTIFICATE OF OCCUPANCY
CONCEPTUAL TCL DFT APPROVAL
PRELIMINARY PLAT APPROVAL
FINAL PLAT APPROVAL
SITE PLAN FOR BLDG PERMIT DFT
APPROVAL
SIA/RELEASE OF FINANCIAL GUARANTEE
FOUNDATION PERMIT APPROVAL
GRADING PERMIT APPROVAL
SO-19 APPROVAL
PAVING PERMIT APPROVAL
GRADING PAD CERTIFICATION
WORK ORDER APPROVAL
CLOMR/LOMR
OTHER (SPECIFY) _____

DATE SUBMITTED: _____

Andrea Rand

From: Trujillo, TimothyR, DOT <TimothyR.Trujillo@dot.nm.gov>
Sent: Tuesday, May 14, 2024 8:29 AM
To: Alex Amadeo
Cc: Andrea Rand; Thompson, Keith, DOT
Subject: RE: [EXTERNAL] U-Haul - 8200 Jefferson St NE - Drainage Plan

Alex,

I have no further comments on this plan. The pond labeling was all I needed and they have sufficient capacity.

Regards,

Tim Trujillo, PE/CFM
NMDOT District 3 Drainage

From: Alex Amadeo <Alex.Amadeo@ISGInc.com>
Sent: Tuesday, May 14, 2024 7:23 AM
To: Trujillo, TimothyR, DOT <TimothyR.Trujillo@dot.nm.gov>
Cc: Andrea Rand <Andrea.Rand@isginc.com>
Subject: RE: [EXTERNAL] U-Haul - 8200 Jefferson St NE - Drainage Plan

Tim,

I wanted to follow up with you on this and see if you needed anything else from us at this time and an estimated timeline for your team's review to be completed.

Thank you,

From: Alex Amadeo <Alex.Amadeo@ISGInc.com>
Sent: Tuesday, April 16, 2024 10:02 AM
To: Trujillo, TimothyR, DOT <TimothyR.Trujillo@dot.nm.gov>
Cc: Andrea Rand <Andrea.Rand@ISGInc.com>
Subject: RE: [EXTERNAL] U-Haul - 8200 Jefferson St NE - Drainage Plan

Tim,

The NW pond has 37,398 CF of volume and is shown on sheet 2 of the attachment. The SW ponds have volumes of 1,059 CF and 1,200 CF. These three ponds combine to have over four (4) times the required volume by the City of Albuquerque standards.

Let me know if you need anything else.

Thank you,

From: Trujillo, TimothyR, DOT <TimothyR.Trujillo@dot.nm.gov>
Sent: Tuesday, April 16, 2024 9:36 AM

To: Alex Amadeo <Alex.Amadeo@ISGInc.com>
Cc: Andrea Rand <Andrea.Rand@isginc.com>
Subject: RE: [EXTERNAL] U-Haul - 8200 Jefferson St NE - Drainage Plan

Hello Alex. Maybe I can't find it but could you label how much volume each pond has?

Regards,

Tim Trujillo, PE/CFM
NMDOT District 3 Drainage

From: Alex Amadeo <Alex.Amadeo@ISGInc.com>
Sent: Monday, April 15, 2024 12:49 PM
To: Trujillo, TimothyR, DOT <TimothyR.Trujillo@dot.nm.gov>
Cc: Andrea Rand <Andrea.Rand@isginc.com>
Subject: [EXTERNAL] U-Haul - 8200 Jefferson St NE - Drainage Plan

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Timothy,

See attached site and drainage plan for the proposed U-Haul site in Albuquerque. The city stated that since our project will outlet into NMDOT roadway we need to have written concurrence from NMDOT D3 drainage that this project can move forward.

Please review and let us know if you need anything else from us at this time.

Thank you,



Alex Amadeo, PE
Civil Engineer
Employee Owner

P 515.243.9143
C 515.689.3020
E Alex.Amadeo@ISGInc.com
W ISGInc.com



From: Rodenbeck, Jay B. <jrodenbeck@cabq.gov>
Sent: Tuesday, March 19, 2024 1:19 PM
To: Cody Lane <cody_lane@uhaul.com>
Cc: Tom Neill <tom_neill@uhaul.com>; Wolfley, Jolene <jwolfley@cabq.gov>; Biazar, Shahab <sbiazar@cabq.gov>; Webb, Robert L. <rwebb@cabq.gov>
Subject: RE: NMDOT Contacts for Railroad Questions

CAUTION: This email came from an external sender. Do not click **links** or **attachments** unless you know the sender and the content is safe.

Good afternoon Cody,

I discussed Robert Fine's (from NMDOT) message below with City Engineer Shahab Biazar (copied in this message), which noted that the subject portion of track on your site is severed and no freight trains will be able to access and use the track anymore, further noting that BNSF confirmed with him (Mr. Fine) that it was okay with them that NMDOT sever the track. With the noted confirmation from NMDOT, Mr. Biazar confirmed with me that we would have no objection to the removal of the existing track on your site as part of a Site Plan Administrative DFT and/or platting application review.

Additionally, with no documented proof of an easement for the track, there's no need (or way) to vacate an easement.



Jay Rodenbeck

Planning Manager
Development Review Services
o (505) 924-3994
c (505) 553-0682
e jrodenbeck@cabq.gov
cabq.gov/planning

From: Cody Lane <cody_lane@uhaul.com>
Sent: Tuesday, March 19, 2024 12:18 PM
To: Rodenbeck, Jay B. <jrodenbeck@cabq.gov>
Cc: Tom Neill <tom_neill@uhaul.com>; Wolfley, Jolene <jwolfley@cabq.gov>; Biazar, Shahab <sbiazar@cabq.gov>; Webb, Robert L. <rwebb@cabq.gov>
Subject: Re: NMDOT Contacts for Railroad Questions

[EXTERNAL] Forward to phishing@cabq.gov and delete if an email causes any concern.

Good afternoon Jay,

I was hoping you had some information for U-Haul on the 8200 Jefferson property? Please let me know if you need anything from me.
We look forward to moving forward with this project.

Cody Lane
Owners Representative
505-453-3718

From: Rodenbeck, Jay B. <jrodenbeck@cabq.gov>
Sent: Monday, March 11, 2024 11:31 AM
To: Cody Lane <cody_lane@uhaul.com>
Cc: Tom Neill <tom_neill@uhaul.com>; Wolfley, Jolene <jwolfley@cabq.gov>; Biazar, Shahab <sbiazar@cabq.gov>; Webb, Robert L. <rwebb@cabq.gov>
Subject: FW: NMDOT Contacts for Railroad Questions

CAUTION: This email came from an external sender. Do not click **links** or **attachments** unless you know the sender and the content is safe.

Good morning Cody,

I have copied senior Planning staff in this message, and we will provide a response to your inquiry ASAP about the inactive rail encroaching through the property at 8200 Jefferson Street NE and the responses you provide below from NMDOT regarding the status of the inactive rail, and how/if the inactive rail can potentially be vacated/removed for the proposed U-haul development on the site. According to Robert Fine's message below (from NMDOT), it seems like BNSF is okay with severing the rail track in this location.



Jay Rodenbeck

Planning Manager
Development Review Services
o (505) 924-3994
c (505) 553-0682
e jrodenbeck@cabq.gov
cabq.gov/planning

From: Cody Lane <cody_lane@uhaul.com>
Sent: Monday, March 11, 2024 10:37 AM
To: Rodenbeck, Jay B. <jrodenbeck@cabq.gov>
Cc: Tom Neill <tom_neill@uhaul.com>
Subject: Re: NMDOT Contacts for Railroad Questions

[EXTERNAL] Forward to phishing@cabq.gov and delete if an email causes any concern.

Jay thanks again for getting me the contact in formation. Over the past few weeks, I have come up with some information.

From my understanding there is not an easement for the rail passing through our property. It's referred to as an agreement. I was also told by Robert the track within our property we own, and if we would like to remove we can.

With the below emails I am hoping that we have enough documentation to be able to remove the tracks.

From my understanding the plat does not show an easement.

I have attached the track agreement also.

Please let me know if you have any questions.

Jay below is an email from Robert Fine.

Cody,

Ok so it looks like the City is requiring this as part of a building permit.

The track in question does connect to track that NMDOT owns, roughly a ½ mile west of your location. That said, NMDOT does not own any easement or track within or at your specific property location and as such cannot formally speak for or represent the track or easement within your property. What we can tell you is that the subject portion of track is severed and no freight trains will be able to access and use that track anymore. Now, the specific location where the track is 'severed' (the connecting rail has been removed) is within a track segment that NMDOT does own.

Given the City's comment, I am presuming that your property plat must show a rail easement present. The owner, according to a 1977 industry track agreement that covers rail freight service to the property I believe you have purchased, would be the Loop Development Company. I have also seen other documents that refer to the rail easement owner as being 'Associated Investors.'

The attached agreement is made with the Atchison, Topeka & Santa Fe Railway, or "ATSF", (predecessor to the BNSF Railway today), but that agreement gave the ATSF only a right to operate their trains on the track to provide freight service. ATSF did not own the track or an easement there. As mentioned, the agreement references the owner as Loop Development Company at that time.

I will add that we have been in communication with BNSF Railway a few years ago regarding this overall industry track lead and did confirm with BNSF that it was okay with them that NMDOT severe the track, since there had not been any freight shippers on the spur for some time. The last shipper was Stock Building Supply who had occupied the lot I believe you purchased. Stock had vacated the property around 2009 or so (approximately), and that was the last time that track had been used.

Robert E. Fine | Rail Facilities Manager
NMDOT | Rail Bureau | (505) 629-2830

The below screen shot is from Robert, He forwarded message between him and BNSF



Fine, Robert, DOT <Robert.Fine@dot.nm.gov>

To: Cody Lane



Tue 3/5/2024 9:53 AM

Cc: Craven, William, DOT <William.Craven@dot.nm.gov>



Track 740 - Albuquerque Ma...
119 KB

CAUTION: This email came from an external sender. Do not click **links** or **attachments** unless you know the sender and the content is safe.

Cody, attached is the email I just referenced, with attachment. Just to clarify again, BNSF Railway is stating that they no longer have a need for the spur to operate over to serve freight customers. BNSF does not own the spur track, so this is not a notice from the track owner's perspective. Nonetheless, perhaps it will assist you with your response to the City.

Robert E. Fine | Rail Facilities Manager
NMDOT | Rail Bureau | (505) 629-2830

From: Aman, Brian H <Brian.Aman@bnsf.com>

Sent: Friday, January 8, 2021 4:54 PM

To: Craven, William, NMDOT <William.Craven@state.nm.us>; Fine, Robert, NMDOT <Robert.Fine@state.nm.us>

Cc: Walls, Keary M <Keary.Walls@bnsf.com>; Lee, Mike W <Mike.Lee@bnsf.com>; Sieverson, Katherine A <Katherine.Sieverson@bnsf.com>; Aman, Brian H <Brian.Aman@bnsf.com>

Subject: [EXT] Track 740 at Albuquerque

Bill and Rob – Per our discussion yesterday, BNSF has made the determination that it no longer has a need to use track 740 crossing and north of Paseo del Norte in Albuquerque, NM. Please see attached map that clearly depicts which track is no longer used by BNSF.

Let me know if you have any questions.

Thanks,
Brian

Cody Lane
Owners Representative
505-453-3718

From: Rodenbeck, Jay B. <jrodenbeck@cabq.gov>
Sent: Thursday, February 15, 2024 5:38 PM
To: Cody Lane <cody_lane@uhaul.com>
Subject: Fw: NMDOT Contacts for Railroad Questions

CAUTION: This email came from an external sender. Do not click **links** or **attachments** unless you know the sender and the content is safe.

From: Rodenbeck, Jay B.
Sent: Thursday, February 15, 2024 4:44 PM
To: cody_lane@uhaul.com <cody_lane@uhaul.com>
Cc: Biazar, Shahab <sbiazar@cabq.gov>; Webb, Robert L. <rwebb@cabq.gov>
Subject: NMDOT Contacts for Railroad Questions

Good afternoon Cody,

We can confirm the following NMDOT contacts to inquire with regarding removing the rail lines on the property at 8200 Jefferson Street NE:

1. Liz Nauman: (505) 526-1046
2. Liz Olsen: (505) 526-5877
3. Robert Fine: (505) 629-2830



Jay Rodenbeck

Planning Manager
Development Review Services
o (505) 924-3994
c (505) 553-0682
e jrodenbeck@cabq.gov
cabq.gov/planning

Renee Brissette, PE CFM
Senior Engineer, Hydrology
City of Albuquerque
11110 Johnson Drive
Shawnee, KS 66203
913-742-6010



**RE: ENGINEERING PRE-SUBMITTAL COMMENTS/RESPONSES #1
8200 JEFFERSON STREET NE / U-HAUL DEVELOPMENT**

Renee:

Thank you for taking the time to review the Conceptual Grading and Drainage plan for the proposed U-Haul development at 8200 Jefferson Street NE. We have received the city's review comments dated January 29, 2024 and have prepared the following information to address your review comments. Please note that for your convenience each review item is restated below along with our corresponding response.

COMMENTS

1. Per the DPM, the following must be on the Grading Plan. Please note the Grading Plan must be a stand-alone construction document.
 - a. Please provide a licensed New Mexico civil engineer's stamp with a signature and date.
 - b. Please provide a Vicinity Map. Typically, this is the Zone Atlas. This can be downloaded in pdf format from the City of Albuquerque's website.
 - c. Please provide the Benchmark information (location, description and elevation) for the survey contour information provided.
 - d. Please provide the FIRM Map and flood plain note with effective date.
 - e. Please provide a legal Description of the property.

ISG Response: This has been provided in the G&D Plan.

2. Please use the procedure for 40 acre and smaller basins as outlined in Development Process Manual (DPM) Article 6-2(a). Please provide both the existing conditions and proposed conditions for the 100 year-6 hour storm event.

ISG Response: Stormwater calculations have been revised to match this requirement.

3. Please follow the DPM Article 6-12 Stormwater Quality and Low-Impact Development for the sizing calculations. To calculate the required SWQV, multiply the impervious area (Square feet) draining to the BMP by 0.42 inches for new development sites divided by 12 to get the required volume in cubic feet. The calculations of both the required and the provided volume of each BMP must be shown on the Grading and Drainage Plan. Each BMP should be labeled on the Grading and Drainage Plan with the required SWQV and associated water surface elevation and the 100-year water surface elevation. Landscaping of surface BMPs is also required to be noted on the Grading and Drainage Plan.

ISG Response: Calculations have been provided on the G&D Plan.

4. Please show the existing railroad spur that goes through the property along with the railroad easement.

ISG Response: Existing railroad line is removed from the plans as it will be removed as part of this project. See below response for comment #5 regarding this in more detail.

5. The Site Plan shows a proposed building and site work over the existing railroad spur and railroad easement noted in Comment #4. Please provide a notarized letter from the owner of the existing railroad easement stating that construction can be done on their easement.

ISG Response: Documentation has been provided between the NMDOT and City of Albuquerque planning staff that this railroad line can be removed as it is no longer connected to the NMDOT railroad and U-Haul owns the line that runs across this site.

6. Since there is an existing railroad spur through the site as indicated in Comment #4, the site will have two separate drainage discharge points. The southern portion drains to a Stormwater Quality Pond with an emergency spillway as a sidewalk culvert to Paseo de Norte Access Rd. The northern portion drains to a Stormwater Quality Pond with an emergency spillway as a sidewalk culvert to Domingo Baca Rd.

ISG Response: Railroad to be removed as part of this project and will not be split into a north and south drainage area based on the railroad's placement on the site due to it being removed. There will be two stormwater outlets of this site on Jefferson ST NE,, one in the northwest corner and one in the southeast corner. No other locations work for outlets onto the site due to elevation constraints of the outlets and roadway elevations.

7. Please provide the weir calculations, per DPM Article 6-16(A), for the curb cuts and sidewalk culverts. A coefficient of 2.7 is typically used for the weir equation $Q = CLH^{2/3}$.

ISG Response: Weir/channel calculations provided in this report.

8. A waterblock, 0.87' high, per COA Paving Detail No. 2426, is required at the driveway entrance.

ISG Response: A water block over 1 ft high is provided at the west driveway entrance.

9. Please note Paseo del Norte Access Road is within NMDOT jurisdiction. Since this project runoff goes into the New Mexico Department of Transportation's (NMDOT) Right of Way, written concurrence must be obtained from NMDOT D3 Drainage that this project can proceed. Please contact Tim Trujillo P.E (TimothyR.Trujillo@state.nm.us or 505-373-4987).

ISG Response: NMDOT has been contacted and Tim Trujillo has provided acceptance to our plans per the attached email.

10. Add a note on the Grading Plan, "Prior to any work within the New Mexico Department of Transportation (NMDOT) Right-of-Way, an NMDOT permit will be required." Provide a copy of the issued permit prior to requesting Certificate of Occupancy.

ISG Response: Note has been added.

As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Doug Hughes, PE, jhughes@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

Please see the enclose revised plan sheets for review. You can contact me at 515-243-9143 or Alex.Amadeo@ISGInc.com with any questions or if there is any additional information we can provide in support of this project.

Sincerely,



Alex Amadeo, PE
Project Engineer

Stormwater Management Report

*U-Haul
Albuquerque, New Mexico*

Date: April 11, 2024

ISG Project #: 23-28816



Architecture
Engineering
Environmental
Planning

ISGInc.com

REPORT FOR:
Tiequan Chen, PE
Principal Engineer, Hydrology
City of Albuquerque
600 2nd Street NW
Albuquerque, NM 87102
tchen@cabp.gov

FROM:
Ryan Anderson, PE
Civil Engineer
ISG
7900 International Drive
Bloomington, MN 55425
952.426.0699

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APPENDICES

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INTRODUCTION

This stormwater management report was prepared in conjunction with site plans to facilitate the construction of a U-Haul Storage Facility in Albuquerque. The project site is located at 8200 Jefferson Street NE, Albuquerque, New Mexico. The total area of the lot and the planned area of disturbance is approximately 8.87 acres. The proposed project scope will include the installation of underground utilities, grading, sidewalks, new buildings, and stormwater best management practices.

In concurrence with the production of site plans, hydrologic and hydraulic models were developed to generate the data presented within this report. Given that the project will disturb more than one acre of land, a NPDES Construction Stormwater Permit and approval from the City of Albuquerque will be required.

EXISTING SITE DRAINAGE CONDITIONS

The existing site contains a paved lot consisting of both concrete and asphalt. The site also includes an old railroad spur. The unpaved portion of the lot is vegetated with grass and shrubs. Given the existence of an artificial surface, this project is a redevelopment. A geotechnical evaluation was conducted by Terracon, who provided a report dated February 6, 2023. The report is available in Appendix A.

The geotechnical evaluation indicates that the site is primarily sands, with borings ranging in depth from 11.5 ft to 26.5 ft. The predominant soil on site is silty sand with depths ranging from less than 4 feet to more than 26.5 feet deep. Pockets of sandy silt were also found. Groundwater was not encountered during the investigation, nor did the geotechnical review find sinkholes or underground mining associated with this area of Albuquerque. Given the predominance of sands, the site was modeled using Hydrologic Soil Group A.

The existing site has slopes ranging from 0% to 33%, with the topography sloping west toward Jefferson St NE. All runoff from the site is conveyed via surface flow, either directly to Jefferson St NE or indirectly through the lot adjacent the south portion of the site, before discharging to City storm infrastructure. The existing drainage conditions are shown on the Existing Conditions Drainage Map in Appendix B and summarized in Table 1 below. The existing site is approximately 16.1% impervious, which is 1.43 ac.

Table 1: Existing Drainage Conditions

| Drainage Area | Impervious Area (ac) | Pervious Area (ac) | Total Area (ac) | Weighted Curve Number (CN) | Drains To |
|---------------|----------------------|--------------------|-----------------|----------------------------|-----------|
| EX-1 | 1.43 | 5.30 | 6.73 | 81 | Offsite |
| EX-2 | 0.00 | 2.15 | 2.15 | 77 | Offsite |
| Total | 1.43 | 7.45 | 8.88 | 80 | - |

PROPOSED SITE DRAINAGE CONDITIONS

The proposed site will include two buildings with footprints ranging in size from 23,000 square feet to 35,100 square feet, multiple outdoor self-storage buildings, covered RV parking spaces, a parking lot, stormwater management facilities, and other associated site work. Within the redevelopment, there are 7.21 ac of new and reconstructed impervious surfaces, resulting in the proposed final impervious coverage of 81.3%. Taking existing impervious areas into account, the net increase in impervious area is 5.83 ac. The remaining lot will consist of pervious landscaped areas.

Runoff from the buildings and the majority of the parking lot will be conveyed via surface flow and storm sewer to the northwest basin, located in the northwest corner of the lot. The outlet of this basin will be through a series of 5 sidewalk culverts that are 2 ft wide each. A small portion of the parking lot will surface flow to infiltration basin 2 in the southwest corner of the lot. The outlet of this basin will be through a one sidewalk culverts that is 2 ft wide. These basins will be constructed in native soils, as the soil borings indicate that the basin bottoms will be located below topsoil elevations. Native soils in these locations are silty sand and have an infiltration rate of 1.67 inches per hour, determined using the City of Albuquerque Design Manual.

Both rate control and water quality components are addressed via the onsite infiltration basins. The Proposed Conditions Drainage Map is provided in Appendix C, summarized in Table 2 below.

Table 2: Proposed Drainage Conditions

| Drainage Area | Impervious Area (ac) | Pervious Area (ac) | Total Area (ac) | Weighted Curve Number (CN) | Drains To |
|---------------|----------------------|--------------------|-----------------|----------------------------|-----------------|
| DA-1 | 6.67 | 1.3 | 7.97 | 95 | Northwest Basin |
| DA-2 | 0.54 | 0.36 | 0.90 | 90 | Southwest Basin |
| Total | 7.21 | 1.66 | 8.87 | 94 | - |

STORMWATER CALCULATIONS

Stormwater calculations were performed utilizing rainfall data from NOAA Atlas 14. Additional information used in the design of the stormwater management system includes survey data, aerial photos, soil data, and the City of Albuquerque Development Process Manual.

Drainage calculations were performed utilizing the City of Albuquerque Development Process Manual for drainage basins 40 acres and smaller. These calculations are included within the model reports in Appendices D and E for existing and proposed conditions, respectively.

Peak Flow Management

The peak flow rates are designed via the peak discharge rate from Chapter 6 of the DPM for the City of Albuquerque. The peak discharge rate for DA-1 is 31.39 cfs and is contained with a series of 5 sidewalk culverts that are 2 ft wide that will outlet to Jefferson St to the west. These 5 sidewalk culverts can contain 6.3 cfs each so 5 of them will allow the peak discharge rate for DA-1. Prior to outletting into Jefferson St this drainage area is

outletted to an infiltration basin that will store the storm water quality volume for the site. DA-2 discharges a majority of its drainage area to an infiltration basin to the south side of the site directly south of the self-storage building in the southwest corner. The overflow location of this infiltration basin will discharge to the north and convey through a drainage swale that will run parallel to the building and then to the west towards Jefferson St. The outlet of DA-2 will discharge to Jefferson St via 1 sidewalk culvert that is 2 ft wide. A summary of existing and proposed flows is provided in Appendix D.

Storm Sewer Sizing

Storm sewer was sized using the Rational method for the 10-year and 100-year storm events. All storm sewer intakes were sized using the 10-year and 100-year storm events to ensure they provide sufficient capacity. Storm sewer sizing and intake capacity calculations can be found in Appendix F. Additionally, the City of Albuquerque requires hydraulic grade line information for all pipes that are 18 inches in diameter or greater. A model of the storm sewer was created using Autodesk Storm and Sanitary Analysis, and a results report containing hydraulic grade line information can be found in Appendix F.

Volume Control and Water Quality

In accordance with City regulations for redevelopments, the stormwater best management practices (BMPs) must provide treatment for the stormwater water quality volume (SWQV) which is the runoff from the 0.48" storm event. As per the City of Albuquerque Design Process Manual, the SWQV is the impervious area of the site multiplied by 0.26 inches. The two proposed infiltration basins will provide water quality volume for the redevelopment. These infiltration practices manage runoff through the 100-year 24-hour storm and exceeds City of Albuquerque requirements. SWQV calculations can be found in Appendix F.

The bottom of proposed northwest infiltration basin 1 sits at an elevation of 5119.00 ft and the bottom of proposed infiltration basin 2 sits at an elevation of 5126.00 ft. These are not anticipated to interfere with the groundwater table, since no groundwater was encountered during the geotechnical investigation. Therefore, adequate ground water separation will be achieved between the bottom of the basins and the assumed groundwater table.

STORMWATER MANAGEMENT

Erosion control measures will be implemented before, during, and after construction. Proposed temporary erosion control measures include installation of silt fence, a stabilized construction entrance, inlet protection devices, and a designated concrete washout area. Permanent erosion control will primarily be achieved via the establishment of vegetation and the presence of infiltration basins. Locations of the proposed BMPs, along with construction activity notes are provided on sheets C1-10 through C1-40 of the plans (provided separately). The general sequence of construction activities shall be:

1. Install temporary erosion control BMPs

2. Stripping topsoil, soil corrections, and rough grading
3. Footing excavation and construction
4. Installation of underground utilities
5. Subgrade preparation for parking lot
6. Construction of curb and gutter
7. Construction of pavement
8. Turf restoration and landscaping
9. Stabilization and establishment of turf
10. Removal of temporary erosion control BMPs

After construction and site stabilization are complete, the proposed infiltration basins will provide water quality and rate control management for the site.

CONCLUSION

The proposed project provides a stormwater management system that meets all NPDES and City of Albuquerque requirements.

Appendix A: Geotechnical Report



Geotechnical Engineering Report

Proposed U-Haul Storage Buildings

U-Haul Site #724081

8200 Jefferson Street NE

Albuquerque, New Mexico

February 6, 2023

Terracon Project No. 66215225 Revised

Prepared for:

AMERCO Real Estate/U-Haul Int'l

Phoenix, Arizona

Prepared by:

Terracon Consultants, Inc.

Albuquerque, New Mexico

terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials

February 6, 2023

AMERCO Real Estate/U-Haul Int'l
2727 N. Central Avenue, #5N
Phoenix, Arizona 85004



Attn: Ms. Sabrina Perez, M.ASCE
P: (602) 263-6502
E: Sabrina_Perez@uhaul.com

Re: Geotechnical Engineering Report Pro-
posed U-Haul Storage Buildings
U-Haul Site #724081
8200 Jefferson Street NE
Albuquerque, New Mexico
Terracon Project No. 66215225 Revised

Dear Ms. Perez:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. P66215225 dated November 5, 2021. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations, floor slabs, and pavements for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

A handwritten signature in black ink, appearing to read "E. Gordon".


For Elliott M. Gordon, E.I.
Staff Engineer



REPORT TOPICS

| | |
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Note: This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the

 logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

SITE LOCATION AND EXPLORATION PLANS

PHOTOGRAPHY LOG

EXPLORATION RESULTS (Boring Logs and Laboratory Data)

SUPPORTING INFORMATION (General Notes and Unified Soil Classification System)

EXECUTIVE SUMMARY

A geotechnical exploration has been performed for the proposed U-Haul Storage Buildings in Albuquerque, New Mexico. Terracon's geotechnical scope of work included the advancement of fourteen (14) soil borings to depths ranging from approximately 11-½ to 26-½ feet below existing site grades. The site generally appears suitable for the proposed construction based upon geotechnical conditions encountered in the borings and our current understand of the proposed development. The following geotechnical considerations were identified:

- Generally, the borings encountered consists of silty and clayey sands and sandy silts with variable amounts of gravel. Lean clay was encountered in B-05 from about 5 to 10 feet below site grade. Groundwater was not encountered at the time of drilling.
- Detailed grading plans were not available at the time this report was prepared; however, we anticipate that up to 1 to 2 feet of fill will be required to develop final site grade. Removal and recompaction will be required for any loose/soft soils. Prior to placing fill, low strength or unstable soils identified during proofrolling should be removed and replaced.
- Foundations for the 3-story storage buildings can bear on five (5) feet of structural fill. Foundation for showroom and 1-story storage building can bear on three (3) feet of structural fill. Self-storage units are anticipated to be slab-on-grade and can bear on two (2) foot of structural fill. Recompacted native soils are suitable for use as structural fill. When prepared as outlined in this report, the shallow foundations bearing on structural fill/recompacted native soils can be designed with a contact bearing pressure of 3,000 psf.
- Generally, loose to medium dense clayey/silty sand or medium stiff to very stiff silts are anticipated to be exposed at floor slab and pavement subgrade elevations. We recommend the floor slabs bear on at least three (3) feet of structural fill/recompacted native soils.
- Pavement sections can be developed on approved native soils provided they pass proofrolling and are moisture conditioned and compacted as recommended in the report.
- The 2018 International Building Code seismic site classification for this site is D.

Geotechnical Engineering Report

Proposed U-Haul Storage Buildings

U-Haul Site #724081

8200 Jefferson Street NE

Albuquerque, New Mexico

Terracon Project No. 66215225 Revised

February 6, 2023

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed U-Haul Storage Buildings to be located at 8200 Jefferson Street NE in Albuquerque, New Mexico. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Lateral earth pressures
- Excavation considerations
- Foundation design and construction
- Floor slab design and construction
- Seismic site classification per IBC
- Pavement design and construction

The geotechnical engineering scope of services for this project included the advancement of fourteen (14) test borings to depths ranging from approximately 11-½ to 26-½ feet below existing site grades.

Maps showing the site and boring locations are shown in the **Site Location** and **Exploration Plan** sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs in the **Exploration Results** section of this report.

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Geotechnical Engineering Report

Proposed U-Haul Storage Buildings ■ Albuquerque, New Mexico

February 6, 2023 ■ Terracon Project No. 66215225 Revised



| Item | Description |
|-----------------------|---|
| Parcel Information | The project is located at 8200 Jefferson Street NE in Albuquerque, New Mexico. Approximately 9.2 acres See Site Location |
| Existing Improvements | Currently an undeveloped parcel. Evidence indicating of previous development of site consisting of asphalt concrete pavement, Portland cement concrete pavement/slabs, railroad spur, landscaping, and steel chain link perimeter fencing |
| Current Ground Cover | Asphalt, concrete, railroad spur, landscaping, soil, and vegetation |
| Existing Topography | Gently sloping down to the west and southwest |
| Subsurface Conditions | The site generally consists of clayey/silty sand and sandy silts with variable amounts of gravel. |

We also collected photographs at the time of our field exploration program. Representative photos are provided in our **Photography Log**.

PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and was discussed in the project planning stage. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

| Item | Description |
|----------------------|---|
| Information Provided | Project information was provided in emails received from AMERCO on November 3 and 4, 2021 and included the following: <ul style="list-style-type: none">■ Aerial photograph with proposed number and location of borings■ AMERCO Geotechnical Requirements (2021-02-23) Updated 2018-02-01■ ROE/COI Information (TBD) |
| Planned Development | The project will consist of the following: <ul style="list-style-type: none">■ 1 to 3-story, at-grade buildings■ Self-storage units■ RV Canopies (column supported roof)■ Asphalt and/or concrete paved parking areas and drives■ Light poles■ Covered parking■ Utilities |

Geotechnical Engineering Report

Proposed U-Haul Storage Buildings ■ Albuquerque, New Mexico

February 6, 2023 ■ Terracon Project No. 66215225 Revised



| Item | Description |
|--|--|
| Building Construction | <ul style="list-style-type: none">■ Building: Load-bearing masonry walls, steel frame, and/or wood frame with slab-on-grade floor system■ RV Canopies: Steel structures■ Self-storage: Pre-manufactured metal/steel structures |
| Finished Floor Elevation | Within 1 to 2 feet existing site grade (assumed). |
| Maximum Loads | <ul style="list-style-type: none">■ Columns: 150 to 200 kips■ Walls: 5 to 10 kips per linear foot (klf)■ Slabs: 150 to 350 pounds per square foot (psf) (assumed) |
| Grading/Slopes | Up to 1 to 2 feet of cut and fill will be required to develop final grade (assumed). |
| Below Grade Structures | No basements being incorporated into the design of the buildings. The project may or may not include below grade loading docks and/or elevator pits. |
| Free-Standing Retaining Walls | Retaining walls will not be constructed as part of site development to achieve final grades (assumed). |
| Pavements | <p>Rigid (concrete) and flexible (asphalt) pavement sections should be considered.</p> <p>Traffic is assumed to include passenger cars and trucks, Recreational Vehicles (RV) and fire/emergency vehicles. Both rigid (concrete) and flexible (asphalt) pavement sections should be considered</p> <p>Expected design traffic is as follows:</p> <ul style="list-style-type: none">■ Light Traffic Loads: Autos/light trucks - 50,000 total ESALs■ Medium Traffic Loads: Truck/RV Drives - 110,00 total ESALs■ Heavy Traffic Loads: Occasional Fire Apparatus Equipment and/or large trucks - 180,000 total ESALs <p>The pavement design period is 20 years.</p> <p>Pavement design using a minimum reliability of 90 to 95% reliability</p> |
| Estimated Start of Construction | 2022 |

GEOTECHNICAL CHARACTERIZATION

Regional and Site Geology

The site occupies a position between the gently sloping piedmont surface on the east side of the Albuquerque-Belen basin and the Rio Grande flood plain. The piedmont surface extends from the Sandia Mountains to the Rio Grande. The Albuquerque-Belen basin is part of an

Geotechnical Engineering Report

Proposed U-Haul Storage Buildings ■ Albuquerque, New Mexico

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interconnected series of north-south aligned grabens and structural basins which have subsided between mountain and highland uplifts comprising the Rio Grande Rift. The complex structural basin was formed during the Tertiary Period, more than seven million years ago, when the Sandia-Manzano fault block was uplifted and tilted. The basin is approximately 100 miles long and varies from 20 to 40 miles wide. The sloping surface of the valley fill consists of a series of coalescing alluvial fans deposited unconformably on the formations of the Santa Fe Group. The Santa Fe Group consists of beds of unconsolidated to loosely consolidated sediments (detritus consisting of gravel, sand, silt, clay, and caliche) locally interbedded with volcanic rocks.

Based upon review of available literature/maps and our experience in the general area, underground mining and sinkhole activity are not associated with this area of Albuquerque, New Mexico.

Subsurface Profile

We have developed a general characterization of the subsurface soil and groundwater conditions based upon our review of the data and our understanding of the geologic setting and planned construction. The following table provides our geotechnical characterization.

The geotechnical characterization forms the basis of our geotechnical calculations and evaluation of site preparation, foundation options and pavement options. As noted in **General Comments**, the characterization is based upon widely spaced exploration points across the site, and variations are likely.

| Stratum | Approximate Depth to Bottom of Stratum (feet) | Material Description | Consistency/Density |
|---------|---|---|----------------------------|
| 1 | < ½ | 2" of Asphalt Concrete ¹ | N/A |
| 2 | 5 to 21-½ or deeper | Silt and Lean Clay. The sand and gravel content varied. | Medium Stiff to Very Stiff |
| 3 | 26-½ or deeper | Sand. The clay, silt, and gravel content varied. | Loose to Medium Dense |

1. Encountered only in Boring P-01 and P-02

Conditions encountered at each boring location are indicated on the individual boring logs shown in the **Exploration Results** section and are attached to this report. Stratification boundaries on the boring logs represent the approximate location of changes in native soil types; in situ, the transition between materials may be gradual.

Groundwater Conditions

The boreholes were observed while drilling and after completion for the presence and level of groundwater. The water levels observed in the boreholes can be found on the boring logs in **Exploration Results**, and are summarized below.

Groundwater was not observed in the borings while drilling, or for the short duration the borings could remain open. Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff, and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the structure may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

GEOTECHNICAL OVERVIEW

The site appears suitable for the proposed construction based upon geotechnical conditions encountered in the test borings. The site could be characterized by silty and clayey sand or sandy silt with variable amounts of gravel. Lean clay was encountered in B-05 from about 5 to 10 feet below site grade. Near surface soils which show moderate to high tendency for compression/collapse when elevated in moisture content will require particular attention in the design and construction.

Based on the geotechnical subsurface exploration, the laboratory test results, and our engineering analyses, the proposed buildings can be supported on a spread and continuous footing foundation system or a monolithic slab foundation bearing on a zone of structural fill/recompacted native soils. In addition, a slab-on-grade floor system supported on a zone of engineered fill/recompacted native soils can be used, provided some movement can be tolerated. The proposed retaining walls can be supported on a zone of engineered fill/recompacted native soils. On-site soils are suitable for use as engineered fill beneath foundations and floor slabs, and pavements. Any engineered fill required to raise the site to construction grade can be included in the recommended engineered fill zone. Foundation excavations are expected to be achieved with conventional earth moving equipment. Loose or caving soils may be encountered in shallow excavations such as foundation footings. If neat line excavation is to be used, the foundation dimensions must be accurately maintained. If accurate footing dimensions cannot be maintained during excavation, the use of form boards will be required.

Geotechnical engineering recommendations for foundation systems and other earth connected phases of the project are outlined below. The recommendations contained in this report are based upon the results of field and laboratory testing (which are presented in **Exploration Results**), engineering analyses, and our current understanding of the proposed project.

The **General Comments** section provides an understanding of the report limitations.

EARTHWORK

Earthwork will include clearing and grubbing, excavations, and razing abandoned utilities and pavements. The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria as necessary to render the site in the state considered in our geotechnical engineering evaluation for foundations, floor slabs, and pavements.

Site Preparation

Prior to placing fill, existing asphalt, vegetation, structures, and root mat should be removed. Complete stripping of the topsoil should be performed in the proposed building and parking/driveway areas.

The subgrade should be proofrolled with an adequately loaded vehicle such as a fully loaded tandem axle dump truck. The proof-rolling should be performed under the direction of the Geotechnical Engineer. Areas excessively deflecting under the proof-roll should be delineated and subsequently addressed by the Geotechnical Engineer. Such areas should either be removed or modified by stabilizing with lime, fly ash, kiln dust, cement, or geotextiles. Excessively wet or dry material should either be removed, or moisture conditioned and recompacted.

Fill Material Types

Fill required to achieve design grade should be classified as structural fill and general fill. Structural fill is material used below, or within five (5) feet of structures, pavements, or constructed slopes. General fill is material used to achieve grade outside of these areas. Earthen materials used for structural and general fill should meet the following material property requirements:

| Soil Type ¹ | USCS Classification | Acceptable Parameters (for Structural Fill) |
|-------------------------|--------------------------------|---|
| Imported Granular Soils | GW, GP, GM, GC, SW, SP, SM, SC | Less than 35% Passing #200 sieve |
| On-Site Soils | ML, SC, SM, SW-SM | Material on-site is suitable for use as structural fill |

1. Structural and general fill should consist of approved materials free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade. A sample of each material type should be submitted to the Geotechnical Engineer for evaluation prior to use on this site.

Fill Compaction Requirements

Structural and general fill should meet the following compaction requirements.

| Item | Structural Fill | General Fill |
|---|--|---|
| Maximum Lift Thickness | 8 inches or less in loose thickness when heavy, self-propelled compaction equipment is used 4 to 6 inches in loose thickness when hand-guided equipment (i.e., jumping jack or plate compactor) is used | Same as Structural fill |
| Minimum Compaction Requirements ^{1, 2, 3} | 95% of max. above foundations, below floor slabs, and more than 1 foot below finished pavement subgrade | 90% of max. |
| Water Content Range ¹ | Granular: -3% to +3% of optimum | As required to achieve min. compaction requirements |

1. Maximum density and optimum water content as determined by the modified Proctor test (ASTM D1557).
2. If the granular material is a coarse sand or gravel, or of a uniform size, or has a low fines content, compaction comparison to relative density may be more appropriate. In this case, granular materials should be compacted to at least 70% relative density (ASTM D4253 and D4254).

Utility Trench Backfill

For low permeability subgrades, utility trenches are a common source of water infiltration and migration. Utility trenches penetrating beneath the buildings should be effectively sealed to restrict water intrusion and flow through the trenches, which could migrate below the building. The trench backfill should be placed and compacted to comply with the water content and compaction recommendations for structural fill stated previously in this report.

Grading and Drainage

All grades must provide effective drainage away from the buildings during and after construction and should be maintained throughout the life of the structures. Water retained next to the buildings can result in soil movements greater than those discussed in this report. Greater movements can result in unacceptable differential floor slab and/or foundation movements, cracked slabs and walls, and roof leaks. The roof should have gutters/drains with downspouts that discharge onto splash blocks at a distance of at least five (5) feet from the buildings.

Exposed ground should be sloped and maintained at a minimum three (3) percent away from the buildings for at least five (5) feet beyond the perimeter of the buildings. Locally, flatter grades may be necessary to transition ADA access requirements for flatwork. After building construction and landscaping, final grades should be verified to document effective drainage has been achieved. Grades around the structures should also be periodically inspected and adjusted as necessary.

as part of the structure's maintenance program. Where paving or flatwork abuts the structures a maintenance program should be established to effectively seal and maintain joints and prevent surface water infiltration.

Earthwork Construction Considerations

Shallow excavations, for the proposed structures, are anticipated to be accomplished with conventional construction equipment. Upon completion of filling and grading, care should be taken to maintain the subgrade water content prior to construction of floor slabs. Construction traffic over the completed subgrades should be avoided. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. Water collecting over, or adjacent to, construction areas should be removed. If the subgrade freezes, desiccates, saturates, or is disturbed, the affected material should be removed, or the materials should be scarified, moisture conditioned, and recompact, prior to floor slab construction.

As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, "Excavations" and its appendices, and in accordance with any applicable local, and/or state regulations.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety, or the contractor's activities; such responsibility shall neither be implied nor inferred.

Construction Observation and Testing

The earthwork efforts should be monitored under the direction of the Geotechnical Engineer. Monitoring should include documentation of adequate removal of vegetation and topsoil, proof-rolling and mitigation of areas delineated by the proof-roll to require mitigation.

Each lift of compacted fill should be tested, evaluated, and reworked as necessary until approved by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in the building areas and 5,000 square feet in pavement areas. One density and water content test for every 50 linear feet of compacted utility trench backfill.

In areas of foundation excavations, the bearing subgrade should be evaluated under the direction of the Geotechnical Engineer. In the event that unanticipated conditions are encountered, the Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

SHALLOW FOUNDATIONS

SHALLOW FOUNDATIONS

If the site has been prepared in accordance with the requirements noted in **Earthwork**, the following design parameters are applicable for the proposed spread footing foundations or monolithic slab foundation.

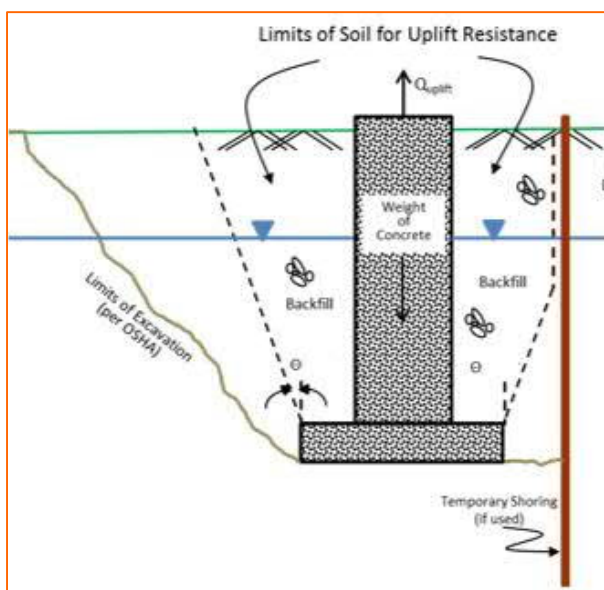
Design Parameters – Compressive Loads

| Item | Description |
|---|--|
| Maximum Net Allowable Bearing pressure ^{1, 2} | Monolithic Slab <ul style="list-style-type: none"> ■ 3,000 psf (foundations bearing within structural fill) Spread/Continuous or Circular Footings <ul style="list-style-type: none"> ■ 3,000 psf (foundations bearing within structural fill) |
| Required Bearing Stratum ³ | 1-story Showroom and Storage Building B <ul style="list-style-type: none"> ■ 3 feet of structural fill or recompacted native soils 3-story Storage Building A <ul style="list-style-type: none"> ■ 5 feet of structural fill or recompacted native soils RV Canopies and Self-storage Buildings <ul style="list-style-type: none"> ■ 2 feet of structural fill or recompacted native soils |
| Minimum Foundation Dimensions | Columns: 30 inches Continuous: 18 inches |
| Ultimate Passive Resistance ⁴ (equivalent fluid pressures) | 390 pcf (granular backfill) |
| Ultimate Coefficient of Sliding Friction ⁵ | 0.35 (granular backfill) |
| Minimum Embedment below Finished Grade ⁶ | Exterior footings: 18 inches Interior footings: 12 inches |
| Estimated Total Settlement from Structural Loads ² | Less than about ¾ inch |
| Estimated Differential Settlement ^{2, 7} | About 2/3 of total settlement |

| Item | Description |
|------|---|
| 1. | The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. An appropriate factor of safety has been applied. Values assume that exterior grades are no steeper than 20% within 10 feet of structure. |
| 2. | Values provided are for maximum loads noted in Project Description . |
| 3. | Unsuitable or soft soils should be over-excavated and replaced per the recommendations presented in the Earthwork . |
| 4. | Use of passive earth pressures require the sides of the excavation for the spread footing foundation to be nearly vertical and the concrete placed neat against these vertical faces or that the footing forms be removed, and compacted structural fill be placed against the vertical footing face. |
| 5. | Can be used to compute sliding resistance where foundations are placed on suitable soil/materials. Should be neglected for foundations subject to net uplift conditions. |
| 6. | Minimum embedment necessary to minimize the effects of frost and/or seasonal water content variations. For sloping ground, maintain depth below the lowest adjacent exterior grade within 5 horizontal feet of the structure. Actual depth to be determined by structural engineer to resist uplift and overturning loads |
| 7. | Differential settlements are as measured over a span of 50 feet. |

Design Parameters - Uplift Loads

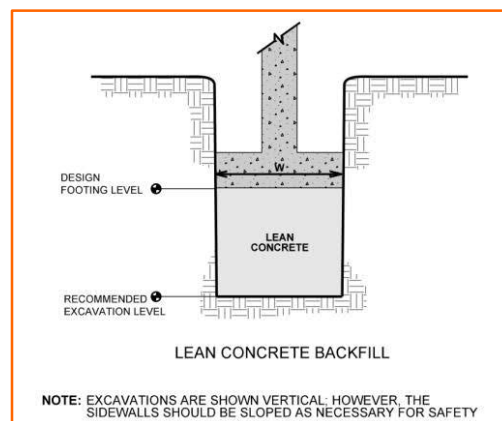
Uplift resistance of spread footings associated with the canopy can be developed from the effective weight of the footing and the overlying soils. As illustrated on the subsequent figure, the effective weight of the soil prism defined by diagonal planes extending up from the top of the perimeter of the foundation to the ground surface at an angle, θ , of 20 degrees from the vertical can be included in uplift resistance. The maximum allowable uplift capacity should be taken as a sum of the effective weight of soil plus the dead weight of the foundation, divided by an appropriate factor of safety. A maximum total unit weight of 100 pcf should be used for the backfill. This unit weight should be reduced to 40 pcf for portions of the backfill or natural soils below the groundwater elevation.



Foundation Construction Considerations

As noted in **Earthwork**, the footing excavations should be evaluated under the direction of the Geotechnical Engineer. Loose or caving soils may be encountered in shallow excavations such as foundation footings. If neat line excavation is to be used, the footings dimensions must be accurately maintained. If accurate footing dimensions cannot be maintained during excavation the use of form boards may be considered. The base of all foundation excavations should be free of water and loose soil, prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Care should be taken to prevent wetting or drying of the bearing materials during construction. Excessively wet or dry material or any loose/disturbed material in the bottom of the footing excavations should be removed/reconditioned before foundation concrete is placed.

If unsuitable bearing soils are encountered at the base of the planned footing excavation, the excavation should be extended deeper to suitable soils, and the footings could bear directly on these soils at the lower level or on lean concrete backfill placed in the excavations. This is illustrated on the sketch below.

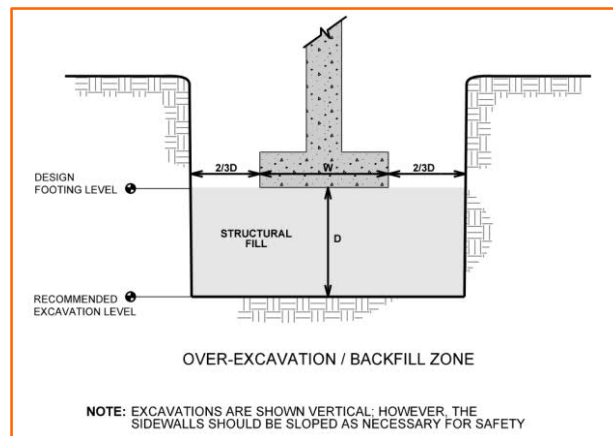


Over-excavation for structural fill placement below footings should be conducted as shown below. The over-excavation should be backfilled up to the footing base elevation, with recompact native soils placed, as recommended in the **Earthwork** section.

Geotechnical Engineering Report

Proposed U-Haul Storage Buildings ■ Albuquerque, New Mexico

February 6, 2023 ■ Terracon Project No. 66215225 Revised



SEISMIC CONSIDERATIONS

The seismic design requirements for buildings and other structures are based on Seismic Design Category. Site Classification is required to determine the Seismic Design Category for a structure. The Site Classification is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 20.4 of ASCE 7-16.

| Description | Value |
|--|----------------|
| 2012/15 International Building Code Site Classification ¹ | D ² |
| Site Latitude | 35.1758 |
| Site Longitude | -106.5920 |
| S _{DS} Spectral Acceleration for a Short Period ³ | 0.427g |
| S _{D1} Spectral Acceleration for a 1-Second Period ³ | 0.202g |
| S _{MS} Spectral Acceleration for a Short Period ³ | 0.64g |
| S _{M1} Spectral Acceleration for a 1-Second Period ³ | 0.303g |
| F _a Site Coefficient for a Short Period ³ | 1.446 |
| F _v Site Coefficient for a 1-Second Period ³ | 2.265 |

1. Seismic site classification in general accordance with the 2018 *International Building Code*, which refers to ASCE 7-16.
2. The 2018 *International Building Code* (IBC) uses a site profile extending to a depth of 100 feet for seismic site classification. Borings at this site were extended to a maximum depth of 26-½ feet. The site properties below the boring depth to 100 feet were estimated based on our experience and knowledge of geologic conditions of the general area. Additional deeper borings or geophysical testing may be performed to confirm the conditions below the current boring depth.
3. These values were obtained using online seismic design maps and tools provided by the USGS (<http://earthquake.usgs.gov/hazards/designmaps/>).

Liquefaction Potential

Groundwater was not encountered on the site. Medium dense soils were typically encountered below a depth of about 10 feet below existing site grade. Based upon the lack of groundwater at the site, the relative density of the subsurface soils, seismicity in the area, and our experience in the area, it is our opinion that the liquefaction potential is non-existent.

FLOOR SLABS

Based upon the shallow subsurface soil conditions, a slab-on-grade floor system supported on a zone of structural fill can be used, provided some movement can be tolerated.

Design parameters for floor slabs assume the requirements for **Earthwork** have been followed. Specific attention should be given to positive drainage away from the structure and positive drainage of the aggregate base beneath the floor slab.

Floor Slab Design Parameters

| Item | Description |
|--|--|
| Floor Slab Support ¹ | Showroom and storage buildings A and B ■ 3 feet of structural fill/recompacted native soils Self-storage buildings ■ 2 feet of structural fill/recompacted native soils |
| Estimated Modulus of Subgrade Reaction ² | 200 pounds per square inch per inch (psi/in) for point loads |

1. Floor slabs should be structurally independent of building footings or walls to reduce the possibility of floor slab cracking caused by differential movements between the slab and foundation.
2. Modulus of subgrade reaction is an estimated value based upon our experience with the subgrade condition, the requirements noted in **Earthwork**, and the floor slab support as noted in this table. It is provided for point loads. For large area loads the modulus of subgrade reaction would be lower.
3. Free-draining granular material should have less than 5 percent fines (material passing the #200 sieve). Other design considerations such as cold temperatures and condensation development could warrant more extensive design provisions.

The use of a vapor retarder should be considered beneath concrete slabs on grade covered with wood, tile, carpet, or other moisture sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the slab designer should refer to ACI 302 and/or ACI 360 for procedures and cautions regarding the use and placement of a vapor retarder.

Saw-cut control joints should be placed in the slab to help control the location and extent of cracking. For additional recommendations refer to the ACI Design Manual. Joints or cracks should be sealed with a waterproof, non-extruding compressible compound specifically recommended for heavy duty concrete pavement and wet environments.

Where floor slabs are tied to perimeter walls or turn-down slabs to meet structural or other construction objectives, our experience indicates differential movement between the walls and slabs will likely be observed in adjacent slab expansion joints or floor slab cracks beyond the length of the structural dowels. The Structural Engineer should account for potential differential settlement through use of sufficient control joints, appropriate reinforcing, or other means.

Floor Slab Construction Considerations

Finished subgrade within and for at least 10 feet beyond the floor slab should be protected from traffic, rutting, or other disturbance and maintained in a relatively moist condition until floor slabs are constructed. If the subgrade should become damaged or desiccated prior to construction of floor slabs, the affected material should be removed, and structural fill should be added to replace the resulting excavation. Final conditioning of the finished subgrade should be performed immediately prior to placement of the floor slab support course.

The Geotechnical Engineer should approve the condition of the floor slab subgrades immediately prior to placement of the floor slab support course, reinforcing steel and concrete. Attention should be paid to high traffic areas that were rutted and disturbed earlier, and to areas where backfilled trenches are located.

LATERAL EARTH PRESSURES

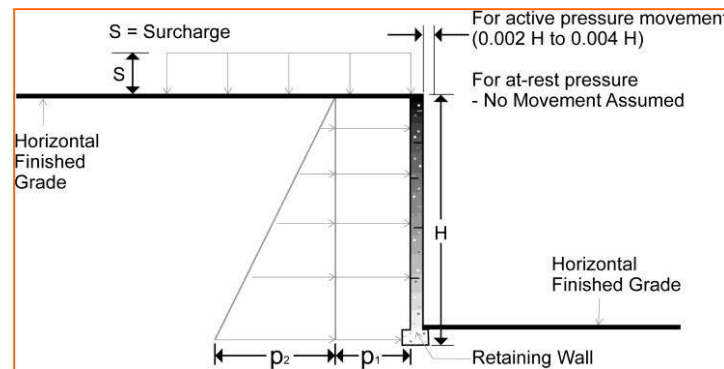
Design Parameters

Structures with unbalanced backfill levels on opposite sides should be designed for earth pressures at least equal to values indicated in the following table. Earth pressures will be influenced by structural design of the walls, conditions of wall restraint, methods of construction and/or compaction and the strength of the materials being restrained. Two wall restraint conditions are shown. Active earth pressure is commonly used for design of free-standing cantilever retaining walls and assumes wall movement. The "at-rest" condition assumes no wall movement and is commonly used for basement walls, loading dock walls, or other walls restrained at the top. The recommended design lateral earth pressures do not include a factor of safety and do not provide for possible hydrostatic pressure on the walls (unless stated).

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February 6, 2023 ■ Terracon Project No. 66215225 Revised



| Lateral Earth Pressure Design Parameters | | | |
|--|--|--|--|
| Earth Pressure Condition ¹ | Coefficient for Backfill Type ² | Surcharge Pressure ^{3, 4, 5} p_1 (psf) | Effective Fluid Pressures (psf) ^{2, 4, 5} |
| | | | Unsaturated ⁶ |
| Active (K_a) | Granular - 0.31 | $(0.31)S$ | $(37)H$ |
| At-Rest (K_o) | Granular - 0.41 | $(0.41)S$ | $(49)H$ |
| Passive (K_p) | Granular - 3.25 | --- | $(390)H$ |

1. For active earth pressure, wall must rotate about base, with top lateral movements 0.002 H to 0.004 H, where H is wall height. For passive earth pressure, wall must move horizontally to mobilize resistance.
2. Uniform, horizontal backfill, compacted to at least 95 percent of the ASTM D 1557 maximum dry density, rendering a maximum unit weight of 120 pcf.
3. Uniform surcharge, where S is surcharge pressure.
4. Loading from heavy compaction equipment is not included.
5. No safety factor is included in these values.

Backfill placed against structures should consist of granular soils or low plasticity cohesive soils. For the granular values to be valid, the granular backfill must extend out and up from the base of the wall at an angle of at least 45 and 60 degrees from vertical for the active and passive cases, respectively.

PAVEMENTS

General Pavement Comments

Pavement designs are provided for the traffic conditions and pavement life conditions as noted in **Project Description** and in the following sections of this report. A critical aspect of pavement performance is site preparation. Pavement designs, noted in this section, must be applied to the site, which has been prepared as recommended in the **Earthwork** section.

Pavement Design Parameters

Design of Asphaltic Cement Concrete (ACC) pavements are based on the procedures outlined in the National Asphalt Pavement Association (NAPA) Information Series 109 (IS-109). Design of Portland Cement Concrete (PCC) pavements are based upon American Concrete Institute (ACI) 330R-01; Guide for Design and Construction of Concrete Parking Lots.

The design of pavement thickness was based on the following:

- A soil characterization of medium based on the sands encountered at the site
- 90% reliability of asphalt
- A design life of 20 years
- Light Duty Traffic 50,000 ESALs: Traffic Class III
- Medium Duty Traffic 110,000 ESALs: Traffic Class III
- Heavy Duty Traffic: 180,000 ESALs: Traffic Class III/IV
- Modulus of subgrade reaction of 200 pci

Pavement Section Thicknesses

The following table provides options for ACC and PCC Sections:

| Asphaltic Concrete Design | | | |
|-----------------------------|-------------------------|------------------------|-------------------------|
| Layer | Thickness (inches) | | |
| | Light Duty ¹ | Med. Duty ¹ | Heavy Duty ¹ |
| ACC ² | 3 | 4-½ | 5 |
| Aggregate Base ³ | 6 | 6 | 6 |

1. See **Project Description** for more specifics regarding Light Duty and Medium Duty traffic.

2. All materials should meet the current City of Albuquerque (COA) or Department of Transportation (NMDOT) Standard Specifications for Highway and Bridge Construction.

- Asphaltic Surface - NMDOT Type SP-III Asphaltic Cement Concrete: Section 423

- Base Course - NDMOT Type I, Class I: Section 303

3. A minimum 1.5-inch surface course should be used on ACC pavements.

| Portland Cement Concrete Design | | | |
|---------------------------------|-------------------------|------------------------|-------------------------|
| Layer | Thickness (inches) | | |
| | Light Duty ¹ | Med. Duty ¹ | Heavy Duty ³ |
| PCC ² | 5 | 5-½ | 6 |

1. See **Project Description** for more specifics regarding traffic classifications.
2. All materials should meet the current City of Albuquerque (COA) or New Mexico Department of Transportation (NMDOT) Standard Specifications for Highway and Bridge Construction.
 - Concrete Pavement - NMDOT Portland Cement Concrete Type C: Section 509
3. In areas of anticipated heavy traffic, moving vans, fire trucks, delivery trucks, or concentrated loads (e.g., dumpster pads), and areas with repeated turning or maneuvering of heavy vehicles.

Pavement Design Considerations

The estimated pavement sections provided in this report are minimums for the assumed design criteria, and as such, periodic maintenance should be expected. Areas for parking of heavy vehicles, concentrated turn areas, and start/stop maneuvers could require thicker pavement sections. Edge restraints (i.e., concrete curbs or aggregate shoulders) should be planned along curves and areas of maneuvering vehicles. A maintenance program including surface sealing, joint cleaning and sealing, and timely repair of cracks and deteriorated areas will increase the pavement's service life. As an option, thicker sections could be constructed to decrease future maintenance.

Concrete for rigid pavements should have a minimum 28-day compressive strength of 4,000 psi and be placed with a maximum slump of 4 inches. Proper joint spacing will also be required to prevent excessive slab curling and shrinkage cracking. Joints should be sealed to prevent entry of foreign material and dowelled where necessary for load transfer.

Where practical, we recommend early-entry cutting of crack-control joints in PCC pavements. Cutting of the concrete in its "green" state typically reduces the potential for micro-cracking of the pavements prior to the crack control joints being formed, compared to cutting the joints after the concrete has fully set. Micro-cracking of pavements may lead to crack formation in locations other than the sawed joints, and/or reduction of fatigue life of the pavement.

Pavement design methods are intended to provide structural sections with adequate thickness over a subgrade such that wheel loads are reduced to a level the subgrade can support. The support characteristics of the subgrade for pavement design do not account for shrink/swell movements of a potentially expansive clay subgrade. Thus, the pavement may be adequate from a structural standpoint, yet still experience cracking and deformation due to shrink/swell related movement of the subgrade. It is, therefore, important to minimize moisture changes in the subgrade to reduce shrink/swell movements.

Openings in pavements, such as decorative landscaped areas, are sources for water infiltration into surrounding pavement systems. Water can collect in the islands and migrate into the surrounding subgrade soils thereby degrading support of the pavement. This is especially applicable for islands with raised concrete curbs, irrigated foliage, and low permeability near-surface soils. The civil design for the pavements with these conditions should include features to restrict or to collect and discharge excess water from the islands. Examples of features are edge drains connected to the storm water collection system, longitudinal subdrains, or other suitable outlet and impermeable barriers preventing lateral migration of water such as a cutoff wall installed to a depth below the pavement structure.

Dishing in parking lots surfaced with ACC is usually observed in frequently used parking stalls (such as near the front of buildings) and occurs under the wheel footprint in these stalls. The use of higher-grade asphaltic cement, or surfacing these areas with PCC, should be considered. The dishing is exacerbated by factors such as irrigated islands or planter areas, sheet surface drainage to the front of structures, and placing the ACC directly on a compacted clay subgrade.

Rigid PCC pavements will perform better than ACC in areas where short radii turning, and braking are expected (i.e., entrance/exit aprons) due to better resistance to rutting and shoving. In addition, PCC pavement will perform better in areas subject to large or sustained loads. An adequate number of longitudinal and transverse control joints should be placed in the rigid pavement in accordance with ACI and/or AASHTO requirements. Expansion (isolation) joints must be full depth and should only be used to isolate fixed objects abutting or within the paved area.

PCC pavement details for joint spacing, joint reinforcement, and joint sealing should be prepared in accordance with American Concrete Institute (ACI 330R-01 and ACI 325R.9-91). PCC pavements should be provided with mechanically reinforced joints (doweled or keyed) in accordance with ACI 330R-01.

Pavement Drainage

Pavements should be sloped to provide rapid drainage of surface water. Water allowed to pond on or adjacent to the pavements could saturate the subgrade and contribute to premature pavement deterioration. In addition, the pavement subgrade should be graded to provide positive drainage within the granular base section. Appropriate sub-drainage or connection to a suitable daylight outlet should be provided to remove water from the granular subbase.

We recommend at least 6 inches of free-draining granular material should be placed beneath the pavements. The use of a free draining granular base will also reduce the potential for frost action. We recommend pavement subgrades be crowned at least 2 percent, to promote the flow of water

towards the subdrains, and to reduce the potential for ponding of water on the subgrade. The design recommendations for the subdrains are provided in the following table:

Pavement Maintenance

The pavement sections represent minimum recommended thicknesses and, as such, periodic maintenance should be anticipated. Therefore, preventive maintenance should be planned and provided for through an on-going pavement management program. Maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment. Maintenance consists of both localized maintenance (e.g., crack, and joint sealing and patching) and global maintenance (e.g., surface sealing). Preventive maintenance is usually the priority when implementing a pavement maintenance program. Additional engineering observation is recommended to determine the type and extent of a cost-effective program. Even with periodic maintenance, some movements and related cracking may still occur, and repairs may be required.

Pavement performance is affected by its surroundings. In addition to providing preventive maintenance, the civil engineer should consider the following recommendations in the design and layout of pavements:

- Final grade adjacent to paved areas should slope down from the edges at a minimum 2%.
- Subgrade and pavement surfaces should have a minimum 2% slope to promote proper surface drainage.
- Install below pavement drainage systems surrounding areas anticipated for frequent wetting.
- Install joint sealant and seal cracks immediately.
- Seal all landscaped areas in or adjacent to pavements to reduce moisture migration to subgrade soils.
- Place compacted, low permeability backfill against the exterior side of curb and gutter.
- Place curb, gutter and/or sidewalk directly on clay subgrade soils rather than on unbound granular base course materials.

CORROSIVITY

Laboratory test results indicate that on-site soils have soluble sulfate concentrations ranging from 8 to 210 mg/kg, pH values ranging from 8.28 to 8.92, and minimum resistivity values ranging from 1,080 to 8,860-ohm centimeters. These values should be used to determine potential corrosive characteristics of the on-site soils with respect to contact with the various underground materials which will be used for project construction.

Criteria published by the Cast Iron Pipe Research Institute indicates that the near surface subgrade soils generally have a moderate corrosive potential to cause corrosion to buried ferrous materials. Review of data published by the National Association of Corrosion Engineers indicates

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that the resistivity values concentrations place the soils in the moderate to high corrosion category. If there is concern regarding pipe corrosion, the use of PVC or poly-wrap should be considered.

Results of soluble sulfate testing indicate that ASTM Type I/II or II Portland cement is suitable for all concrete on and below grade. Foundation concrete should be designed for low sulfate exposure in accordance with the provisions of the ACI Design Manual, Section 318, Chapter 4.

- Use of Type I or I/II modified cement for sulfate resistance
- Cement should have a tricalcium aluminate content of not more than 8 percent.
- Concrete mixture should contain at least 20 percent Class F fly ash.
- Provide air-entrainment of 4 to 7 percent by volume.
- Lower the water to cement ratio to 0.4 to 0.45.

GENERAL COMMENTS

As the project progresses, we address assumptions by incorporating information provided by the design team, if any. Revised project information that reflects actual conditions important to our services is reflected in the final report. The design team should collaborate with Terracon to confirm these assumptions and to prepare the final design plans and specifications. This facilitates the incorporation of our opinions related to implementation of our geotechnical recommendations. Any information conveyed prior to the final report is for informational purposes only and should not be considered or used for decision-making purposes.

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in the final report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our scope of services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials, or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is

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solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

| Borings Numbers | Boring Depth (feet) | Location |
|-----------------|---------------------|----------------------------|
| B-01 thru B-14 | 21-½ to 26-½ | Building areas |
| P-01 and P-02 | 11-½ | Pavement and parking areas |

Boring Layout and Elevations: Unless otherwise noted, Terracon personnel provide the boring layout. Coordinates are obtained with a handheld GPS unit (estimated horizontal accuracy of about ±10 feet). If elevations and a more precise boring layout are desired, we recommend borings be surveyed following completion of fieldwork.

Subsurface Exploration Procedures: We advance the borings with a truck-mounted, CME 55 drill rig using continuous flight, hollow-stem augers. Three samples are obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon is driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. A 3-inch O.D. split-barrel sampling spoon with 2.5-inch I.D. ring lined sampler was used for sampling in the upper five (5) feet. Ring-lined, split-barrel sampling procedures are similar to standard split spoon sampling procedure; however, blow counts are typically recorded for 6-inch intervals for a total of 12 inches of penetration. We observe and record groundwater levels during drilling and sampling. For safety purposes, all borings are backfilled with auger cuttings after their completion. Pavements are patched with cold-mix asphalt and/or pre-mixed concrete, as appropriate.

The sampling depths, penetration distances, and other sampling information are recorded on the field boring logs. The samples are placed in appropriate containers and taken to our soil laboratory for testing and classification by a geotechnical engineer. Our exploration team prepares field boring logs as part of the drilling operations. These field logs include visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. Final boring logs are prepared from the field logs. The final boring logs represent the geotechnical engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

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Laboratory Testing

The project engineer reviews the field data and assigns various laboratory tests to better understand the engineering properties of the various soil strata as necessary for this project. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods are applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D422 Standard Test Method for Particle-Size Analysis of Soils
- ASTM D2166/D2166M Standard Test Method for Unconfined Compressive Strength of Cohesive Soil
- ASTM D2850 Standard Test Method for Unconsolidated-Undrained Triaxial Compression Test on Cohesive Soils
- ASTM D2435/D2435M Standard Test Methods for One-Dimensional Consolidation Properties of Soils Using Incremental Loading
- ASTM G187 Standard Test Method for Measurement of Soil Resistivity Using the Two-Electrode Soil Box Method
- EPA Method 300.0 Determination of Inorganic Anions by Ion Chromatography
- EPA Method 9040C Ph Electronic Measurement

The laboratory testing program often includes examination of soil samples by an engineer. Based on the material's texture and plasticity, we describe and classify the soil samples in accordance with the Unified Soil Classification System.

SITE LOCATION

U-Haul 724XXX - Albuquerque, NM ■ Albuquerque, NM
February 6, 2023 ■ Terracon Project No. 66215225 REV

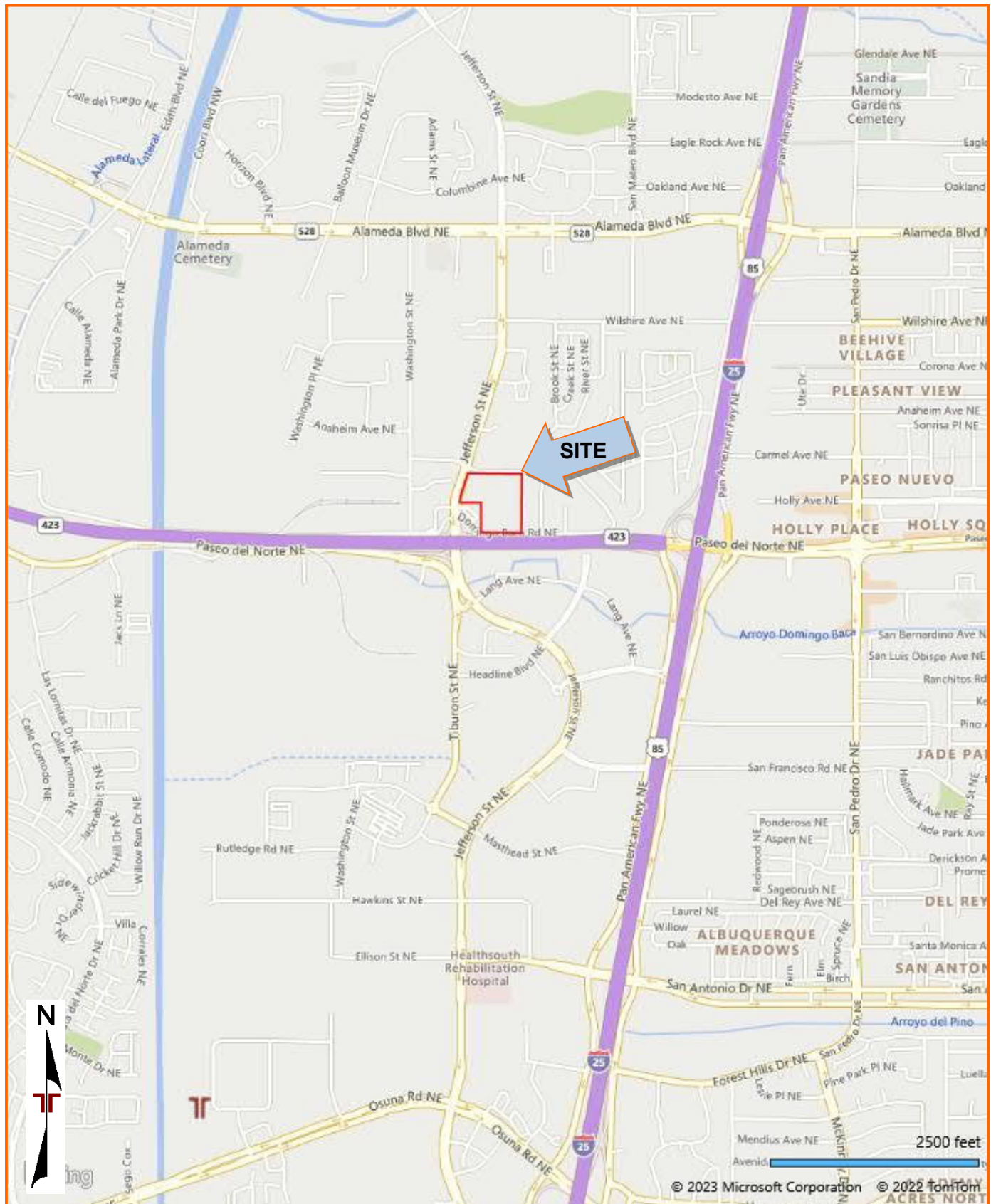


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

ROAD MAP PROVIDED BY MICROSOFT BING MAPS

EXPLORATION PLAN

U-Haul 724XXX - Albuquerque, NM ■ Albuquerque, NM
February 6, 2023 ■ Terracon Project No. 66215225 REV

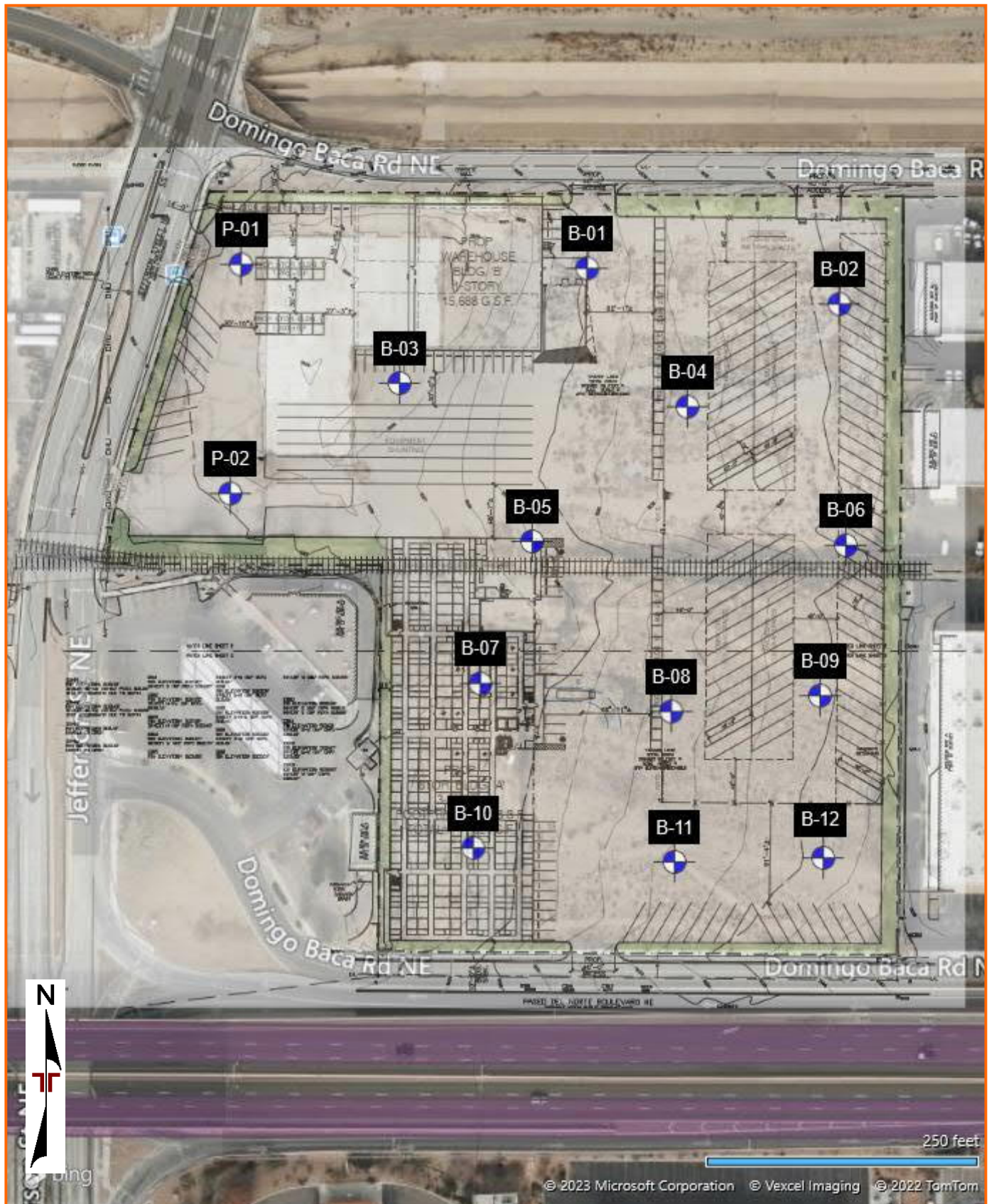


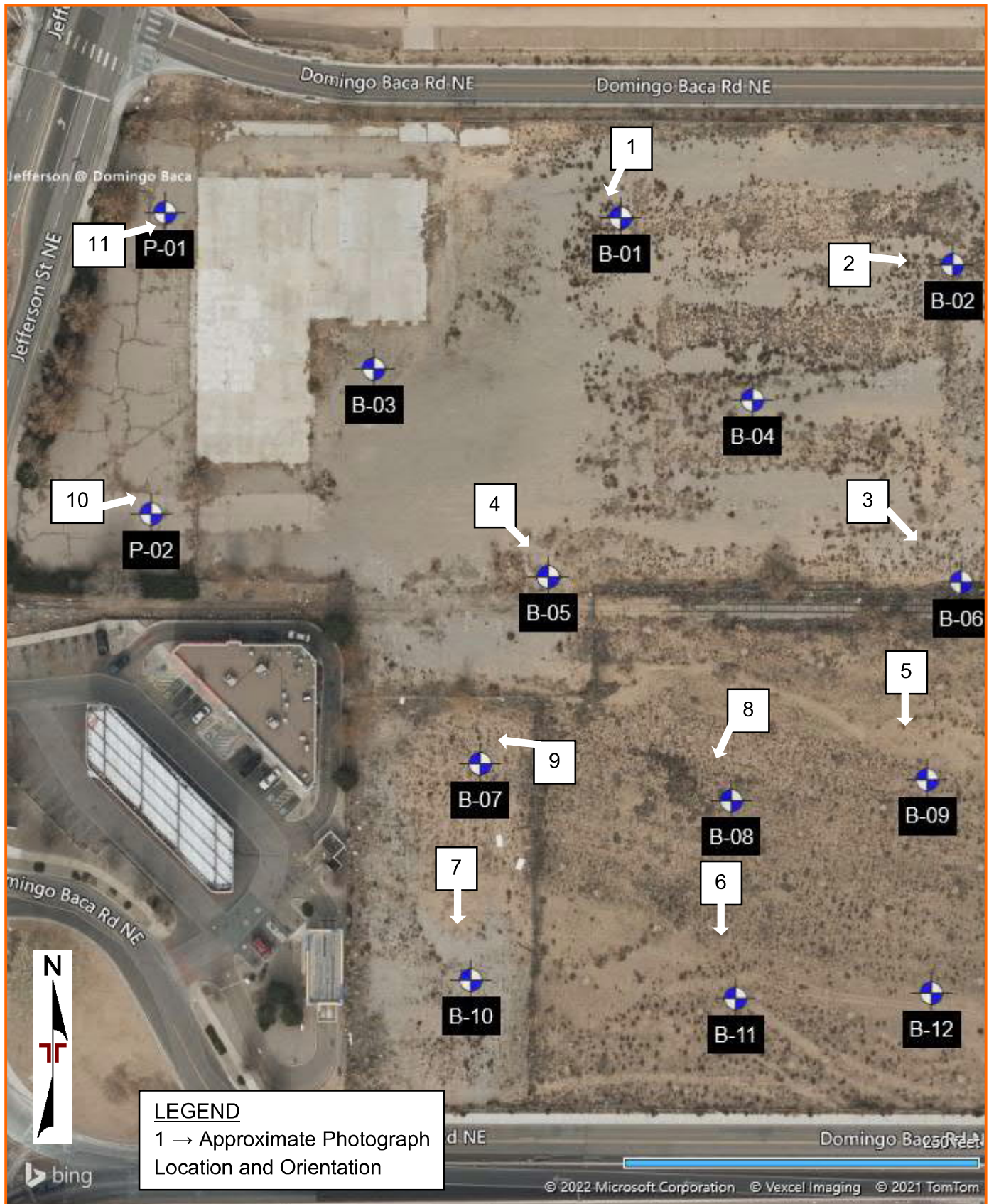
DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS
NOT INTENDED FOR CONSTRUCTION PURPOSES

AERIAL PHOTOGRAPHY PROVIDED
BY MICROSOFT BING MAPS

EXPLORATION PLAN

U-Haul 724081, Domingo Baca Rd NE & Jefferson St NE ■ Albuquerque, NM

February 6, 2023 ■ Terracon Project No. 66215225 Revised



SITE RECONNAISSANCE PHOTOS

U-Haul 724081, Domingo Baca Rd NE & Jefferson St NE ■ Albuquerque, NM

February 6, 2023 ■ Terracon Project No. 66215225 Revised



Photos 1-4 (clockwise): Boring Locations B-01, B-02, B-06, and B-05



SITE RECONNAISSANCE PHOTOS

U-Haul 724081, Domingo Baca Rd NE & Jefferson St NE ■ Albuquerque, NM

February 6, 2023 ■ Terracon Project No. 66215225 Revised



Photos 5-8 (clockwise): Boring Locations B-09, B-11, B-10, and B-08



SITE RECONNAISSANCE PHOTOS

U-Haul 724081, Domingo Baca Rd NE & Jefferson St NE ■ Albuquerque, NM

February 6, 2023 ■ Terracon Project No. 66215225 Revised

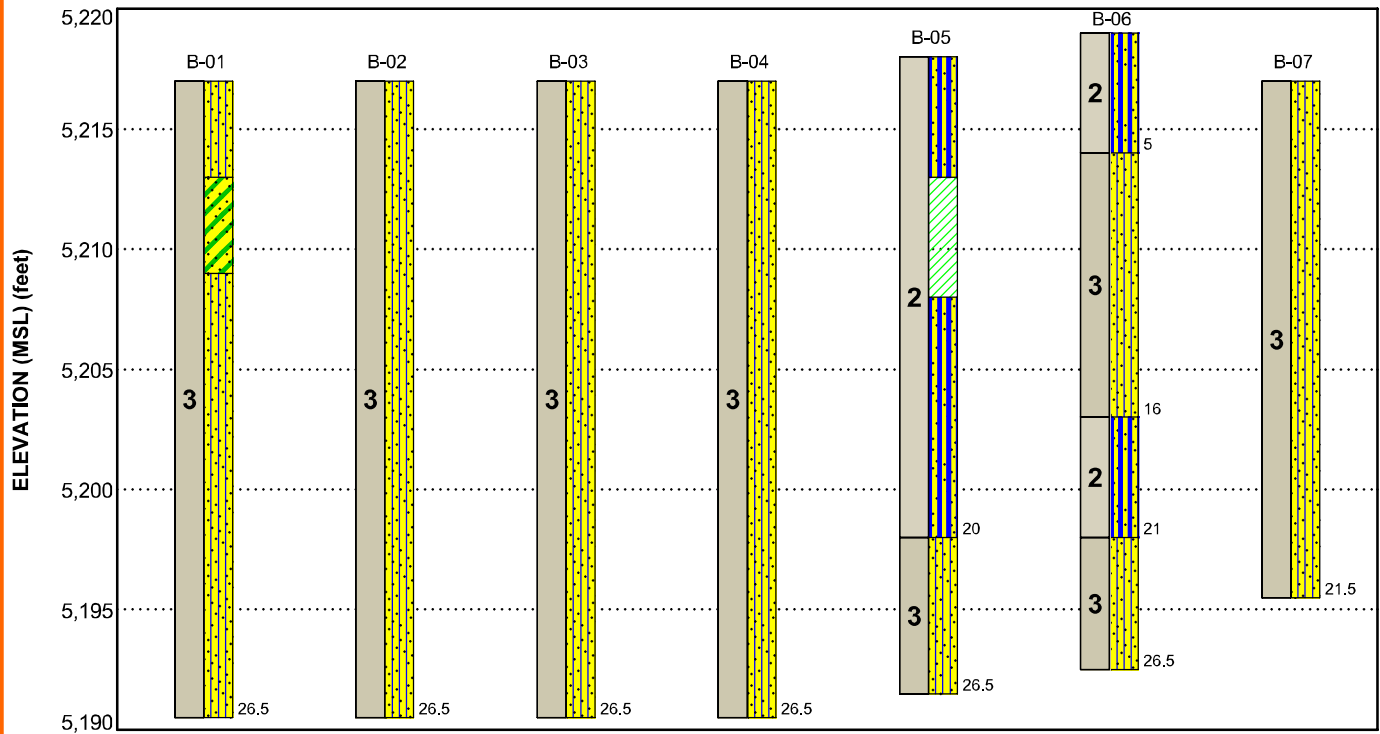


Photos 9-11 (clockwise): Boring Locations B-07, P-02, and P-01



EXPLORATION RESULTS

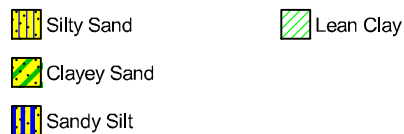
U-Haul Facility 724081 **Albuquerque, New Mexico**
Terracon Project No. 66215225



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

| Model Layer | Layer Name | General Description |
|-------------|---|---|
| 1 | Asphalt Concrete | Asphalt Concrete, up to 1 inch in thickness. |
| 2 | Medium Stiff to Very Stiff Fine Grained Soils | Clay and silt soils with variable amounts of sand and gravel with medium stiff to very stiff consistency. |
| 3 | Loose to Medium Dense Coarse Grained Soils | Sand soils with variable amounts of clay, silt, and gravel. Loose to medium dense relative density. |

LEGEND

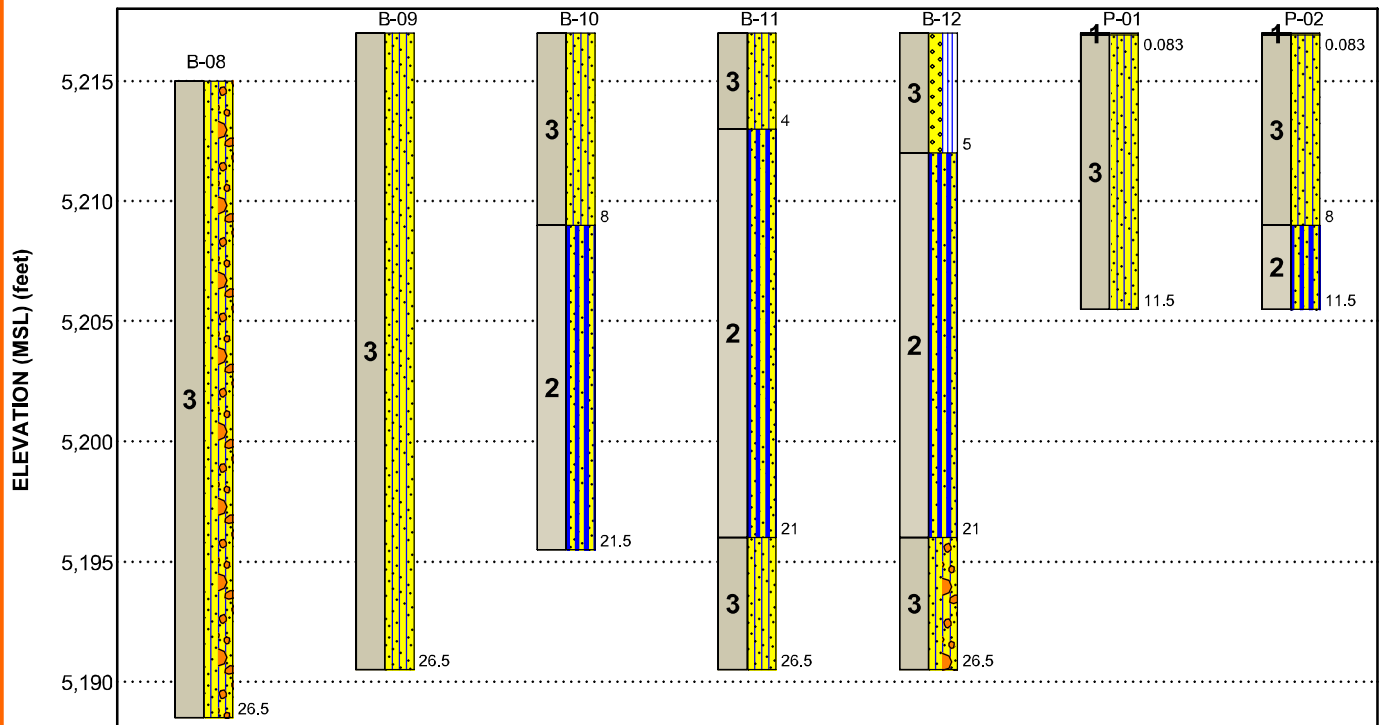


NOTES:

Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.

Numbers adjacent to soil column indicate depth below ground surface.



U-Haul Facility 724081 **Albuquerque, New Mexico**
Terracon Project No. 66215225






This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

| Model Layer | Layer Name | General Description |
|-------------|---|---|
| 1 | Asphalt Concrete | Asphalt Concrete, up to 1 inch in thickness. |
| 2 | Medium Stiff to Very Stiff Fine Grained Soils | Clay and silt soils with variable amounts of sand and gravel with medium stiff to very stiff consistency. |
| 3 | Loose to Medium Dense Coarse Grained Soils | Sand soils with variable amounts of clay, silt, and gravel. Loose to medium dense relative density. |

LEGEND

 Silty Sand with Gravel
  Well-graded Sand with Silt

 Silty Sand
  Asphalt Concrete

 Sandy Silt

NOTES:

Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.

Numbers adjacent to soil column indicate depth below ground surface.

BORING LOG NO. B-01

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PROJECT: U-Haul Facility 724081

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

| MODEL LAYER | GRAPHIC LOG | LOCATION See Exploration Plan Latitude: 35.1765° Longitude: -106.5919° Approximate Surface Elev.: 5217 (Ft.) +/- DEPTH ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | SWELL (%) | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES |
|-------------|-------------|--|-------------|-----------------------------|-------------|-----------------------|-----------|----------------------|--------------------------|---------------------------------|---------------|
| | | SILTY SAND (SM) , trace gravel and cobble, light brown, moist, loose | | | | | | | | | |
| | | 4.0 5213+/- | | | | 2-4-3 N=7 | | 3.2 | | | |
| | | CLAYEY SAND (SC) , light brown, moist, loose | 5 | | | | | | | | |
| | | | | | | 9-8 | | 5.2 | 92 | 25-14-11 | 33 |
| | | 8.0 5209+/- | | | | | | | | | |
| | | SILTY SAND (SM) , trace to with gravel, trace cobble, light brown, moist, medium dense | 10 | | | | | | | | |
| | | | | | | 4-7-11 N=18 | | 5.3 | | | |
| | | | 15 | | | | | | | | |
| | | | | | | 4-7-4 N=11 | | 5.2 | | | |
| | | | 20 | | | | | | | | |
| | | | | | | 4-7-6 N=13 | | 4.1 | | | |
| | | | 25 | | | | | | | | |
| | | | | | | 6-5-6 N=11 | | 2.0 | | | |
| | | 26.5 5190.5+/- | | | | | | | | | |
| | | Boring Terminated at 26.5 Feet | | | | | | | | | |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations measured in the field

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

Boring Started: 11-19-2021

Drill Rig: CME 55

Project No.: 66215225

Boring Completed: 11-19-2021

Driller: Terracon ABQ

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 66215225 U-HAUL FACILITY, .GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

BORING LOG NO. B-02

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PROJECT: U-Haul Facility 724081

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

| MODEL LAYER | GRAPHIC LOG | LOCATION See Exploration Plan Latitude: 35.1764° Longitude: -106.5911° Approximate Surface Elev.: 5217 (Ft.) +/- DEPTH ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | SWELL (%) | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES |
|-------------|-------------|---|-------------|--------------------------|-------------|--------------------|-----------|-------------------|-----------------------|------------------------------|---------------|
| | | SILTY SAND (SM) , trace to with gravel, trace cobble, light brown, moist, loose to medium dense | | | | | | | | | |
| | | | 5 | | | 10-12 | | 3.9 | 102 | NP | 50 |
| | | | | | | 2-2-2 N=4 | | 2.5 | | | |
| | | | 10 | | | 6-7-5 N=12 | | 5.0 | | | |
| | | | 15 | | | 6-8-6 N=14 | | 3.0 | | | |
| | | | 20 | | | 10-15-10 N=25 | | 2.6 | | | |
| | | | 25 | | | 6-11-7 N=18 | | | | | |
| | | 26.5 5190.5+/- Boring Terminated at 26.5 Feet | | | | | | | | | |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations measured in the field

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

Boring Started: 11-19-2021

Drill Rig: CME 55

Project No.: 66215225

Boring Completed: 11-19-2021

Driller: Terracon ABQ

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT: GEO SMART LOG-NO WELL 66215225 U-HAUL FACILITY, .GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

BORING LOG NO. B-03

Page 1 of 1

PROJECT: U-Haul Facility 724081

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

| MODEL LAYER | GRAPHIC LOG | LOCATION See Exploration Plan Latitude: 35.1762° Longitude: -106.5924° Approximate Surface Elev.: 5217 (Ft.) +/- DEPTH ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | SWELL (%) | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES |
|-------------|-------------|--|-------------|-----------------------------|-------------|-----------------------|-----------|----------------------|--------------------------|---------------------------------|---------------|
| | | SILTY SAND (SM) , trace to with gravel, brown, moist, loose to medium dense | | | | | | | | | |
| | | | 5 | | | 11-10 | | 3.9 | 105 | | |
| | | | | | | 5-3-3 N=6 | | 7.1 | | NP | 40 |
| | | | 10 | | | 8-9-9 N=18 | | 3.6 | | | |
| | | | 15 | | | 7-10-8 N=18 | | 2.1 | | | |
| | | | 20 | | | 3-5-5 N=10 | | 4.2 | | | |
| | | | 25 | | | 5-7-4 N=11 | | 3.3 | | | |
| | | 26.5 Boring Terminated at 26.5 Feet 5190.5+/- | | | | | | | | | |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a
description of field and laboratory procedures
used and additional data (If any).

See [Supporting Information](#) for explanation of
symbols and abbreviations.

Elevations measured in the field

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

Boring Started: 11-19-2021

Drill Rig: CME 55

Project No.: 66215225

Boring Completed: 11-19-2021

Driller: Terracon ABQ

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT: GEO SMART LOG-NO WELL_66215225 U-HAUL FACILITY.gpj TERRACON_DATATEMPLATE.GDT 2/1/22

BORING LOG NO. B-04

Page 1 of 1

PROJECT: U-Haul Facility 724081

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

| MODEL LAYER | GRAPHIC LOG | LOCATION See Exploration Plan Latitude: 35.1761° Longitude: -106.5916° Approximate Surface Elev.: 5217 (Ft.) +/- DEPTH ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | SWELL (%) | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES |
|-------------|-------------|---|-------------|--------------------------|-------------|--------------------|----------------|-------------------|-----------------------|------------------------------|---------------|
| | | SILTY SAND (SM) , trace to with gravel, brown, moist, loose to medium dense | | | | | | | | | |
| | | | 5 | | | 5-9 | -0.34 @ 500psf | 1.9 | 111 | | |
| | | | | | | 5-4-7 N=11 | | 5.0 | | NP | 27 |
| | | | 10 | | | 3-6-15 N=21 | | 3.9 | | | |
| | | | 15 | | | 3-3-4 N=7 | | 5.2 | | | |
| | | | 20 | | | 3-4-5 N=9 | | 4.1 | | | |
| | | | 25 | | | 9-9-6 N=15 | | 3.0 | | | |
| | | 26.5 5190.5 +/- Boring Terminated at 26.5 Feet | | | | | | | | | |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations measured in the field

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

Boring Started: 11-19-2021

Drill Rig: CME 55

Project No.: 66215225

Boring Completed: 11-19-2021

Driller: Terracon ABQ

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT: GEO SMART LOG-NO WELL 66215225 U-HAUL FACILITY, .GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

BORING LOG NO. B-05

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PROJECT: U-Haul Facility 724081

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

| MODEL LAYER | GRAPHIC LOG | LOCATION See Exploration Plan Latitude: 35.1758° Longitude: -106.5920° Approximate Surface Elev.: 5218 (Ft.) +/- | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | SWELL (%) | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES |
|-------------|-------------|--|-------------|--------------------------|-------------|--------------------|----------------|-------------------|-----------------------|------------------------------|---------------|
| | | DEPTH ELEVATION (Ft.) | | | | | | | | | |
| | | SANDY SILT (ML) , trace gravel, brown, moist, stiff | | | | | | | | | |
| | | 5.0 5213+/- | 5 | | | 4-7 | -0.89 @ 500psf | 5.0 | 86 | NP | 77 |
| | | LEAN CLAY (CL) , brown, moist, stiff | | | | | | | | | |
| | | 10.0 5208+/- | 10 | | | 4-5-5 N=10 | | 8.3 | | | |
| | | SANDY SILT (ML) , trace gravel, brown, moist, soft to stiff | | | | | | | | | |
| | | 20.0 5198+/- | 20 | | | 2-2-2 N=4 | | 8.3 | | | |
| | | SILTY SAND (SM) , with gravel, brown, moist, medium dense | | | | | | | | | |
| | | 26.5 5191.5+/- | 25 | | | 3-3-4 N=7 | | 4.8 | | | |
| | | Boring Terminated at 26.5 Feet | | | | 5-7-6 N=13 | | 5.6 | | | |
| | | | | | | 4-7-5 N=12 | | | | | |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations measured in the field

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

Boring Started: 11-19-2021

Drill Rig: CME 55

Project No.: 66215225

Boring Completed: 11-19-2021

Driller: Terracon ABQ

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 66215225 U-HAUL FACILITY, .GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

BORING LOG NO. B-06

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PROJECT: U-Haul Facility 724081

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

| MODEL LAYER | GRAPHIC LOG | LOCATION See Exploration Plan Latitude: 35.1758° Longitude: -106.5911° Approximate Surface Elev.: 5219 (Ft.) +/- DEPTH ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | SWELL (%) | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES |
|-------------|-------------|---|-------------|--------------------------|-------------|--------------------|-----------|-------------------|-----------------------|------------------------------|---------------|
| 2 | | SANDY SILT (ML) , brown, moist, stiff 5.0 5214+/- | 5 | | | 4-6-5 N=11 | | 3.4 | | | |
| 3 | | SILTY SAND (SM) , trace gravel, brown, moist, medium dense 16.0 5203+/- | 10 | | | 10-14 | | 3.1 | 107 | NP | 48 |
| 2 | | SANDY SILT (ML) , trace gravel, brown, moist, stiff 21.0 5198+/- | 15 | | | 4-4-6 N=10 | | 2.6 | | | |
| 3 | | SILTY SAND (SM) , with gravel, brown, moist, medium dense 26.5 5192.5+/- | 20 | | | 5-5-5 N=10 | | 3.1 | | | |
| | | Boring Terminated at 26.5 Feet | 25 | | | 5-6-7 N=13 | | 3.7 | | | |
| | | | | | | 5-7-10 N=17 | | | | | |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations measured in the field

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

Boring Started: 11-19-2021

Drill Rig: CME 55

Project No.: 66215225

Boring Completed: 11-19-2021

Driller: Terracon ABQ

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 66215225 U-HAUL FACILITY, .GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

BORING LOG NO. B-07

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PROJECT: U-Haul Facility 724081

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

| MODEL LAYER | GRAPHIC LOG | LOCATION See Exploration Plan Latitude: 35.1754° Longitude: -106.5922° Approximate Surface Elev.: 5217 (Ft.) +/- DEPTH ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | SWELL (%) | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES |
|-------------|-------------|---|-------------|--------------------------|-------------|--------------------|-----------|-------------------|-----------------------|------------------------------|---------------|
| 3 | | SILTY SAND (SM) , trace to with gravel, brown, loose to medium dense | | | | | | | | | |
| | | | 5 | | | 12-16 | | 2.3 | 112 | NP | 28 |
| | | | | | | 4-6-3 N=9 | | 6.8 | | | |
| | | | 10 | | | 8-11-8 N=19 | | 2.1 | | | |
| | | | 15 | | | 3-5-5 N=10 | | 5.5 | | | |
| | | | 20 | | | 4-6-9 N=15 | | 3.3 | | | |
| | | 21.5 5195.5+/- Boring Terminated at 21.5 Feet | | | | | | | | | |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations measured in the field

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

Boring Started: 11-24-2021

Drill Rig: CME 55

Project No.: 66215225

Boring Completed: 11-24-2021

Driller: Terracon ABQ

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT: GEO SMART LOG-NO WELL_66215225 U-HAUL FACILITY_.GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

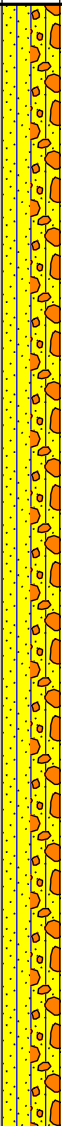
BORING LOG NO. B-08

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PROJECT: U-Haul Facility 724081

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

| MODEL LAYER | GRAPHIC LOG | LOCATION See Exploration Plan Latitude: 35.1753° Longitude: -106.5916° Approximate Surface Elev.: 5215 (Ft.) +/- DEPTH ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | SWELL (%) | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES |
|-------------|--|---|-------------|--------------------------|-------------|--------------------|-----------|-------------------|-----------------------|------------------------------|---------------|
| |  | SILTY SAND WITH GRAVEL (SM) , trace to with gravel, brown, moist, medium dense | | | | | | | | | |
| | | | 5 | | | 25-25 | | 1.6 | 120 | | |
| | | | | | | 8-12-16 N=28 | | 2.5 | | NP | 29 |
| | | | 10 | | | 13-8-6 N=14 | | 4.1 | | | |
| | | | 15 | | | 9-8-10 N=18 | | 3.6 | | | |
| | | | 20 | | | 10-10-12 N=22 | | 3.6 | | | |
| | | | 25 | | | 8-9-6 N=15 | | 1.7 | | | |
| | | 26.5 5188.5+/- Boring Terminated at 26.5 Feet | | | | | | | | | |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations measured in the field

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

Boring Started: 11-19-2021

Drill Rig: CME 55

Project No.: 66215225

Boring Completed: 11-19-2021

Driller: Terracon ABQ

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT: GEO SMART LOG-NO WELL 66215225 U-HAUL FACILITY, .GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

BORING LOG NO. B-09

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PROJECT: U-Haul Facility 724081

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

| MODEL LAYER | GRAPHIC LOG | LOCATION See Exploration Plan Latitude: 35.1754° Longitude: -106.5911° Approximate Surface Elev.: 5217 (Ft.) +/- DEPTH ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | SWELL (%) | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES |
|-------------|-------------|---|-------------|--------------------------|-------------|--------------------|-------------------|-------------------|-----------------------|------------------------------|---------------|
| | | SILTY SAND (SM) , trace to with gravel, brown, moist, loose to medium dense | | | | | | | | | |
| | | | 5 | | | 9-12-15 N=27 | | 2.1 | | NP | 30 |
| | | | | | | 8-8 | -1.50 @ 500psf | 4.8 | 102 | | |
| | | | 10 | | | 17-11-10 N=21 | | 4.5 | | | |
| | | | 15 | | | 8-8-7 N=15 | | 2.8 | | | |
| | | | 20 | | | 10-8-7 N=15 | | 2.2 | | | |
| | | | 25 | | | 5-8-10 N=18 | | | | | |
| | | 26.5 5190.5+/- Boring Terminated at 26.5 Feet | | | | | | | | | |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations measured in the field

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

Boring Started: 11-19-2021

Drill Rig: CME 55

Project No.: 66215225

Boring Completed: 11-19-2021

Driller: Terracon ABQ

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT: GEO SMART LOG-NO WELL_66215225 U-HAUL FACILITY_.GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

BORING LOG NO. B-10

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PROJECT: U-Haul Facility 724081

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

| MODEL LAYER | GRAPHIC LOG | LOCATION See Exploration Plan Latitude: 35.1750° Longitude: -106.5922° Approximate Surface Elev.: 5217 (Ft.) +/- DEPTH ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | SWELL (%) | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES |
|-------------|-------------|--|-------------|--------------------------|-------------|--------------------|-------------------|-------------------|-----------------------|------------------------------|---------------|
| 3 | | SILTY SAND (SM) , trace to with gravel, brown, moist, medium dense | 8.0 | | | 10-8-5 N=13 | | 1.7 | | NP | 13 |
| | | | 5 | | | 6-11 | -3.61 @ 500psf | 5.6 | 92 | | |
| 2 | | SANDY SILT (ML) , trace to with gravel, brown, moist, stiff to very stiff | 21.5 | | | 3-7-8 N=15 | | 4.3 | | | |
| | | | 10 | | | 4-5-6 N=11 | | 4.0 | | | |
| | | | 15 | | | 7-8-11 N=19 | | 3.0 | | | |
| | | Boring Terminated at 21.5 Feet | 20 | | | | | | | | |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations measured in the field

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

Boring Started: 11-24-2021

Drill Rig: CME 55

Project No.: 66215225

Boring Completed: 11-24-2021

Driller: Terracon ABQ

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 66215225 U-HAUL FACILITY, .GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

BORING LOG NO. B-11

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PROJECT: U-Haul Facility 724081

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

| MODEL LAYER | GRAPHIC LOG | LOCATION See Exploration Plan Latitude: 35.1750° Longitude: -106.5916° Approximate Surface Elev.: 5217 (Ft.) +/- DEPTH ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | SWELL (%) | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES |
|-------------|-------------|---|-------------|--------------------------|-------------|--------------------|-------------------|-------------------|-----------------------|------------------------------|---------------|
| 3 | | SILTY SAND (SM) , light brown, medium dense | 4.0 | | | 4-6-7 N=13 | | | | | |
| 2 | | SANDY SILT (ML) , light brown, stiff to very stiff | 5 | | | 6-11 | -6.80 @ 500psf | 6.7 | 76 | NP | 59 |
| | | | 10 | | | 2-2-3 N=5 | | 11.9 | | | |
| | | | 15 | | | 2-3-2 N=5 | | 5.2 | | | |
| | | | 20 | | | 4-7-10 N=17 | | 6.3 | | | |
| 3 | | SILTY SAND (SM) , with gravel, light brown, medium dense | 21.0 | | | | | | | | |
| | | | 25 | | | 7-7-6 N=13 | | 2.6 | | | |
| | | Boring Terminated at 26.5 Feet | 26.5 | | | | | | | | |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations measured in the field

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

Boring Started: 11-24-2021

Drill Rig: CME 55

Project No.: 66215225

Boring Completed: 11-24-2021

Driller: Terracon ABQ

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 66215225 U-HAUL FACILITY, .GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

BORING LOG NO. B-12

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PROJECT: U-Haul Facility 724081

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

| MODEL LAYER | GRAPHIC LOG | LOCATION See Exploration Plan Latitude: 35.1750° Longitude: -106.5911° Approximate Surface Elev.: 5217 (Ft.) +/- DEPTH ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | SWELL (%) | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES |
|-------------|-------------|---|-------------|--------------------------|-------------|--------------------|-----------|-------------------|-----------------------|------------------------------|---------------|
| 3 | | WELL GRADED SAND WITH SILT (SW-SM) , light brown, dry, medium dense 5.0 5212+/- | 5 | | | 8-15 | | 1.0 | 111 | NP | 6 |
| 2 | | SANDY SILT (ML) , light brown, moist, medium stiff to stiff 21.0 5196+/- | 10 | | | 3-3-3 N=6 | | 5.3 | | | |
| | | | 15 | | | 3-2-3 N=5 | | 12.4 | | | |
| | | | 20 | | | 2-3-3 N=6 | | 6.9 | | | |
| 3 | | SILTY SAND WITH GRAVEL (SM) , with gravel, light brown, medium dense 26.5 5190.5+/- | 25 | | | 6-9-6 N=15 | | 5.5 | | | |
| | | | | | | 7-13-15 N=28 | | | | | |
| | | Boring Terminated at 26.5 Feet | | | | | | | | | |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations measured in the field

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

Boring Started: 11-24-2021

Drill Rig: CME 55

Project No.: 66215225

Boring Completed: 11-24-2021

Driller: Terracon ABQ

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT: GEO SMART LOG-NO WELL_66215225 U-HAUL FACILITY_.GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

BORING LOG NO. P-01

Page 1 of 1

PROJECT: U-Haul Facility 724081

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

| MODEL LAYER | GRAPHIC LOG | LOCATION See Exploration Plan Latitude: 35.1765° Longitude: -106.5929° Approximate Surface Elev.: 5217 (Ft.) +/- DEPTH ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | SWELL (%) | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES |
|-------------|-------------|--|-------------|-----------------------------|-------------|-----------------------|-----------|----------------------|--------------------------|---------------------------------|---------------|
| 1 | | 0.1 ASPHALT CONCRETE / 5217 +/- | | | | | | | | | |
| 3 | | SILTY SAND (SM) , brown with whitestreaks, loose to medium dense | | | | 7-10-10 N=20 | | 9.2 | | NP | 49 |
| | | | 5 | | | 4-8 | | 6.6 | 97 | | |
| | | | 10 | | | 4-4-4 N=8 | | 5.5 | | | |
| | | 11.5 Boring Terminated at 11.5 Feet 5205.5 +/- | | | | | | | | | |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations measured in the field

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

Boring Started: 11-24-2021

Drill Rig: CME 55

Project No.: 66215225

Boring Completed: 11-24-2021

Driller: Terracon ABQ

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT: GEO SMART LOG-NO WELL_66215225 U-HAUL FACILITY, .GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

BORING LOG NO. P-02

Page 1 of 1

PROJECT: U-Haul Facility 724081

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

| MODEL LAYER | GRAPHIC LOG | LOCATION See Exploration Plan Latitude: 35.1759° Longitude: -106.5930° Approximate Surface Elev.: 5217 (Ft.) +/- | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | FIELD TEST RESULTS | SWELL (%) | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES |
|-------------|-------------|--|-------------|--------------------------|-------------|--------------------|-----------|-------------------|-----------------------|------------------------------|---------------|
| | | DEPTH 0.1 ASPHALT CONCRETE / 5217+/- SILTY SAND (SM) , trace gravel, brown, loose to medium dense | | | | | | | | | |
| 3 | | | 5 | | | 6-27 | | 4.4 | 107 | NP | 39 |
| | | | | | | 4-4-4 N=8 | | 4.8 | | | |
| 2 | | 8.0 SANDY SILT (ML) , brown, very stiff / 5209+/- | 10 | | | 4-5-11 N=16 | | 4.1 | | | |
| | | 11.5 Boring Terminated at 11.5 Feet / 5205.5+/- | | | | | | | | | |

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations measured in the field

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

Boring Started: 11-24-2021

Drill Rig: CME 55

Project No.: 66215225

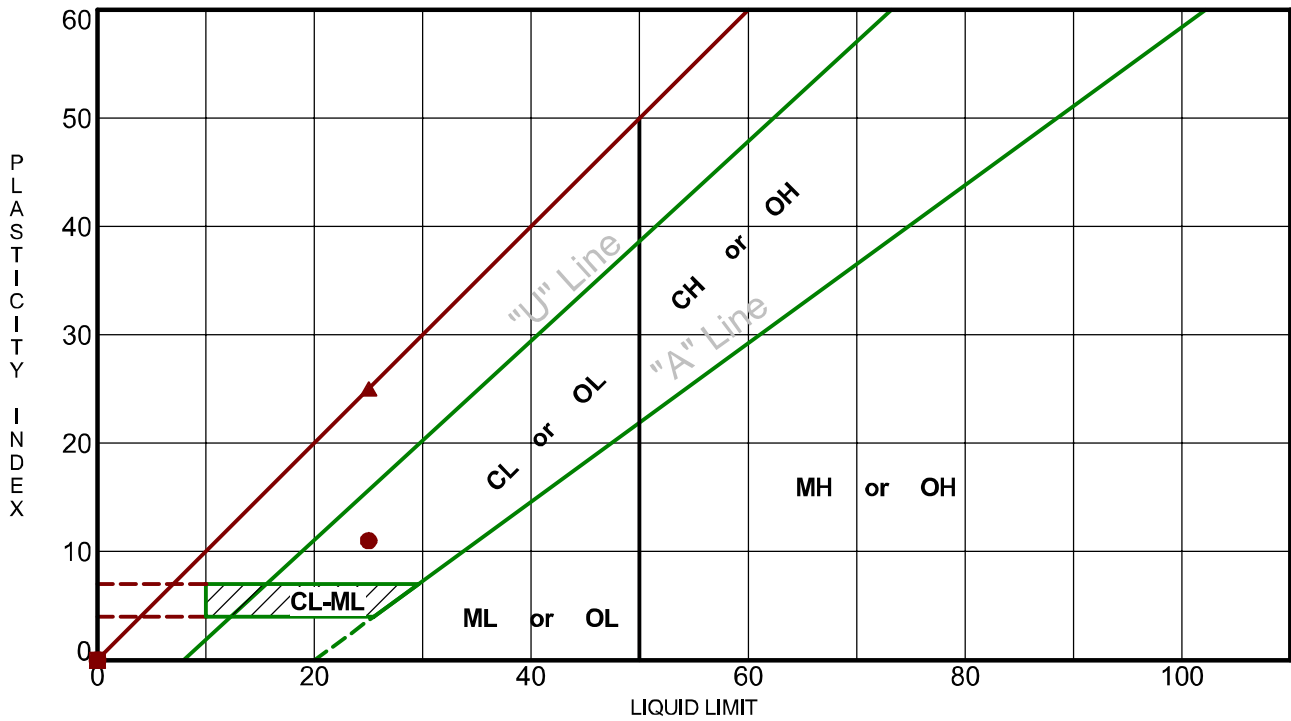
Boring Completed: 11-24-2021

Driller: Terracon ABQ

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 66215225 U-HAUL FACILITY, .GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

ATTERBERG LIMITS RESULTS

ASTM D4318



| Boring ID | Depth | LL | PL | PI | Fines | USCS | Description |
|-----------|-----------|----|----|----|-------|-------|----------------------------|
| ● B-01 | 5 - 6 | 25 | 14 | 11 | 32.7 | SC | CLAYEY SAND |
| ⊠ B-02 | 2.5 - 3.5 | NP | NP | NP | 49.7 | SM | SILTY SAND |
| ▲ B-03 | 5 - 6.5 | 25 | NP | 25 | 39.6 | SM | SILTY SAND |
| ★ B-04 | 5 - 6.5 | NP | NP | NP | 27.2 | SM | SILTY SAND with GRAVEL |
| ⊙ B-05 | 2.5 - 3.5 | NP | NP | NP | 77.1 | ML | SILT with SAND |
| ⊕ B-06 | 5 - 6 | NP | NP | NP | 47.7 | SM | SILTY SAND |
| ○ B-07 | 2.5 - 3.5 | NP | NP | NP | 27.9 | SM | SILTY SAND |
| △ B-08 | 5 - 6.5 | NP | NP | NP | 28.6 | SM | SILTY SAND with GRAVEL |
| ⊗ B-09 | 2.5 - 4 | NP | NP | NP | 30.3 | SM | SILTY SAND |
| ⊕ B-10 | 2.5 - 4 | NP | NP | NP | 13.2 | SM | SILTY SAND |
| □ B-11 | 5 - 6 | NP | NP | NP | 59.0 | ML | SANDY SILT |
| ⊕ B-12 | 2.5 - 3.5 | NP | NP | NP | 5.6 | SW-SM | WELL-GRADED SAND with SILT |
| ⊕ P-01 | 2.5 - 4 | NP | NP | NP | 49.1 | SM | SILTY SAND |
| ★ P-02 | 2.5 - 3.5 | NP | NP | NP | 39.3 | SM | SILTY SAND |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

PROJECT: U-Haul Facility 724081

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

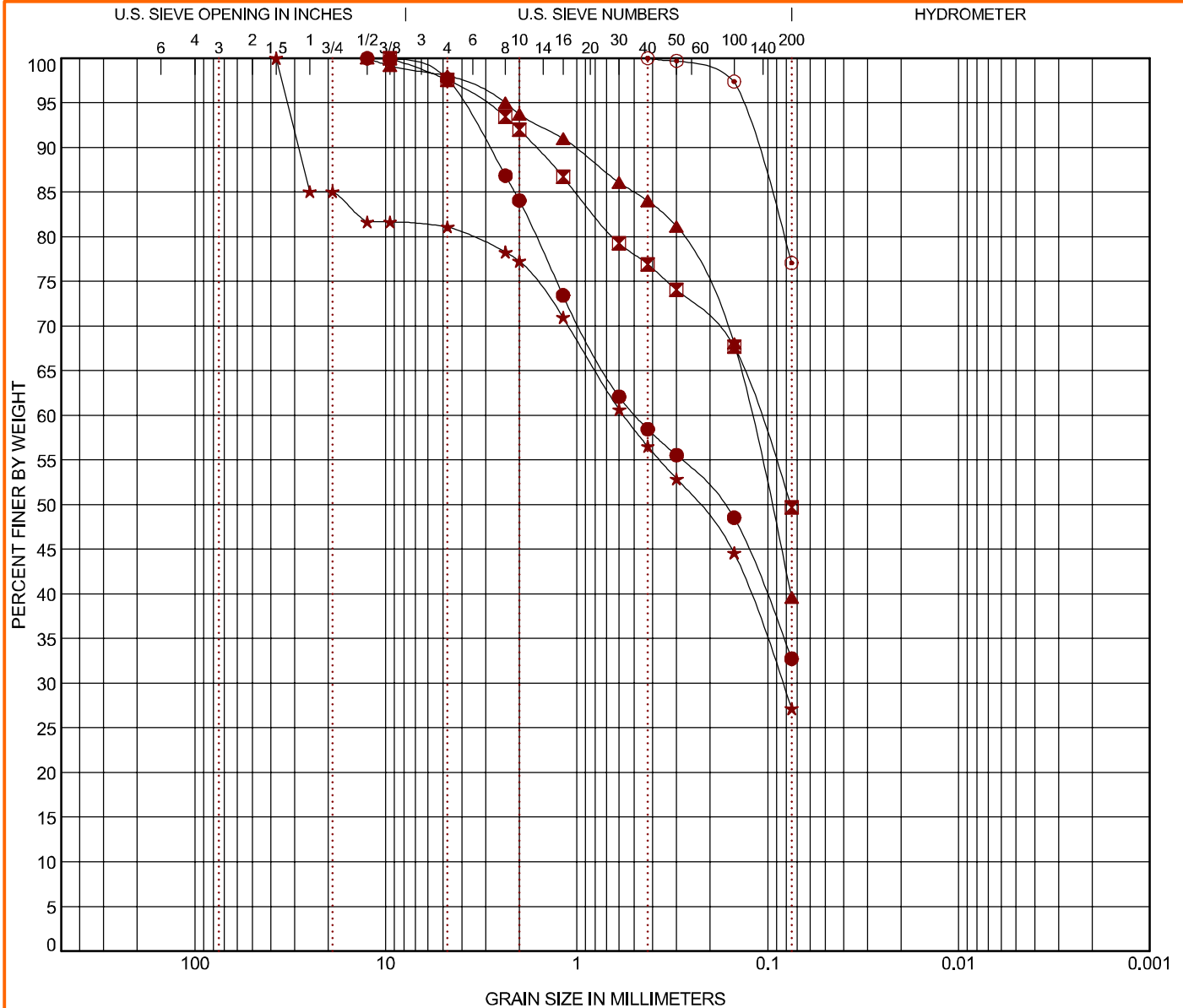
Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

PROJECT NUMBER: 66215225

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



| COBBLES | GRAVEL | | SAND | | | SILT OR CLAY |
|---------|--------|------|--------|--------|------|--------------|
| | coarse | fine | coarse | medium | fine | |

| Boring ID | Depth | USCS Classification | | | | WC (%) | LL | PL | PI | Cc | Cu |
|-----------|-----------|-----------------------------|-----------------|-----------------|-----------------|----------|---------|-------|-------|--------|-------|
| ● B-01 | 5 - 6 | CLAYEY SAND (SC) | | | | 5.2 | 25 | 14 | 11 | | |
| ⊠ B-02 | 2.5 - 3.5 | SILTY SAND (SM) | | | | 3.9 | NP | NP | NP | | |
| ▲ B-03 | 5 - 6.5 | SILTY SAND (SM) | | | | 7.1 | 25 | NP | 25 | | |
| ★ B-04 | 5 - 6.5 | SILTY SAND with GRAVEL (SM) | | | | 5.0 | NP | NP | NP | | |
| ⊙ B-05 | 2.5 - 3.5 | SILT with SAND (ML) | | | | 5.0 | NP | NP | NP | | |
| Boring ID | Depth | D ₁₀₀ | D ₆₀ | D ₃₀ | D ₁₀ | %Cobbles | %Gravel | %Sand | %Silt | %Fines | %Clay |
| ● B-01 | 5 - 6 | 12.5 | 0.492 | | | 0.0 | 2.3 | 64.9 | | 32.7 | |
| ⊠ B-02 | 2.5 - 3.5 | 9.5 | 0.112 | | | 0.0 | 2.4 | 47.9 | | 49.7 | |
| ▲ B-03 | 5 - 6.5 | 12.5 | 0.123 | | | 0.0 | 2.0 | 58.4 | | 39.6 | |
| ★ B-04 | 5 - 6.5 | 37.5 | 0.568 | 0.084 | | 0.0 | 18.9 | 54.0 | | 27.2 | |
| ⊙ B-05 | 2.5 - 3.5 | 0.425 | | | | 0.0 | 0.0 | 22.9 | | 77.1 | |

PROJECT: U-Haul Facility 724081

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

PROJECT NUMBER: 66215225

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

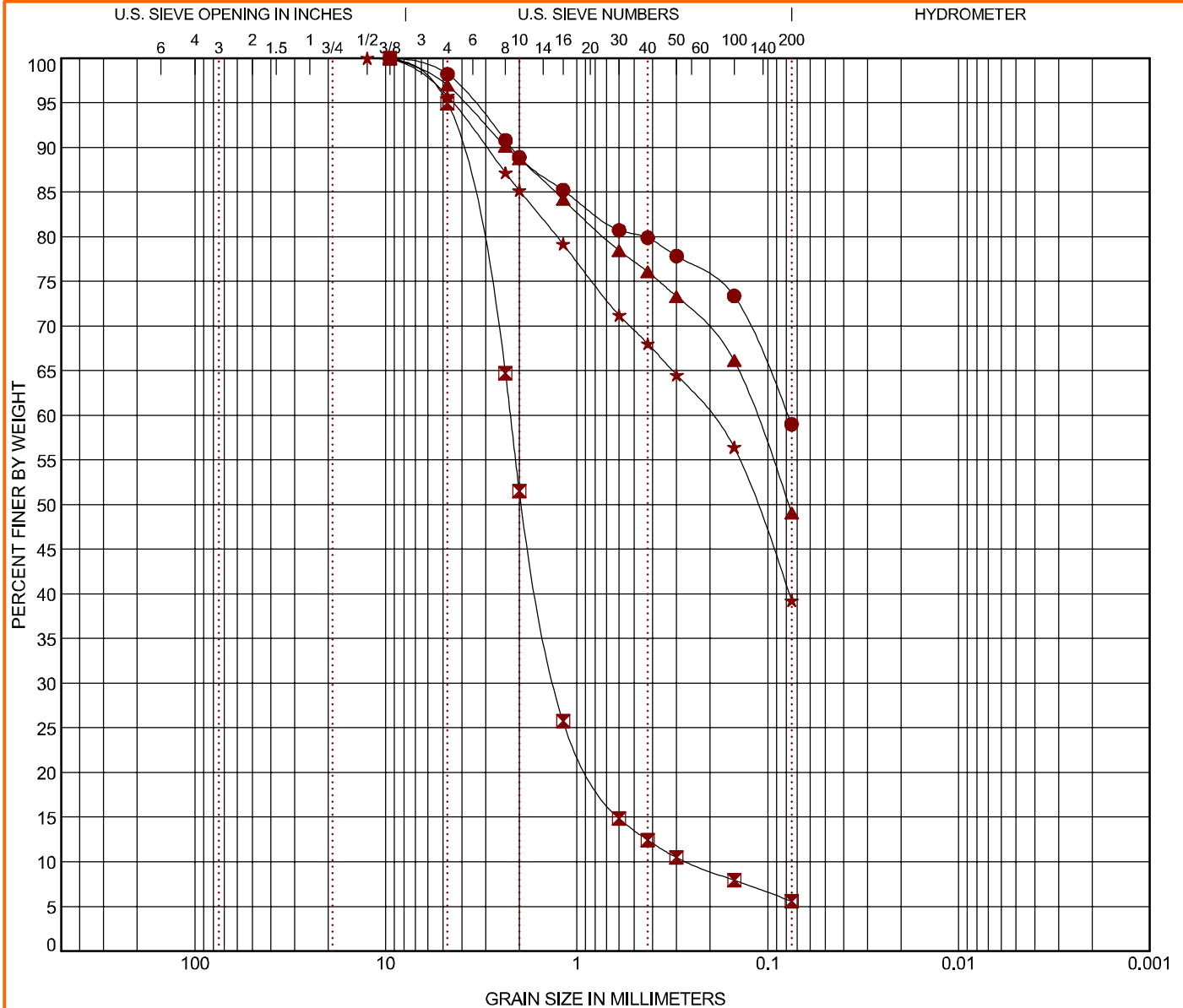
LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 66215225 U-HAUL FACILITY, GPJ TERRACON_DATATEMPLATE.GDT 1/12/22

ASTM D422 / ASTM C136

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 66215225 U-HAUL FACILITY, .GPJ TERRACON_DATA\TEMPLATE.GDT 1/12/22

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



| COBBLES | GRAVEL | | SAND | | | SILT OR CLAY |
|---------|--------|------|--------|--------|------|--------------|
| | coarse | fine | coarse | medium | fine | |

| Boring ID | Depth | USCS Classification | WC (%) | LL | PL | PI | Cc | Cu |
|-----------|-----------|------------------------------------|--------|----|----|----|------|------|
| ● B-11 | 5 - 6 | SANDY SILT (ML) | 6.7 | NP | NP | NP | | |
| ■ B-12 | 2.5 - 3.5 | WELL-GRADED SAND with SILT (SW-SM) | 1.0 | NP | NP | NP | 2.82 | 8.41 |
| ▲ P-01 | 2.5 - 4 | SILTY SAND (SM) | 9.2 | NP | NP | NP | | |
| ★ P-02 | 2.5 - 3.5 | SILTY SAND (SM) | 4.4 | NP | NP | NP | | |

| Boring ID | Depth | D ₁₀₀ | D ₆₀ | D ₃₀ | D ₁₀ | %Cobbles | %Gravel | %Sand | %Silt | %Fines | %Clay |
|-----------|-----------|------------------|-----------------|-----------------|-----------------|----------|---------|-------|-------|--------|-------|
| ● B-11 | 5 - 6 | 9.5 | 0.079 | | | 0.0 | 1.8 | 39.2 | | 59.0 | |
| ■ B-12 | 2.5 - 3.5 | 9.5 | 2.224 | 1.287 | 0.265 | 0.0 | 5.0 | 89.4 | | 5.6 | |
| ▲ P-01 | 2.5 - 4 | 9.5 | 0.117 | | | 0.0 | 3.0 | 47.9 | | 49.1 | |
| ★ P-02 | 2.5 - 3.5 | 12.5 | 0.204 | | | 0.0 | 4.2 | 56.5 | | 39.3 | |

PROJECT: U-Haul Facility 724081

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico

Terracon
6805 Academy Pkwy West NE
Albuquerque, NM

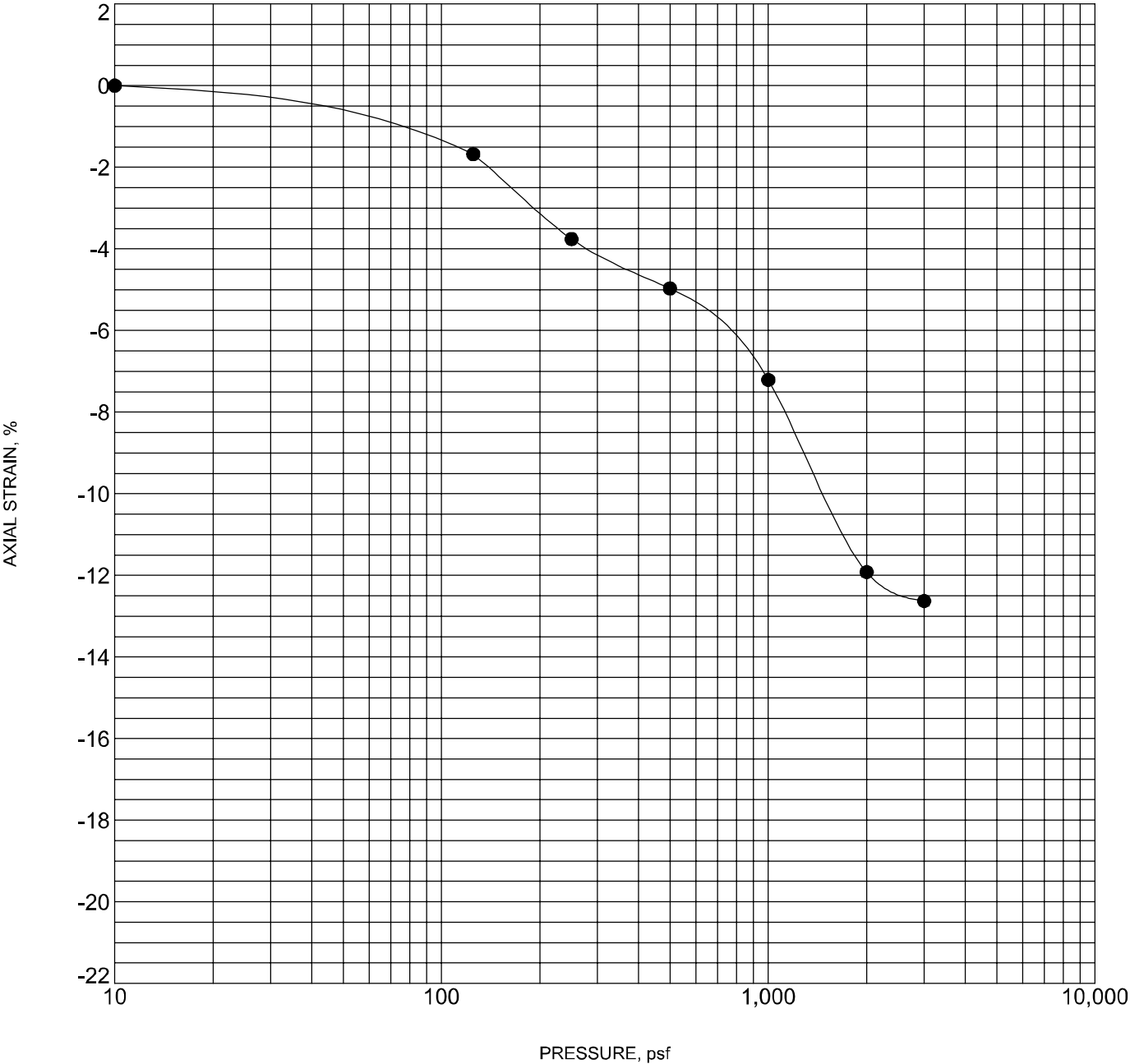
PROJECT NUMBER: 66215225

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 86215225 U-HAUL FACILITY, GPJ TERRACON_DATATEMPLATE.GDT 1/12/22

SWELL CONSOLIDATION TEST
ASTM D4546

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS 66215225 U-HAUL FACILITY, GPJ TERRACON_DATATEMPLATE.GDT 2/1/22



| Specimen Identification | | | Classification | γ_d , pcf | WC, % |
|-------------------------|------|----------|-----------------|------------------|-------|
| ● | B-01 | 5 - 6 ft | CLAYEY SAND(SC) | 92 | 5.2 |

NOTES: Sample not inundated with water.

PROJECT: U-Haul Facility 724081

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico



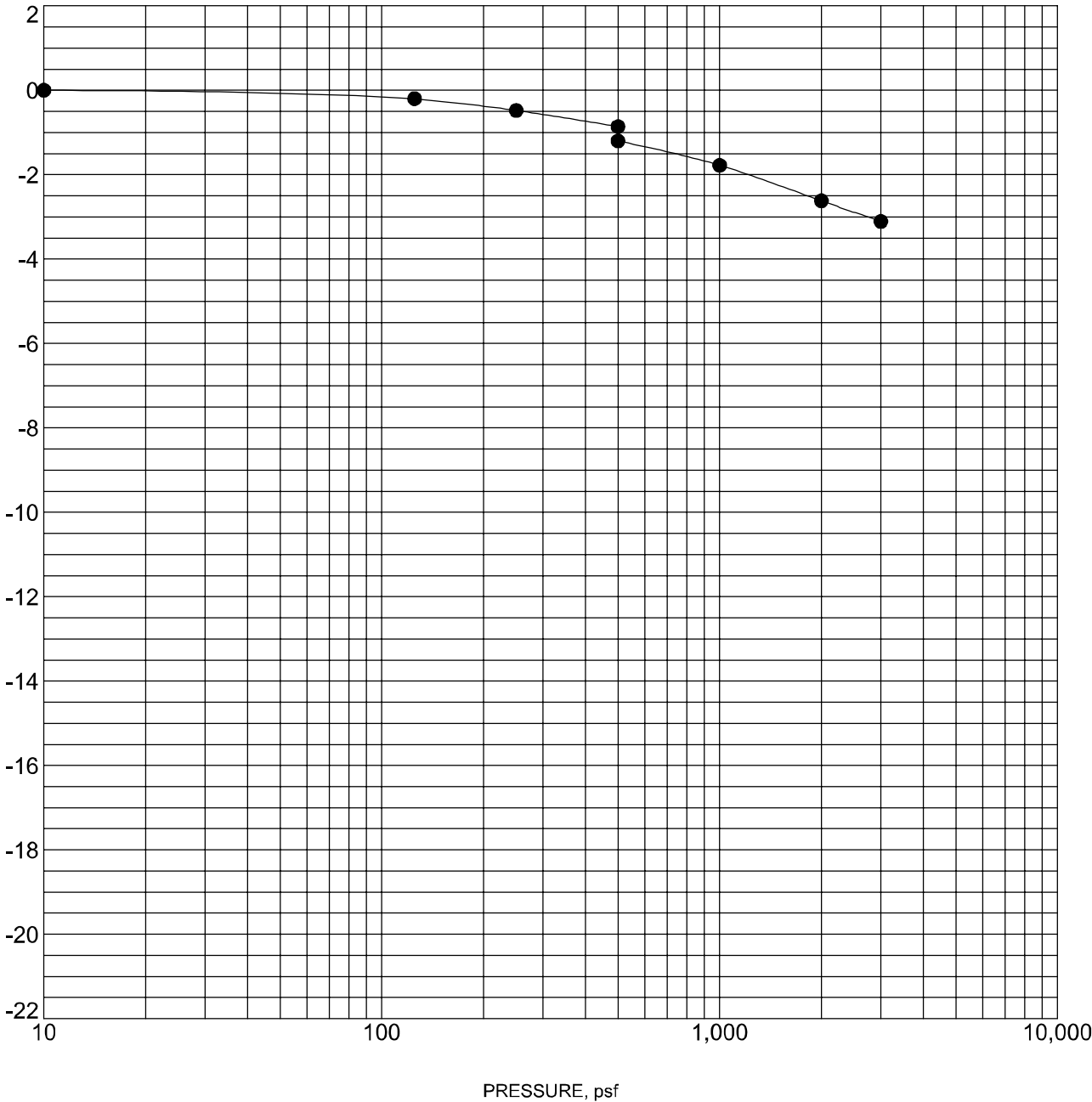
PROJECT NUMBER: 66215225

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SWELL CONSOLIDATION TEST
ASTM D4546

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS 66215225 U-HAUL FACILITY, GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

AXIAL STRAIN, %



| Specimen Identification | | | Classification | γ_d , pcf | WC, % |
|-------------------------|------|--------------|----------------|------------------|-------|
| ● | B-04 | 2.5 - 3.5 ft | SILTY SAND(SM) | 111 | 1.9 |

NOTES: Sample inundated with water at 500 pounds per square foot (psf).

PROJECT: U-Haul Facility 724081

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico



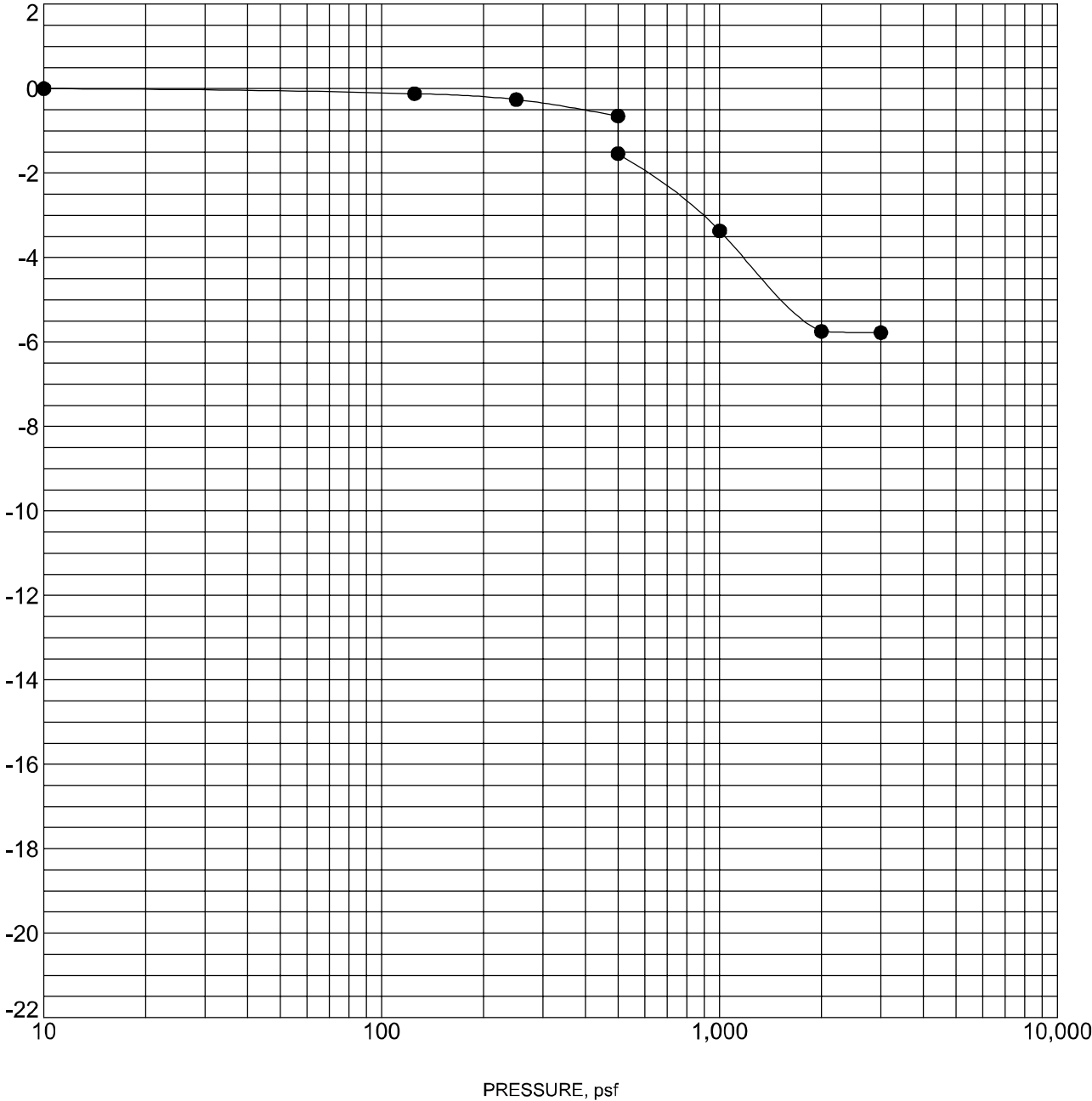
PROJECT NUMBER: 66215225

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SWELL CONSOLIDATION TEST
ASTM D4546

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS 66215225 U-HAUL FACILITY, GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

AXIAL STRAIN, %



| Specimen Identification | | | Classification | γ_d , pcf | WC, % |
|-------------------------|------|--------------|--------------------|------------------|-------|
| ● | B-05 | 2.5 - 3.5 ft | SILT with SAND(ML) | 86 | 5.0 |

NOTES: Sample inundated with water at 500 pounds per square foot (psf).

PROJECT: U-Haul Facility 724081

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico



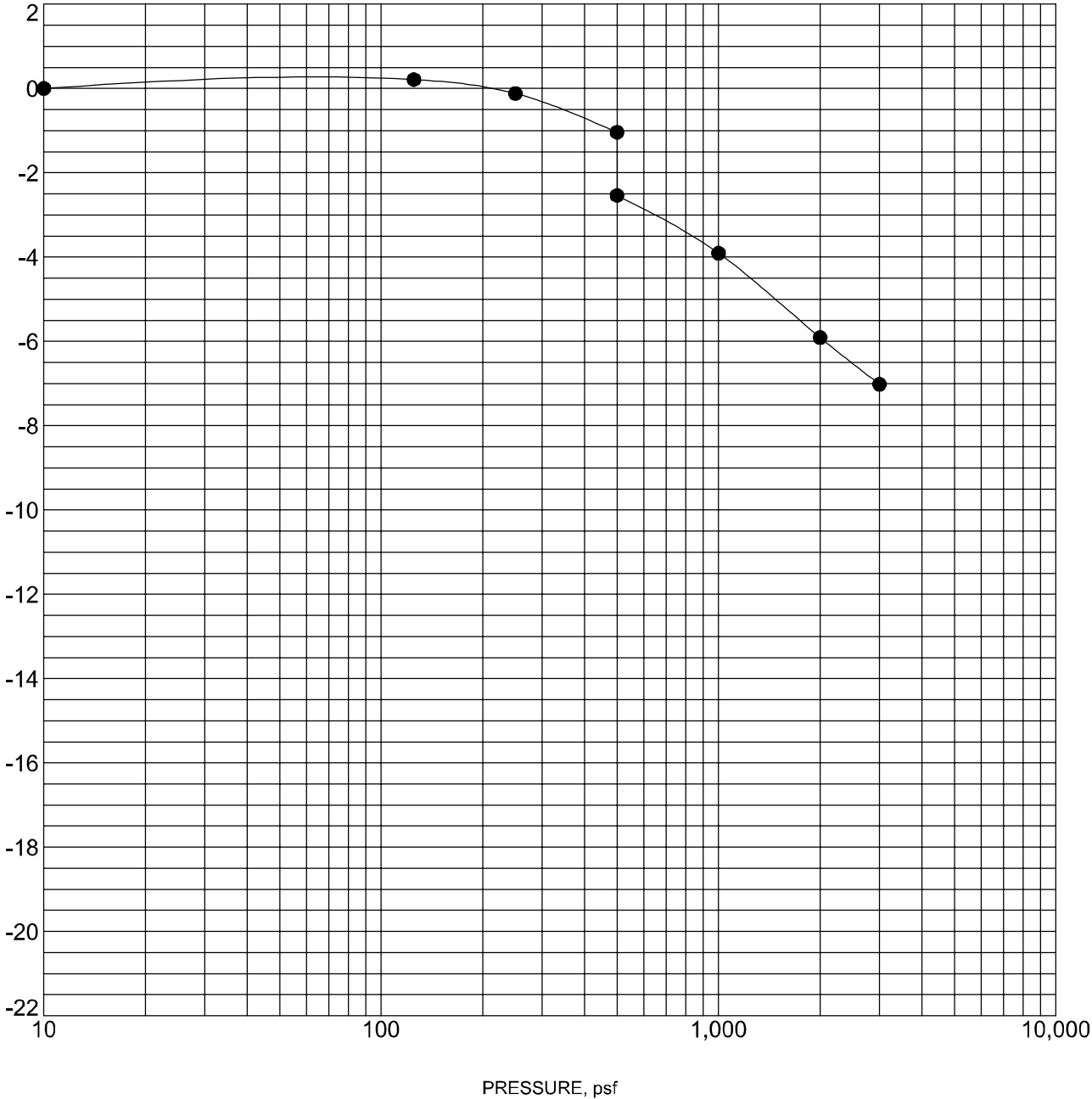
PROJECT NUMBER: 66215225

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SWELL CONSOLIDATION TEST
ASTM D4546

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS 66215225 U-HAUL FACILITY, GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

AXIAL STRAIN, %



| Specimen Identification | | | Classification | γ_d , pcf | WC, % |
|-------------------------|------|----------|----------------|------------------|-------|
| ● | B-09 | 5 - 6 ft | SILTY SAND(SM) | 102 | 4.8 |

NOTES: Sample inundated with water at 500 pounds per square foot (psf).

PROJECT: U-Haul Facility 724081

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico



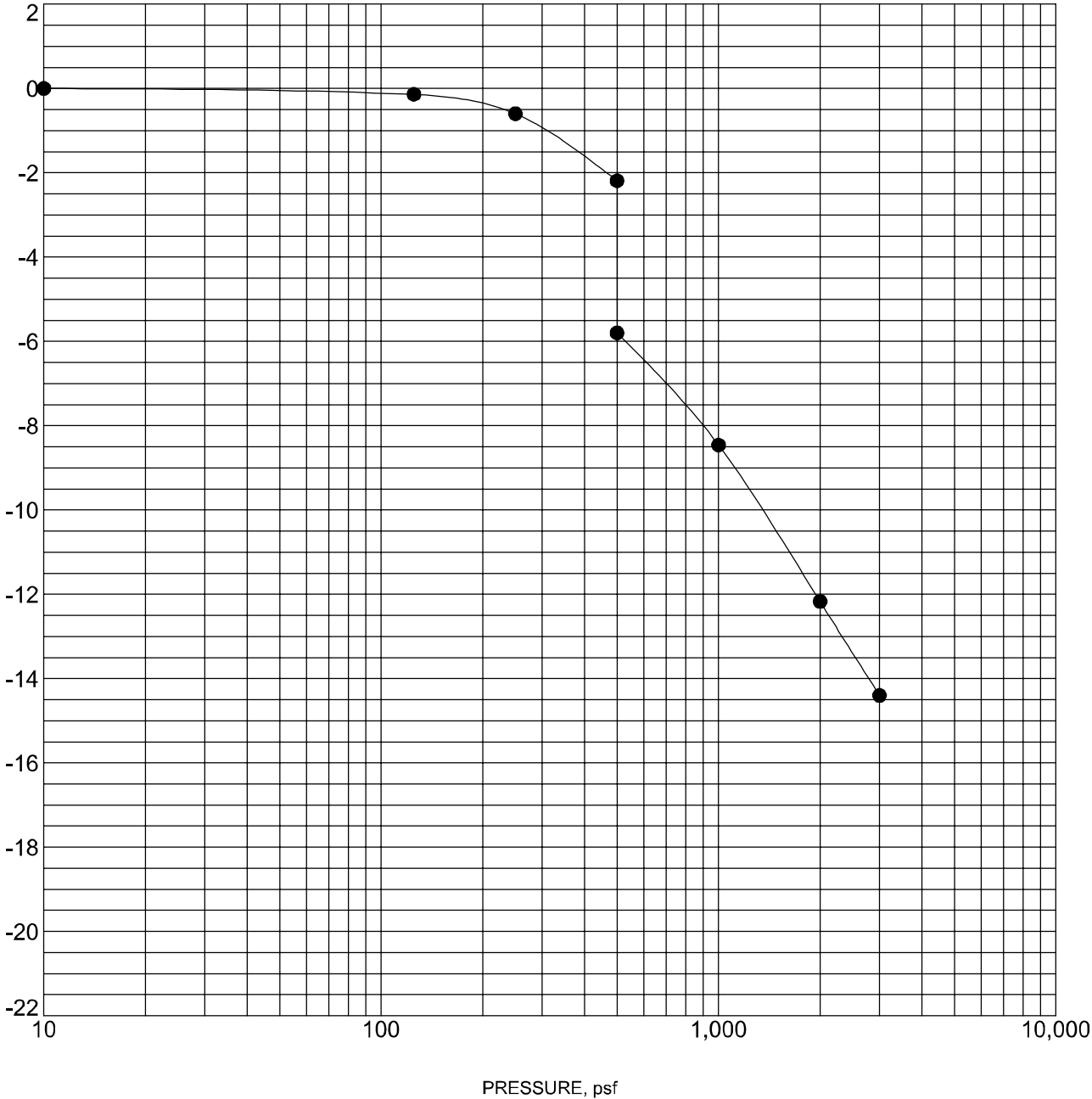
PROJECT NUMBER: 66215225

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SWELL CONSOLIDATION TEST
ASTM D4546

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS 66215225 U-HAUL FACILITY, GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

AXIAL STRAIN, %



| Specimen Identification | | | Classification | γ_d , pcf | WC, % |
|-------------------------|------|----------|----------------|------------------|-------|
| ● | B-10 | 5 - 6 ft | SILTY SAND(SM) | 102 | 4.8 |

NOTES: Sample inundated with water at 500 pounds per square foot (psf).

PROJECT: U-Haul Facility 724081

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico



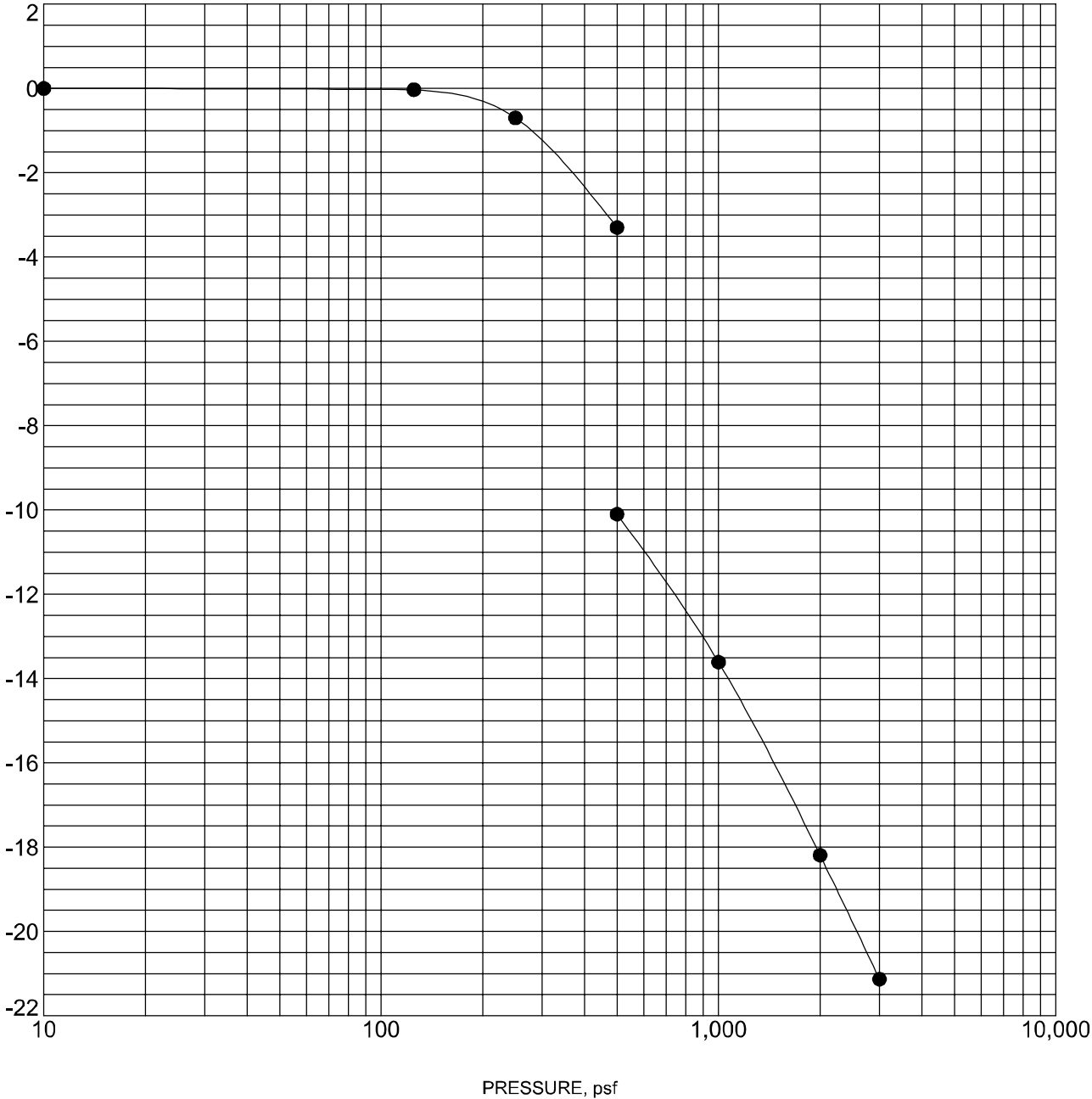
PROJECT NUMBER: 66215225

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SWELL CONSOLIDATION TEST
ASTM D4546

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS 66215225 U-HAUL FACILITY, GPJ TERRACON_DATATEMPLATE.GDT 2/1/22

AXIAL STRAIN, %



| Specimen Identification | | | Classification | γ_d , pcf | WC, % |
|-------------------------|------|----------|----------------|------------------|-------|
| ● | B-11 | 5 - 6 ft | SANDY SILT(ML) | 76 | 6.7 |

NOTES: Sample inundated with water at 500 pounds per square foot (psf).

PROJECT: U-Haul Facility 724081

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico



PROJECT NUMBER: 66215225

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona



*Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com*

December 15, 2021

Mike Anderson

Terracon

6805 Academy Parkway West NE

Albuquerque, NM 87109

TEL: (505) 797-4287

FAX: (505) 797-4288

RE: UHAUL

OrderNo.: 2112278

Dear Mike Anderson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 12/3/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2112278**

Date Reported: **12/15/2021**

CLIENT: Terracon

Client Sample ID: B-01@2.5

Project: UHAUL

Collection Date: 12/3/2021

Lab ID: 2112278-001

Matrix: SOIL

Received Date: 12/3/2021 12:00:00 PM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---------------------------------|--------|-----|------|----------|----|----------------------|---------------------|
| EPA METHOD 300.0: ANIONS | | | | | | | Analyst: LRN |
| Chloride | 16 | 7.5 | | mg/Kg | 5 | 12/9/2021 2:37:47 PM | 64406 |
| Sulfate | 53 | 7.5 | | mg/Kg | 5 | 12/9/2021 2:37:47 PM | 64406 |
| RESISTIVITY AND EC SOIL | | | | | | | Analyst: MRA |
| Resistivity | 2120 | 100 | | Ohms * c | 1 | 12/6/2021 4:00:00 PM | 64318 |
| SM4500H+B/EPA 9040C | | | | | | | Analyst: JRR |
| pH | 8.92 | | | pH Units | 1 | 12/8/2021 1:34:00 PM | R84370 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

| | | | | |
|--------------------|-----|--|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | PQL | Practical Quantitative Limit | RL | Reporting Limit |
| | S | % Recovery outside of range due to dilution or matrix interference | | |
| | | | | |

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 2112278

Date Reported: 12/15/2021

CLIENT: Terracon

Client Sample ID: B-05@5

Project: UHAUL

Collection Date: 12/3/2021

Lab ID: 2112278-002

Matrix: SOIL

Received Date: 12/3/2021 12:00:00 PM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---------------------------------|--------|-----|------|----------|----|----------------------|---------------------|
| EPA METHOD 300.0: ANIONS | | | | | | | Analyst: LRN |
| Chloride | ND | 7.5 | | mg/Kg | 5 | 12/9/2021 3:51:52 PM | 64406 |
| Sulfate | 210 | 7.5 | | mg/Kg | 5 | 12/9/2021 3:51:52 PM | 64406 |
| RESISTIVITY AND EC SOIL | | | | | | | Analyst: MRA |
| Resistivity | 1240 | 100 | | Ohms * c | 1 | 12/6/2021 4:00:00 PM | 64318 |
| SM4500H+B/EPA 9040C | | | | | | | Analyst: JRR |
| pH | 8.32 | | | pH Units | 1 | 12/8/2021 1:34:00 PM | R84370 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

| | | | | |
|--------------------|-----|--|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | PQL | Practical Quantitative Limit | RL | Reporting Limit |
| | S | % Recovery outside of range due to dilution or matrix interference | | |
| | | | | |

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2112278**

Date Reported: **12/15/2021**

CLIENT: Terracon

Client Sample ID: B-06@2.5

Project: UHAUL

Collection Date: 12/3/2021

Lab ID: 2112278-003

Matrix: SOIL

Received Date: 12/3/2021 12:00:00 PM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---------------------------------|--------|-----|------|----------|----|----------------------|---------------------|
| EPA METHOD 300.0: ANIONS | | | | | | | Analyst: LRN |
| Chloride | 71 | 7.5 | | mg/Kg | 5 | 12/9/2021 4:16:34 PM | 64406 |
| Sulfate | 200 | 7.5 | | mg/Kg | 5 | 12/9/2021 4:16:34 PM | 64406 |
| RESISTIVITY AND EC SOIL | | | | | | | Analyst: MRA |
| Resistivity | 1080 | 100 | | Ohms * c | 1 | 12/6/2021 4:00:00 PM | 64318 |
| SM4500H+B/EPA 9040C | | | | | | | Analyst: JRR |
| pH | 8.28 | | | pH Units | 1 | 12/8/2021 1:34:00 PM | R84370 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

| | | | | |
|--------------------|-----|--|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | PQL | Practical Quantitative Limit | RL | Reporting Limit |
| | S | % Recovery outside of range due to dilution or matrix interference | | |
| | | | | |

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2112278**

Date Reported: **12/15/2021**

CLIENT: Terracon

Project: UHAUL

Lab ID: 2112278-004

Matrix: SOIL

Client Sample ID: B-11@2.5

Collection Date: 12/3/2021

Received Date: 12/3/2021 12:00:00 PM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---------------------------------|--------|-----|------|----------|----|----------------------|---------------------|
| EPA METHOD 300.0: ANIONS | | | | | | | Analyst: LRN |
| Chloride | ND | 7.5 | | mg/Kg | 5 | 12/9/2021 4:41:18 PM | 64406 |
| Sulfate | 8.7 | 7.5 | | mg/Kg | 5 | 12/9/2021 4:41:18 PM | 64406 |
| RESISTIVITY AND EC SOIL | | | | | | | Analyst: MRA |
| Resistivity | 8860 | 100 | | Ohms * c | 1 | 12/6/2021 4:00:00 PM | 64318 |
| SM4500H+B/EPA 9040C | | | | | | | Analyst: JRR |
| pH | 8.90 | | | pH Units | 1 | 12/8/2021 1:34:00 PM | R84370 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2112278

15-Dec-21

Client: Terracon

Project: UHAUL

| | | | | | | | | | | |
|-----------------------------|---------------------------------|---|---------------------|-------------|------|----------|-----------|------|----------|------|
| Sample ID: MB-64406 | SampType: mblk | TestCode: EPA Method 300.0: Anions | | | | | | | | |
| Client ID: PBS | Batch ID: 64406 | RunNo: 84430 | | | | | | | | |
| Prep Date: 12/9/2021 | Analysis Date: 12/9/2021 | SeqNo: 2965973 | Units: mg/Kg | | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride | ND | 1.5 | | | | | | | | |
| Sulfate | ND | 1.5 | | | | | | | | |

| | | | | | | | | | | |
|-----------------------------|---------------------------------|---|---------------------|-------------|------|----------|-----------|------|----------|------|
| Sample ID: LCS-64406 | SampType: lcs | TestCode: EPA Method 300.0: Anions | | | | | | | | |
| Client ID: LCSS | Batch ID: 64406 | RunNo: 84430 | | | | | | | | |
| Prep Date: 12/9/2021 | Analysis Date: 12/9/2021 | SeqNo: 2965974 | Units: mg/Kg | | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride | 14 | 1.5 | 15.00 | 0 | 92.8 | 90 | 110 | | | |
| Sulfate | 28 | 1.5 | 30.00 | 0 | 93.7 | 90 | 110 | | | |

| | | | | | | | | | | |
|----------------------------------|---------------------------------|---|---------------------|-------------|------|----------|-----------|------|----------|------|
| Sample ID: 2112278-001AMS | SampType: ms | TestCode: EPA Method 300.0: Anions | | | | | | | | |
| Client ID: B-01@2.5 | Batch ID: 64406 | RunNo: 84430 | | | | | | | | |
| Prep Date: 12/9/2021 | Analysis Date: 12/9/2021 | SeqNo: 2965983 | Units: mg/Kg | | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride | 31 | 7.5 | 15.00 | 15.64 | 101 | 57.5 | 166 | | | |
| Sulfate | 84 | 7.5 | 30.00 | 52.54 | 106 | 48.4 | 135 | | | |

| | | | | | | | | | | |
|-----------------------------------|---------------------------------|---|---------------------|-------------|------|----------|-----------|------|----------|------|
| Sample ID: 2112278-001AMSD | SampType: msd | TestCode: EPA Method 300.0: Anions | | | | | | | | |
| Client ID: B-01@2.5 | Batch ID: 64406 | RunNo: 84430 | | | | | | | | |
| Prep Date: 12/9/2021 | Analysis Date: 12/9/2021 | SeqNo: 2965984 | Units: mg/Kg | | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride | 30 | 7.5 | 15.00 | 15.64 | 95.8 | 57.5 | 166 | 2.51 | 20 | |
| Sulfate | 83 | 7.5 | 30.00 | 52.54 | 102 | 48.4 | 135 | 1.43 | 20 | |

Qualifiers:

* Value exceeds Maximum Contaminant Level
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2112278

15-Dec-21

Client: Terracon

Project: UHAUL

| | | |
|----------------------------|--------------------------|--|
| Sample ID: 2112278-004ADUP | SampType: DUP | TestCode: SM4500H+B/EPA 9040C |
| Client ID: B-11@2.5 | Batch ID: R84370 | RunNo: 84370 |
| Prep Date: | Analysis Date: 12/8/2021 | SeqNo: 2963934 Units: pH Units |
| Analyte | Result | PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual |
| pH | 8.98 | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2112278

15-Dec-21

Client: Terracon

Project: UHAUL

| | | | | | | | | | | |
|-----------------------------------|--------|---------------------------------|-----------|--|------|-------------------------|-----------|------|----------|------|
| Sample ID: 2112278-001ADUP | | SampType: DUP | | TestCode: Resistivity and eC Soil | | | | | | |
| Client ID: B-01@2.5 | | Batch ID: 64318 | | RunNo: 84329 | | | | | | |
| Prep Date: 12/6/2021 | | Analysis Date: 12/6/2021 | | SeqNo: 2962331 | | Units: Ohms * cm | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Resistivity | 2090 | 100 | | | | | | 1.26 | 20 | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

SUMMARY OF LABORATORY RESULTS

| Borehole No. | Depth (ft.) | USCS Soil Class. | In-Situ Properties | | Classification | | | | Swell/Consolidation Testing | Corrosivity | | | | Remarks |
|--------------|-------------|------------------|--------------------|-------------------|------------------------|----|----|----|-----------------------------|-------------|----------------------|----------------|-----------------|---------|
| | | | Dry Density (pcf) | Water Content (%) | Passing #200 Sieve (%) | LL | PL | PI | | pH | Resistivity (ohm-cm) | Sulfates (ppm) | Chlorides (ppm) | |
| B-01 | 2.5 - 4.0 | SM | | 3 | | | | | | | | | | |
| B-01 | 5.0 - 6.0 | SC | 92 | 5 | 33 | 25 | 14 | 11 | | | 2120 | 53 | 16 | 2 |
| B-01 | 10.0 - 11.5 | SM | | 5 | | | | | | | | | | 1 |
| B-01 | 15.0 - 16.5 | SM | | 5 | | | | | | | | | | 2 |
| B-01 | 20.0 - 21.5 | SM | | 4 | | | | | | | | | | 2 |
| B-01 | 25.0 - 26.5 | SM | | 2 | | | | | | | | | | 2 |
| B-02 | 2.5 - 3.5 | SM | 102 | 4 | 50 | NP | NP | NP | | | | | | 1 |
| B-02 | 5.0 - 6.5 | SM | | 2 | | | | | | | | | | 2 |
| B-02 | 10.0 - 11.5 | SM | | 5 | | | | | | | | | | 2 |
| B-02 | 15.0 - 16.5 | SM | | 3 | | | | | | | | | | 2 |
| B-02 | 20.0 - 21.5 | SM | | 3 | | | | | | | | | | 2 |
| B-03 | 2.5 - 3.5 | SM | 105 | 4 | | | | | | | | | | 1, 2 |
| B-03 | 5.0 - 6.5 | SM | | 7 | 40 | 25 | NP | 25 | | | | | | |
| B-03 | 10.0 - 11.5 | SM | | 4 | | | | | | | | | | 2 |
| B-03 | 15.0 - 16.5 | SM | | 2 | | | | | | | | | | 2 |
| B-03 | 20.0 - 21.5 | SM | | 4 | | | | | | | | | | 2 |
| B-03 | 25.0 - 26.5 | SM | | 3 | | | | | | | | | | 2 |
| B-04 | 2.5 - 3.5 | SM | 111 | 2 | | | | | -0.34 at 500 psf | | | | | 1, 2 |
| B-04 | 5.0 - 6.5 | SM | | 5 | 27 | NP | NP | NP | | | | | | |
| B-04 | 10.0 - 11.5 | SM | | 4 | | | | | | | | | | 2 |
| B-04 | 15.0 - 16.5 | SM | | 5 | | | | | | | | | | 2 |
| B-04 | 20.0 - 21.5 | SM | | 4 | | | | | | | | | | 2 |
| B-04 | 25.0 - 26.5 | SM | | 3 | | | | | | | | | | 2 |
| B-05 | 2.5 - 3.5 | ML | 86 | 5 | 77 | NP | NP | NP | -0.89 at 500 psf | | | | | 1 |
| B-05 | 5.0 - 6.5 | CL | | 8 | | | | | | 8.3 | 1240 | 210 | ND | 2 |

REMARKS

1. Dry Density and/or moisture determined from one or more rings of a multi-ring sample.
2. Visual Classification.
3. Submerged to approximate saturation.
4. Expansion Index in accordance with ASTM D4829-95.
5. Air-Dried Sample

PROJECT: U-Haul Facility 724081

SITE: Paseo Del Norte and Jefferson St NE
Albuquerque, New Mexico



PROJECT NUMBER: 66215225

CLIENT: AMERCO Real Estate Company
Phoenix, Arizona

SUMMARY OF LABORATORY RESULTS

| Borehole No. | Depth (ft.) | USCS Soil Class. | In-Situ Properties | | Classification | | | | Swell/Consolidation Testing | Corrosivity | | | | Remarks |
|--------------|-------------|------------------|--------------------|-------------------|------------------------|------------------|----|----|-----------------------------|-------------|----------------------|----------------|-----------------|---------|
| | | | Dry Density (pcf) | Water Content (%) | Passing #200 Sieve (%) | Atterberg Limits | | | | pH | Resistivity (ohm-cm) | Sulfates (ppm) | Chlorides (ppm) | |
| B-05 | 10.0 - 11.5 | ML | | 8 | | | | | | | | | | 2 |
| B-05 | 15.0 - 16.5 | ML | | 5 | | | | | | | | | | 2 |
| B-05 | 20.0 - 21.5 | SM | | 6 | | | | | | | | | | 2 |
| B-06 | 2.5 - 4.0 | ML | | 3 | | | | | | 8.3 | 1080 | 200 | 71 | 2 |
| B-06 | 5.0 - 6.0 | SM | 107 | 3 | 48 | NP | NP | NP | | | | | | 1 |
| B-06 | 10.0 - 11.5 | SM | | 3 | | | | | | | | | | 2 |
| B-06 | 15.0 - 16.5 | ML | | 3 | | | | | | | | | | 2 |
| B-06 | 20.0 - 21.5 | ML | | 4 | | | | | | | | | | 2 |
| B-07 | 2.5 - 3.5 | SM | 112 | 2 | 28 | NP | NP | NP | | | | | | 1 |
| B-07 | 5.0 - 6.5 | SM | | 7 | | | | | | | | | | 2 |
| B-07 | 10.0 - 11.5 | SM | | 2 | | | | | | | | | | 2 |
| B-07 | 15.0 - 16.5 | SM | | 5 | | | | | | | | | | 2 |
| B-07 | 20.0 - 21.5 | SM | | 3 | | | | | | | | | | 2 |
| B-08 | 2.5 - 3.5 | SM | 120 | 2 | | | | | | | | | | 1, 2 |
| B-08 | 5.0 - 6.5 | SM | | 2 | 29 | NP | NP | NP | | | | | | |
| B-08 | 10.0 - 11.5 | SM | | 4 | | | | | | | | | | 2 |
| B-08 | 15.0 - 16.5 | SM | | 4 | | | | | | | | | | 2 |
| B-08 | 20.0 - 21.5 | SM | | 4 | | | | | | | | | | 2 |
| B-08 | 25.0 - 26.5 | SM | | 2 | | | | | | | | | | 2 |
| B-09 | 2.5 - 4.0 | SM | | 2 | 30 | NP | NP | NP | | | | | | |
| B-09 | 5.0 - 6.0 | SM | 102 | 5 | | | | | -1.50 at 500 psf | | | | | 1, 2 |
| B-09 | 10.0 - 11.5 | SM | | 4 | | | | | | | | | | 2 |
| B-09 | 15.0 - 16.5 | SM | | 3 | | | | | | | | | | 2 |
| B-09 | 20.0 - 21.5 | SM | | 2 | | | | | | | | | | 2 |
| B-10 | 2.5 - 4.0 | SM | | 2 | 13 | NP | NP | NP | | | | | | |

REMARKS

1. Dry Density and/or moisture determined from one or more rings of a multi-ring sample.
2. Visual Classification.
3. Submerged to approximate saturation.
4. Expansion Index in accordance with ASTM D4829-95.
5. Air-Dried Sample

| | | | |
|--|--|---|--|
| PROJECT: U-Haul Facility 724081 | | <div><p>6805 Academy Pkwy West NE Albuquerque, NM</p></div> | PROJECT NUMBER: 66215225 |
| SITE: Paseo Del Norte and Jefferson St NE Albuquerque, New Mexico | | | CLIENT: AMERCO Real Estate Company Phoenix, Arizona |
| | | | PH. 505-797-4287 FAX. 505-797-4288 |













SUMMARY OF LABORATORY RESULTS

| Borehole No. | Depth (ft.) | USCS Soil Class. | In-Situ Properties | | Classification | | | | Swell/Consolidation Testing | Corrosivity | | | | Remarks |
|---|-------------|------------------|--|-------------------|------------------------|------------------|----|----|--|-------------|----------------------|----------------|-----------------|---------|
| | | | Dry Density (pcf) | Water Content (%) | Passing #200 Sieve (%) | Atterberg Limits | | | | pH | Resistivity (ohm-cm) | Sulfates (ppm) | Chlorides (ppm) | |
| | | | | | | LL | PL | PI | | | | | | |
| B-10 | 5.0 - 6.0 | SM | 92 | 6 | | | | | -3.61 at 500 psf | | | | | 1, 2 |
| B-10 | 10.0 - 11.5 | ML | | 4 | | | | | | | | | | 2 |
| B-10 | 15.0 - 16.5 | ML | | 4 | | | | | | | | | | 2 |
| B-10 | 20.0 - 21.5 | ML | | 3 | | | | | | | | | | 2 |
| B-11 | 2.5 - 4.0 | SM | | | | | | | | 8.9 | 8860 | 8.7 | ND | 2 |
| B-11 | 5.0 - 6.0 | ML | 76 | 7 | 59 | NP | NP | NP | -6.80 at 500 psf | | | | | 1 |
| B-11 | 10.0 - 11.5 | ML | | 12 | | | | | | | | | | 2 |
| B-11 | 15.0 - 16.5 | ML | | 5 | | | | | | | | | | 2 |
| B-11 | 20.0 - 21.5 | ML | | 6 | | | | | | | | | | 2 |
| B-11 | 25.0 - 26.5 | SM | | 3 | | | | | | | | | | 2 |
| B-12 | 2.5 - 3.5 | SW-SM | 111 | 1 | 6 | NP | NP | NP | | | | | | 1 |
| B-12 | 5.0 - 6.5 | ML | | 5 | | | | | | | | | | 2 |
| B-12 | 10.0 - 11.5 | ML | | 12 | | | | | | | | | | 2 |
| B-12 | 15.0 - 16.5 | ML | | 7 | | | | | | | | | | 2 |
| B-12 | 20.0 - 21.5 | ML | | 6 | | | | | | | | | | 2 |
| P-01 | 2.5 - 4.0 | SM | | 9 | 49 | NP | NP | NP | | | | | | 1, 2 |
| P-01 | 5.0 - 6.0 | SM | 97 | 7 | | | | | | | | | | 2 |
| P-01 | 10.0 - 11.5 | SM | | 6 | | | | | | | | | | 1 |
| P-02 | 2.5 - 3.5 | SM | 107 | 4 | 39 | NP | NP | NP | | | | | | 2 |
| P-02 | 5.0 - 6.5 | SM | | 5 | | | | | | | | | | 2 |
| P-02 | 10.0 - 11.5 | ML | | 4 | | | | | | | | | | 2 |
| REMARKS 1. Dry Density and/or moisture determined from one or more rings of a multi-ring sample. 2. Visual Classification. 3. Submerged to approximate saturation. 4. Expansion Index in accordance with ASTM D4829-95. 5. Air-Dried Sample | | | | | | | | | | | | | | |
| PROJECT: U-Haul Facility 724081 | | | <div>Terracon</div> <div>6805 Academy Pkwy West NE Albuquerque, NM</div> | | | | | | PROJECT NUMBER: 66215225 | | | | | |
| SITE: Paseo Del Norte and Jefferson St NE Albuquerque, New Mexico | | | | | | | | | CLIENT: AMERCO Real Estate Company Phoenix, Arizona | | | | | |
| | | | PH. 505-797-4287 FAX. 505-797-4288 | | | | | | | | | | | |

SUPPORTING INFORMATION

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

| SAMPLING |  |  |  | WATER LEVEL | <div>Water Initially Encountered</div> <div>Water Level After a Specified Period of Time</div> <div>Water Level After a Specified Period of Time</div> <p>Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.</p> | FIELD TESTS | (HP) | Hand Penetrometer |
|-------------|---|---|---|------------------------|---|-------------|-------|--|
| | Auger | Shelby Tube | Split Spoon | | | | (T) | Torvane |
| |  |  |  | | | | (b/f) | Standard Penetration Test (blows per foot) |
| | Rock Core | Macro Core | Modified California Ring Sampler | | | | N | N value |
| |  |  |  | | | | (PID) | Photo-Ionization Detector |
| Grab Sample | No Recovery | Modified Dames & Moore Ring Sampler | (OVA) | Organic Vapor Analyzer | | | | |

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

| STRENGTH TERMS | RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance Includes gravels, sands and silts. | | | CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance | | | |
|----------------|---|---|------------------------|---|--|---|------------------------|
| | Descriptive Term (Density) | Standard Penetration or N-Value Blows/Ft. | Ring Sampler Blows/Ft. | Descriptive Term (Consistency) | Unconfined Compressive Strength, Qu, psf | Standard Penetration or N-Value Blows/Ft. | Ring Sampler Blows/Ft. |
| | Very Loose | 0 - 3 | 0 - 6 | Very Soft | less than 500 | 0 - 1 | < 3 |
| | Loose | 4 - 9 | 7 - 18 | Soft | 500 to 1,000 | 2 - 4 | 3 - 4 |
| | Medium Dense | 10 - 29 | 19 - 58 | Medium-Stiff | 1,000 to 2,000 | 4 - 8 | 5 - 9 |
| | Dense | 30 - 50 | 59 - 98 | Stiff | 2,000 to 4,000 | 8 - 15 | 10 - 18 |
| | Very Dense | > 50 | ≥ 99 | Very Stiff | 4,000 to 8,000 | 15 - 30 | 19 - 42 |
| | | | | Hard | > 8,000 | > 30 | > 42 |

RELATIVE PROPORTIONS OF SAND AND GRAVEL

| Descriptive Term(s) of other constituents | Percent of Dry Weight |
|--|--------------------------|
| Trace | < 15 |
| With | 15 - 29 |
| Modifier | > 30 |

GRAIN SIZE TERMINOLOGY

| Major Component of Sample | Particle Size |
|------------------------------|--------------------------------------|
| Boulders | Over 12 in. (300 mm) |
| Cobbles | 12 in. to 3 in. (300mm to 75mm) |
| Gravel | 3 in. to #4 sieve (75mm to 4.75 mm) |
| Sand | #4 to #200 sieve (4.75mm to 0.075mm) |
| Silt or Clay | Passing #200 sieve (0.075mm) |

RELATIVE PROPORTIONS OF FINES

| Descriptive Term(s) of other constituents | Percent of Dry Weight |
|--|--------------------------|
| Trace | < 5 |
| With | 5 - 12 |
| Modifier | > 12 |

PLASTICITY DESCRIPTION

| Term | Plasticity Index |
|-------------|------------------|
| Non-plastic | 0 |
| Low | 1 - 10 |
| Medium | 11 - 30 |
| High | > 30 |

UNIFIED SOIL CLASSIFICATION SYSTEM

Proposed U-Haul Storage Buildings ■ Albuquerque, New Mexico

January 12, 2022 ■ Terracon Project No. 66215225



| Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A | | | | | Soil Classification | | |
|--|--|---|---------------------------------------|---|---------------------|------------------------------------|------------------------------|
| | | | | | Group Symbol | Group Name ^B | |
| Coarse-Grained Soils: More than 50% retained on No. 200 sieve | Gravels: More than 50% of coarse fraction retained on No. 4 sieve | Clean Gravels: | Cu ≥ 4 and 1 ≤ Cc ≤ 3 ^E | | GW | Well-graded gravel ^F | |
| | | Less than 5% fines ^C | Cu < 4 and/or 1 > Cc > 3 ^E | | GP | Poorly graded gravel ^F | |
| | | Gravels with Fines: | Fines classify as ML or MH | | GM | Silty gravel ^{F, G, H} | |
| | | More than 12% fines ^C | Fines classify as CL or CH | | GC | Clayey gravel ^{F, G, H} | |
| | Sands: 50% or more of coarse fraction passes No. 4 sieve | Clean Sands: | Cu ≥ 6 and 1 ≤ Cc ≤ 3 ^E | | SW | Well-graded sand ^I | |
| | | Less than 5% fines ^D | Cu < 6 and/or 1 > Cc > 3 ^E | | SP | Poorly graded sand ^I | |
| | | Sands with Fines: | Fines classify as ML or MH | | SM | Silty sand ^{G, H, I} | |
| | | More than 12% fines ^D | Fines classify as CL or CH | | SC | Clayey sand ^{G, H, I} | |
| | Fine-Grained Soils: 50% or more passes the No. 200 sieve | Silts and Clays: Liquid limit less than 50 | Inorganic: | PI > 7 and plots on or above “A” | | CL | Lean clay ^{K, L, M} |
| | | | | PI < 4 or plots below “A” line ^J | | ML | Silt ^{K, L, M} |
| Organic: | | | Liquid limit - oven dried | < 0.75 | OL | Organic clay ^{K, L, M, N} | |
| | | | Liquid limit - not dried | | | Organic silt ^{K, L, M, O} | |
| Silts and Clays: Liquid limit 50 or more | | Inorganic: | PI plots on or above “A” line | | CH | Fat clay ^{K, L, M} | |
| | | | PI plots below “A” line | | MH | Elastic Silt ^{K, L, M} | |
| | | Organic: | Liquid limit - oven dried | < 0.75 | OH | Organic clay ^{K, L, M, P} | |
| | | | Liquid limit - not dried | | | Organic silt ^{K, L, M, Q} | |
| Highly organic soils: | | Primarily organic matter, dark in color, and organic odor | | | | PT | Peat |

^A Based on the material passing the 3-inch (75-mm) sieve

^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^C Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

^D Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

$$^E Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

^F If soil contains $\geq 15\%$ sand, add "with sand" to group name.

^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^H If fines are organic, add "with organic fines" to group name.

^I If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

^L If soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.

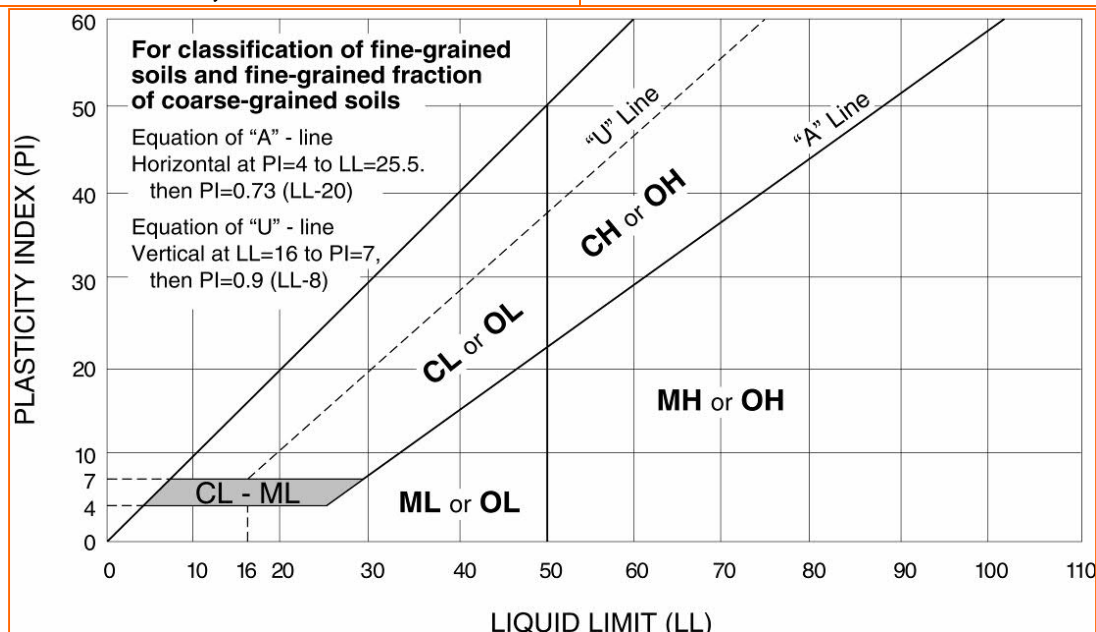
^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.

^N $PI \geq 4$ and plots on or above "A" line.

^O $PI < 4$ or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.



Appendix B: Existing Conditions Drainage Map



SHEET NOT VALID UNLESS THIS TEXT IS COLOR.
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PROJECT
U-HAUL

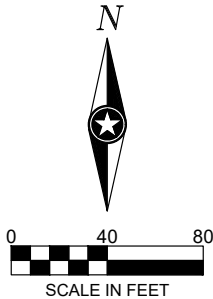
ALBUQUERQUE NEW MEXICO

| REVISION SCHEDULE | | |
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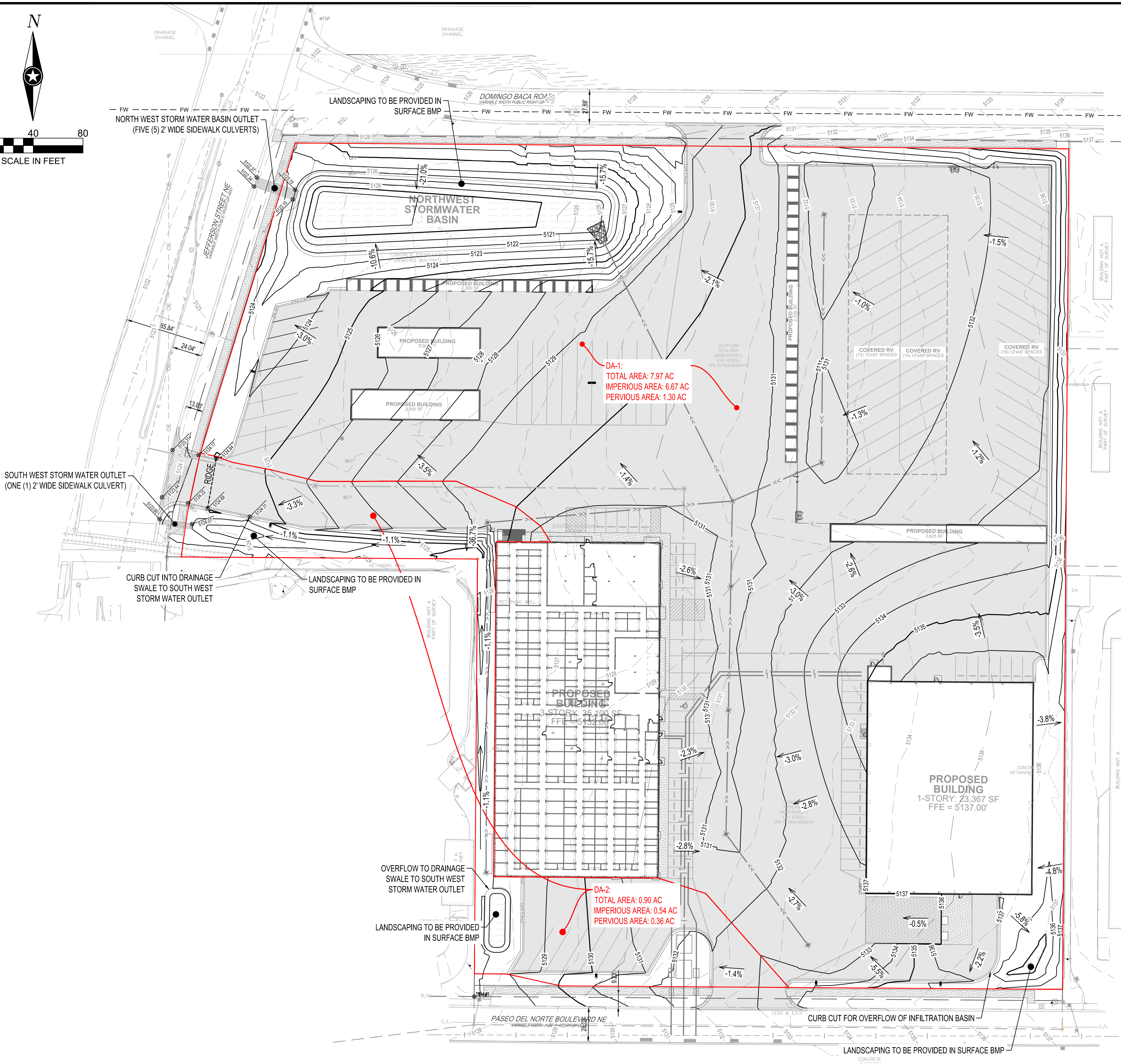
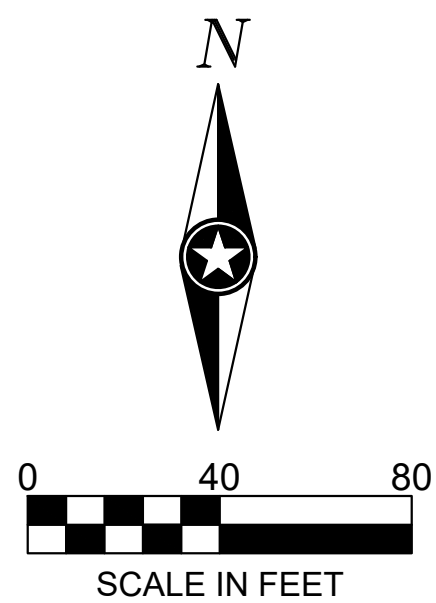
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| PROJECT NO. | 23-28816 |
| FILE NAME | 28816 WATERSHEDS |
| DRAWN BY | RAM |
| DESIGNED BY | RAM |
| REVIEWED BY | ### |
| ORIGINAL ISSUE DATE | ##### |
| CLIENT PROJECT NO. | # |

TITLE
EXISTING DRAINAGE AREAS

SHEET
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Appendix C: Proposed Conditions Drainage Map



| U-Haul Albuquerque, NM | | | | | | | |
|--------------------------|------------|------|-----------------|------|----------|------|---------------------------|
| Drainage Area | Total Area | | Impervious Area | | Pervious | | Flows To |
| | SF | AC | SF | AC | SF | AC | |
| EX-1 | 293152 | 6.73 | 37759 | 0.87 | 255393 | 5.86 | West Offsite to Jefferson |
| EX-2 | 93694 | 2.15 | 0 | 0.00 | 93694 | 2.15 | West Offsite |
| Total | 386846 | 8.88 | 37759 | 0.87 | 349087 | 8.01 | - |

| Drainage Area | Total Area | | Impervious Area | | Pervious | | % Imp | Flows To |
|---------------|------------|------|-----------------|------|----------|------|-------|------------------|
| | SF | AC | SF | AC | SF | AC | | |
| DA-1 | 347173 | 7.97 | 290545 | 6.67 | 56628 | 1.30 | 83.7% | Northwest Outlet |
| DA-2 | 39204 | 0.90 | 23522 | 0.54 | 15682 | 0.36 | 60.0% | Southwest Outlet |
| Total | 386377 | 8.87 | 314068 | 7.21 | 72310 | 1.66 | 81.3% | |

DPM 6-2 FOR DEVELOPMENTS 40 AC AND SMALLER
ZONE 2, 100 YEAR, 6 HR STORM EVENT

| | | | |
|-----------|------------------|------------------|-----------|
| DEPTH | 2.29 | IN | |
| INTENSITY | 0.38 | IN/HR | |
| TYPE | EXISTING AREA SF | PROPOSED AREA SF | E(100 YR) |
| A | 0 | 18156 | 0.62 |
| B | 349087 | 54154 | 0.80 |
| C | 0 | 0 | 1.03 |
| D | 37759 | 314068 | 2.33 |

| EXCESS PRECIPITATION (SUM OF E*A FOR EACH TYPE / TOTAL A) | | |
|---|------|----|
| EXISTING E(100 YR) = | 0.95 | IN |
| PROPOSED E(100 YR) = | 2.04 | IN |

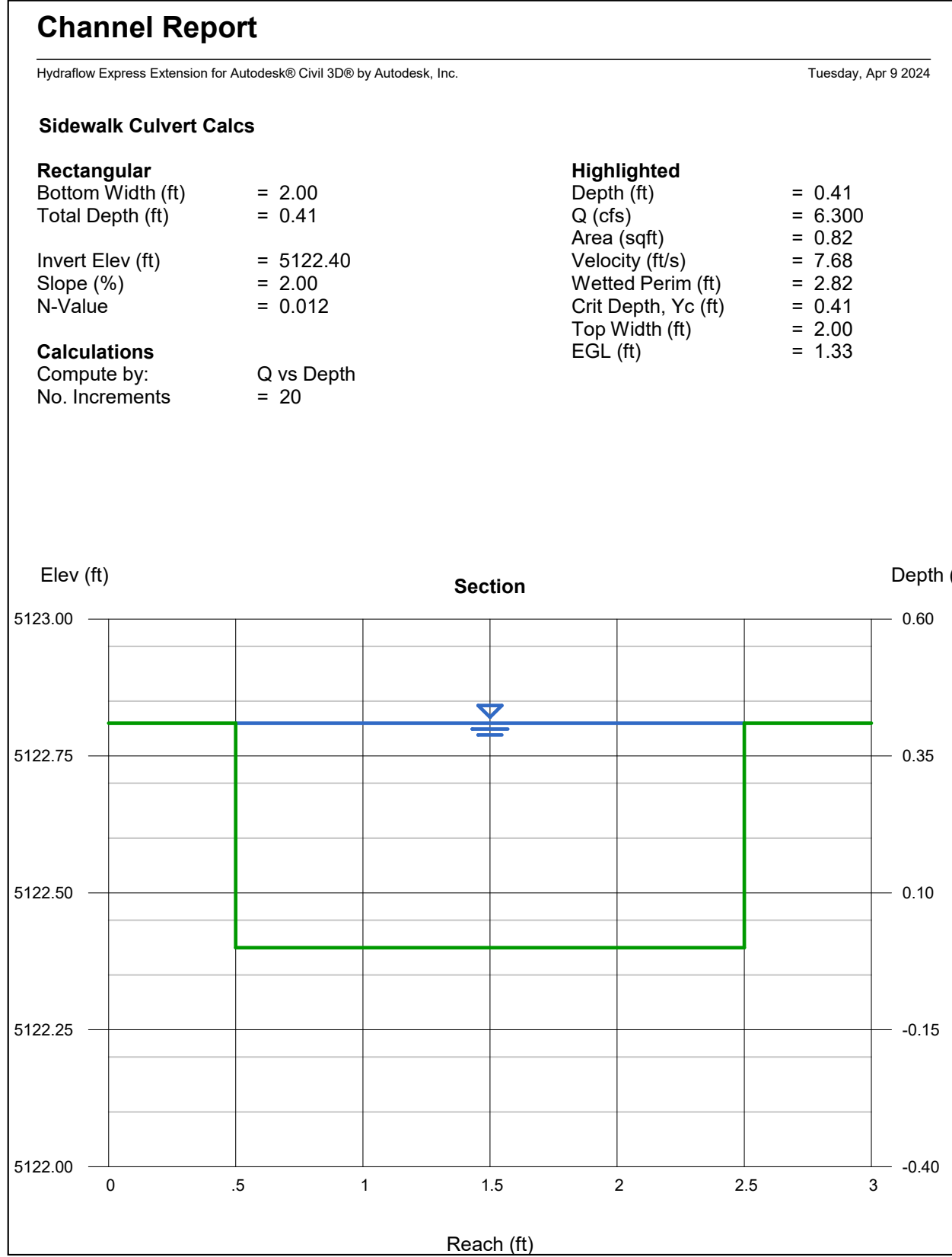
| VOLUME OF RUNOFF (E * A / 12) | | |
|-------------------------------|----------|----|
| EXISTING VOLUME = | 30604.04 | CF |
| PROPOSED VOLUME = | 65529.76 | CF |

| PEAK DISCHARGE RATE (TABLE 6.2.14, ZONE 2) | | | |
|--|------------------|------------------|------------|
| TYPE | EXISTING AREA SF | PROPOSED AREA SF | Q (CFS/AC) |
| A | 0 | 18156 | 1.71 |
| B | 349087 | 54154 | 2.36 |
| C | 0 | 0 | 3.05 |
| D | 37759 | 314068 | 4.34 |

| PEAK DISCHARGE RATE (QP = SUM OF Q*A / 43,560) | | |
|--|-------|-----|
| EXISTING QpA = | 22.67 | CFS |
| PROPOSED QpA = | 34.94 | CFS |

| PEAK DISCHARGE RATE PER DRAINAGE AREA | | Calc | Sidewalk Culverts Needed |
|---------------------------------------|--|------|--------------------------|
| DA-1 | 31.39 CFS (6.3 CFS per sidewalk culvert) | 4.98 | 5 (2 ft wide each) |
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| REQUIRED SWQV PER DPM 6-12 | | Required SWQV | | Provided SWQV | |
|----------------------------|---------------|---------------|-------|---------------|-------|
| SF | WQ Depth (IN) | CF | AC-FT | CF | AC-FT |
| 314068 | 0.42 | 10992 | 0.25 | 37398 | 0.86 |



SHEET NOTES:

REVISIONS:

| NO. | DATE | INITIALS | NOTES |
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04/05/2024

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PROJECT

U-HAUL

ALBUQUERQUE NEW MEXICO

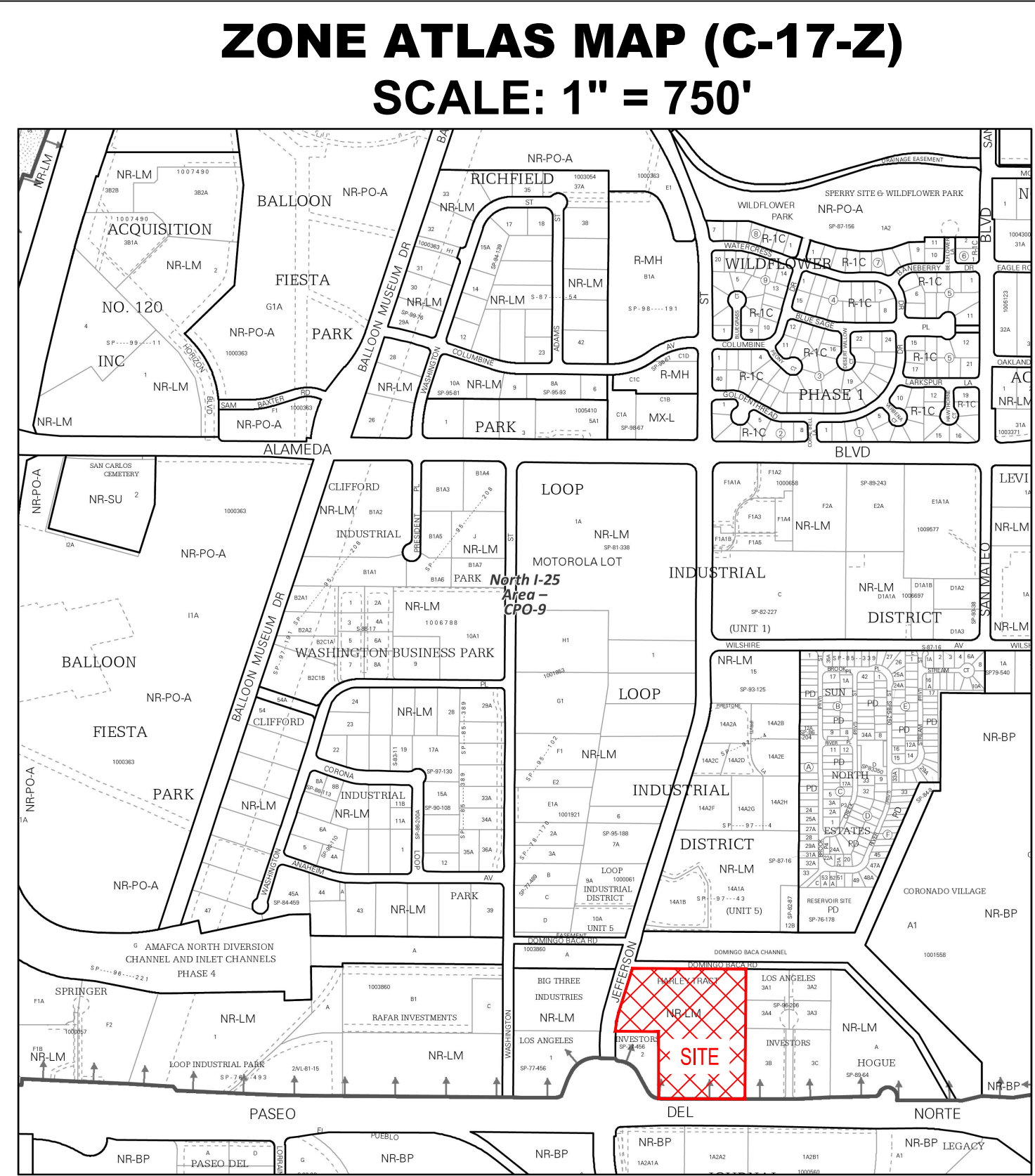
SITE ADDRESS:
U-Haul Moving & Storage
8200 JEFFERSON ST

SHEET CONTENTS:
DRAINAGE AREA
MAP

824071

| | | |
|----------|-----|------|
| DRAWN: | GBV | |
| CHECKED: | ARA | GD-2 |
| DATE: | --- | |

28816 GRADING AND DRAINAGE



NOTES:
PRIOR TO ANY WORK WITHIN THE NEW MEXICO DEPARTMENT OF TRANSPORTATION'S (NMDOT) RIGHT-OF-WAY, AN NMDOT PERMIT WILL BE REQUIRED. A COPY OF THE ISSUED PERMIT IS REQUIRED PRIOR TO REQUESTING CERTIFICATE OF OCCUPANCY.

LEGAL DESCRIPTION:
THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF BERNALILLO, STATE OF NM, AND IS DESCRIBED AS FOLLOWS: THAT CERTAIN TRACT OF LAND SITUATE IN THE SOUTHEAST QUARTER OF SECTION 14, TOWNSHIP 11 NORTH, RANGE 3 EAST, NEW MEXICO PRINCIPAL MERIDIAN, WITHIN THE ELENA GALLEGOS GRANT, BERNALILLO COUNTY, NEW MEXICO, BEING IDENTIFIED AS HARLEY TRACT WITHIN LOOP INDUSTRIAL DISTRICT, UNIT NO. 1, AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS SURVEY AS FOLLOWS: BEGINNING AT THE SOUTHWEST CORNER OF THE TRACT OF LAND HEREIN DESCRIBED, A POINT ON THE NORTHERLY RIGHT-OF-WAY LINE OF LOS ANGELES BLVD. NE, WHENCE THE QUARTER CORNER COMMON TO SECTIONS 14 AND 23, TOWNSHIP 11 NORTH, RANGE 3 EAST, N.M.P.M., BEARS S.82°41'50" W., 848.85 FEET DISTANCE; THENCE, N. 00°17'00" E., 375.00 FEET DISTANCE TO A POINT; THENCE, N. 89°43'00" W., 250.34 FEET DISTANCE TO A POINT ON A CURVE ON THE EASTERLY RIGHT-OF-WAY LINE OF JEFFERSON STREET NE; THENCE, NORTHEASTERLY 124.71 FEET DISTANCE ALONG THE EASTERLY RIGHT-OF-WAY LINE OF JEFFERSON STREET NE, ALONG THE ARC OF A CURVE BEARING TO THE RIGHT (SAID ARC HAVING A RADIUS OF 673.20 FEET AND CHORD WITH BEARS 124.53 FEET DISTANCE) TO A POINT OF TANGENCY; THENCE, N. 11°49'35" E., S. 17°08'00" E., 227.77 FEET DISTANCE TO A POINT ON THE SOUTHERLY RIGHT-OF-WAY LINE OF A DRAINAGE CHANNEL (AMAFCA) AND THE NORTHWEST CORNER OF THE TRACT OF LAND HEREIN DESCRIBED; THENCE, S. 89°43'00" E., 633.04 FEET DISTANCE ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF A DRAINAGE CHANNEL (AMAFCA) TO THE NORTHEAST CORNER OF THE TRACT OF LAND HEREIN DESCRIBED; THENCE, S. 00°17'00" W., 715.00 FEET DISTANCE TO A POINT ON THE NORTHERLY RIGHT-OF-WAY LINE OF LOS ANGELES BLVD. NE AND THE SOUTHEAST CORNER OF THE TRACT OF LAND HEREIN DESCRIBED; THENCE, N. 89°43'00" W., 473.64 FEET DISTANCE ALONG THE NORTHERLY RIGHT-OF-WAY LINE OF LOS ANGELES BLVD. NE TO THE PLACE OF BEGINNING.

FLOOD HAZARD:
BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS IN ZONE "X" OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 35001C0137H, WHICH BEARS AN EFFECTIVE DATE OF 08/16/2012 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA
ZONE "X" - AREA OF MINIMAL FLOOD HAZARD, USUALLY DEPICTED ON FIRMS AS ABOVE THE 500-YEAR FLOOD LEVEL. ZONE X IS THE AREA DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD AND PROTECTED BY LEVEE FROM 100-YEAR FLOOD.

BENCHMARK INFO:
LOCATED AT SE CORNER OF SITE ADJACENT TO PASEO DEL NORTE
FOUND 2" ALUMINUM CAP "N.M. D.O.T."
NORTHING: 1519065.87
EASTING: 1538067.67
ELEVATION: 5127.87'

SHEET NOTES:

REVISIONS:

| NO. | DATE | INITIALS | NOTES |
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PROJECT

U-HAUL

ALBUQUERQUENEW MEXICO

SITE ADDRESS:
U-Haul Moving & Storage
8200 JEFFERSON ST

SHEET CONTENTS:

GRADING AND
DRAINAGE PLAN

824071

| | | |
|----------|------------|------|
| DRAWN: | GBV | GD-1 |
| CHECKED: | ARA | |
| DATE: | --/--/---- | |

28816 GRADING AND DRAINAGE

Appendix D: Proposed Stormwater Calculations

U-Haul | Albuquerque, NM

EXISTING DRAINAGE AREAS

| Drainage Area | Total Area | | Impervious Area | | Pervious Area | | % Imp | Flows To |
|---------------|------------|------|-----------------|------|---------------|------|-------|---------------------------|
| | SF | AC | SF | AC | SF | AC | | |
| EX-1 | 293152 | 6.73 | 37759 | 0.87 | 255393 | 5.86 | 12.9% | West Offsite to Jefferson |
| EX-2 | 93694 | 2.15 | 0 | 0.00 | 93694 | 2.15 | 0.0% | West Offsite |
| Total | 386846 | 8.88 | 37759 | 0.87 | 349087 | 8.01 | 9.8% | - |

PROPOSED DRAINAGE AREAS

| Drainage Area | Total Area | | Impervious Area | | Pervious Area | | % Imp | Flows To |
|---------------|------------|------|-----------------|------|---------------|------|-------|------------------|
| | SF | AC | SF | AC | SF | AC | | |
| DA-1 | 347173 | 7.97 | 290545 | 6.67 | 56628 | 1.30 | 83.7% | Northwest Outlet |
| DA-2 | 39204 | 0.90 | 23522 | 0.54 | 15682 | 0.36 | 60.0% | Southwest Outlet |
| Total | 386377 | 8.87 | 314068 | 7.21 | 72310 | 1.66 | 81.3% | |

| | | |
|--|------|-------|
| DPM 6-2 FOR DEVELOPMENTS 40 AC AND SMALLER | | |
| ZONE 2, 100 YEAR, 6 HR STORM EVENT | | |
| DEPTH | 2.29 | IN |
| INTENSITY | 0.38 | IN/HR |

| TYPE | EXISTING AREA SF | PROPOSED AREA SF | E(100 YR) |
|------|------------------|------------------|-----------|
| A | 0 | 18156 | 0.62 |
| B | 349087 | 54154 | 0.80 |
| C | 0 | 0 | 1.03 |
| D | 37759 | 314068 | 2.33 |

EXCESSS PRECIPITATION (SUM OF E*A FOR EACH TYPE / TOTAL A)

| | | |
|----------------------|------|----|
| EXISTING E(100 YR) = | 0.95 | IN |
| PROPOSED E(100 YR) = | 2.04 | IN |

VOLUME OF RUNOFF (E * A / 12)

| | | |
|-------------------|----------|----|
| EXISTING VOLUME = | 30604.04 | CF |
| PROPOSED VOLUME = | 65529.76 | CF |

PEAK DISCHARGE RATE (TABLE 6.2.14, ZONE 2)

| TYPE | EXISTING AREA SF | PROPOSED AREA SF | Q (CFS/AC) |
|------|------------------|------------------|------------|
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PEAK DISCHARGE RATE (QP = SUM OF Q*A / 43,560)

| | | |
|----------------|-------|-----|
| EXISTING QpA = | 22.67 | CFS |
| PROPOSED QpA = | 34.94 | CFS |

PEAK DISCHARGE RATE PER DRAINAGE AREA

| | Calc | Sidewalk Culverts Needed |
|---|------|--------------------------|
| DA-1 31.39 CFS (6.3 CFS per sidewalk culvert) | 4.98 | 5 (2 ft wide each) |
| DA-2 3.55 CFS (6.3 CFS per sidewalk culvert) | 0.56 | 1 (1 ft wide each) |

REQUIRED SWQV PER DPM 6-12

| Impervious Area | | Required SWQV | | Provided SWQV | |
|-----------------|---------------|---------------|-------|---------------|-------|
| SF | WQ Depth (IN) | CF | AC-FT | CF | AC-FT |
| 314068 | 0.42 | 10992 | 0.25 | 37398 | 0.86 |

Channel Report

Sidewalk Culvert Calcs

Rectangular

Bottom Width (ft) = 2.00
Total Depth (ft) = 0.41

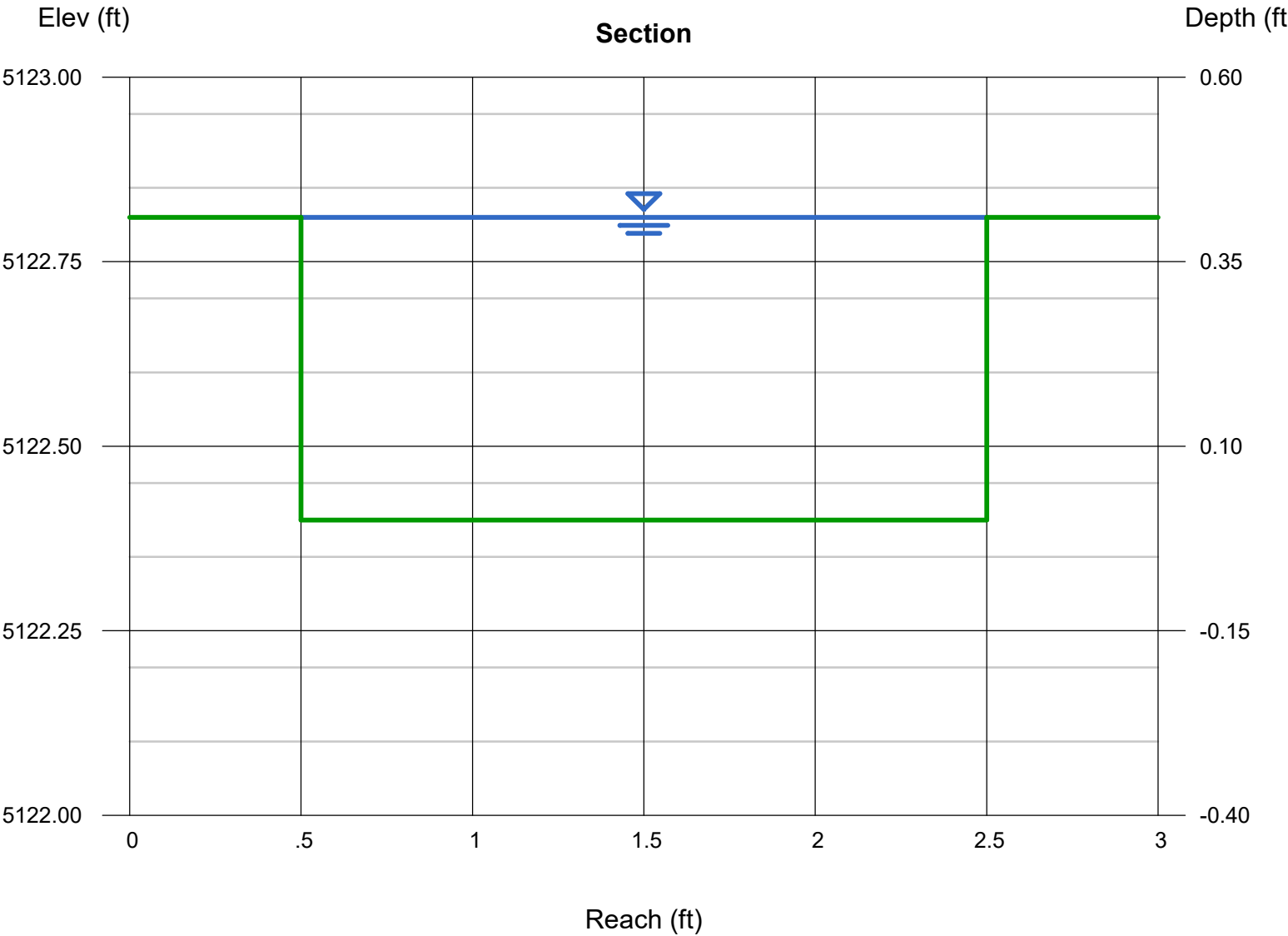
Invert Elev (ft) = 5122.40
Slope (%) = 2.00
N-Value = 0.012

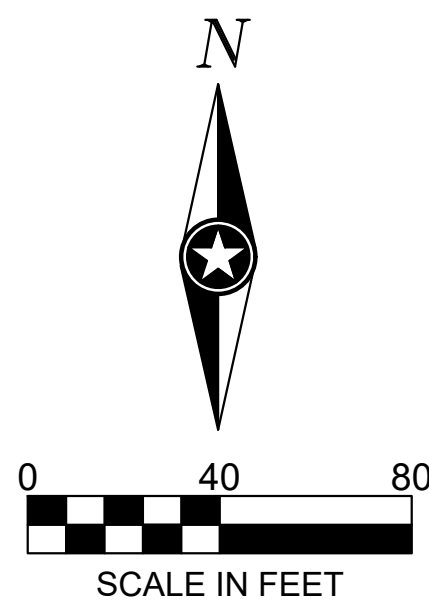
Calculations

Compute by: Q vs Depth
No. Increments = 20

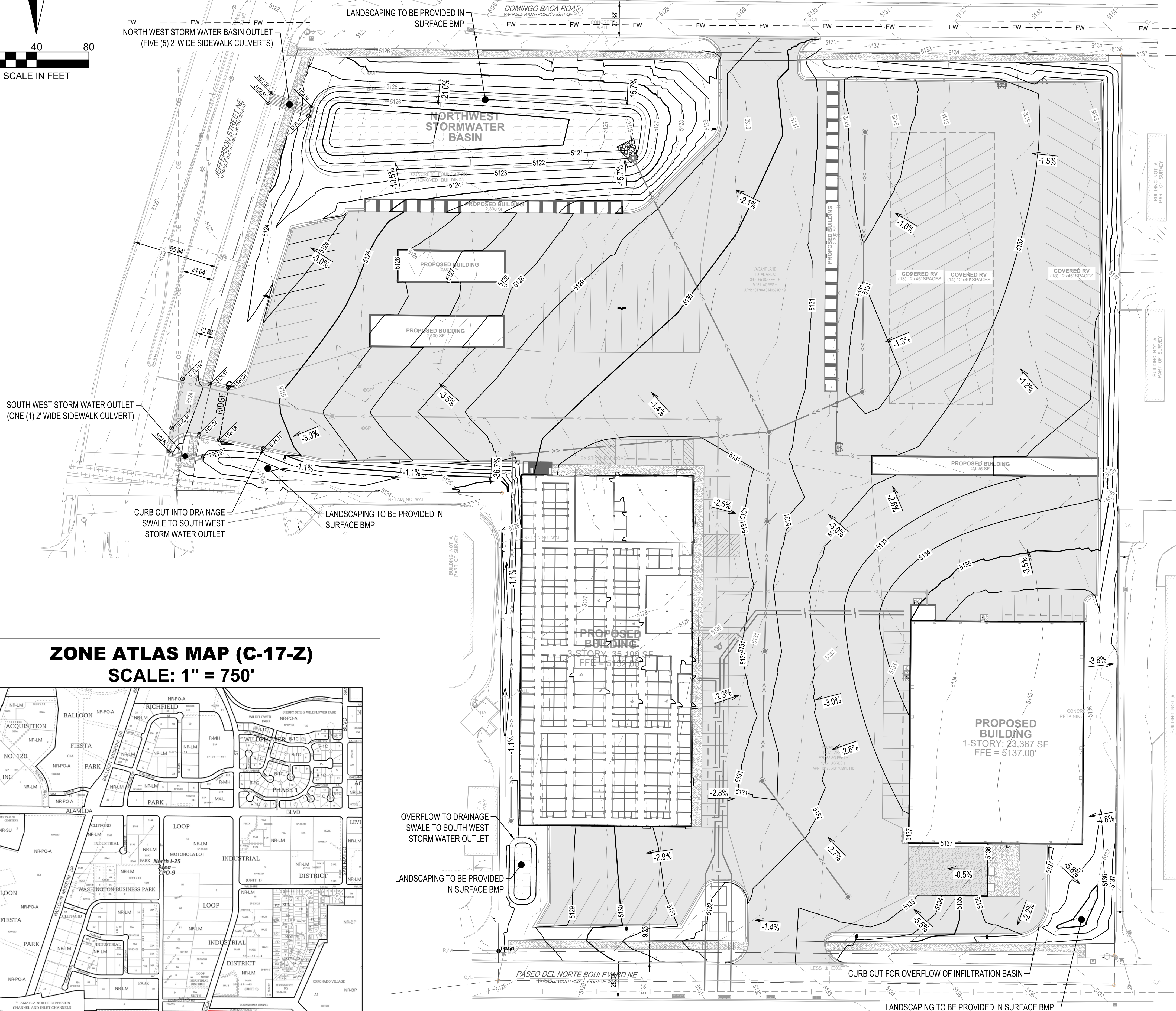
Highlighted

Depth (ft) = 0.41
Q (cfs) = 6.300
Area (sqft) = 0.82
Velocity (ft/s) = 7.68
Wetted Perim (ft) = 2.82
Crit Depth, Yc (ft) = 0.41
Top Width (ft) = 2.00
EGL (ft) = 1.33

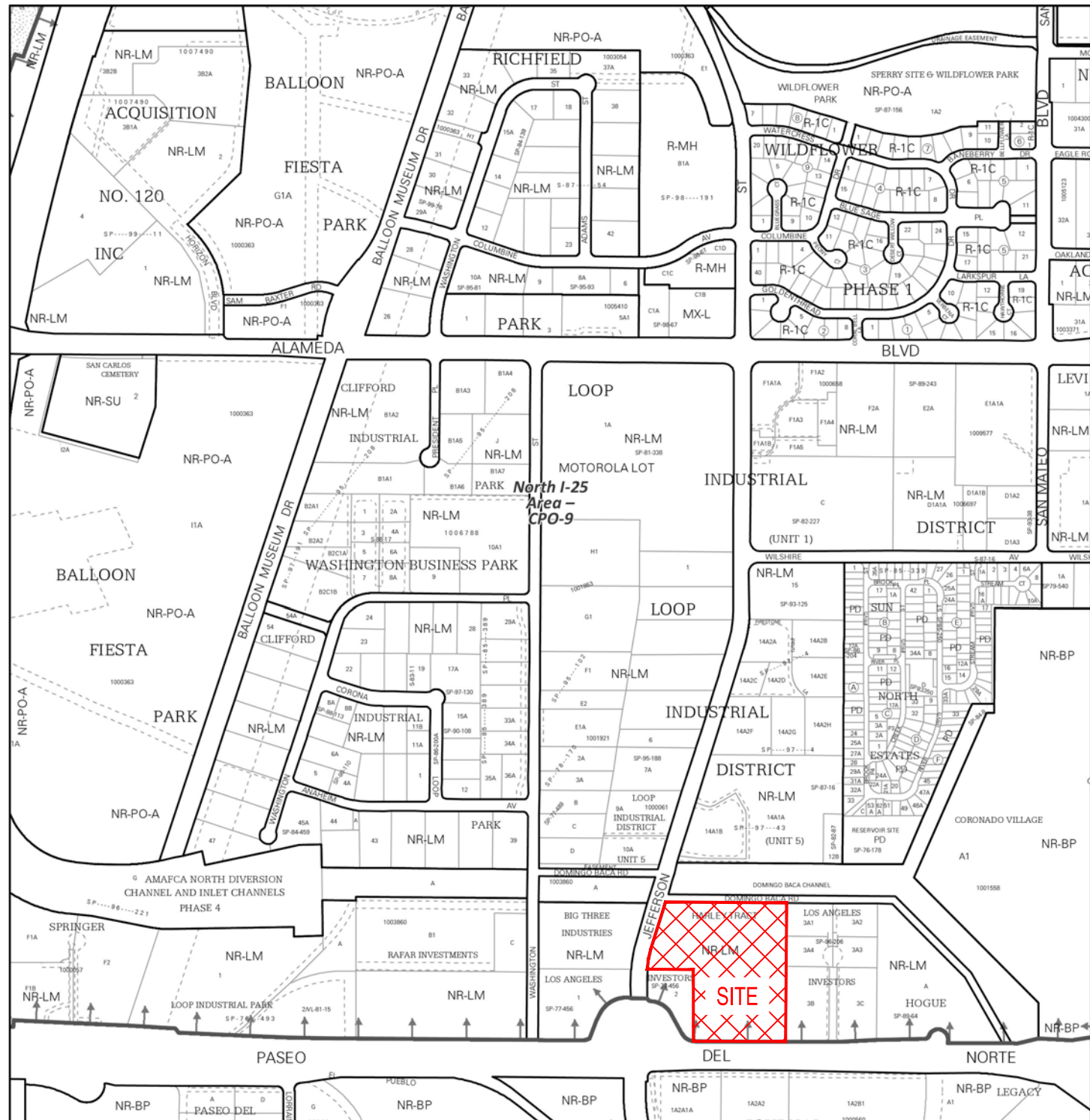




City of Albuquerque
Planning Department
Development Review Services
PRELIMINARY APPROVED
DATE: 05/21/24
BY: *Rosie C. Brucette*
HydroTrans #: C17D146
THESE PLANS AND/OR REPORT ARE
CONCEPTUAL ONLY. MORE INFORMATION MAY
BE NEEDED IN THEM AND SUBMITTED TO
HYDROLOGY FOR BUILDING PERMIT APPROVAL.



ZONE ATLAS MAP (C-17-Z)
SCALE: 1" = 750'



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PROJECT

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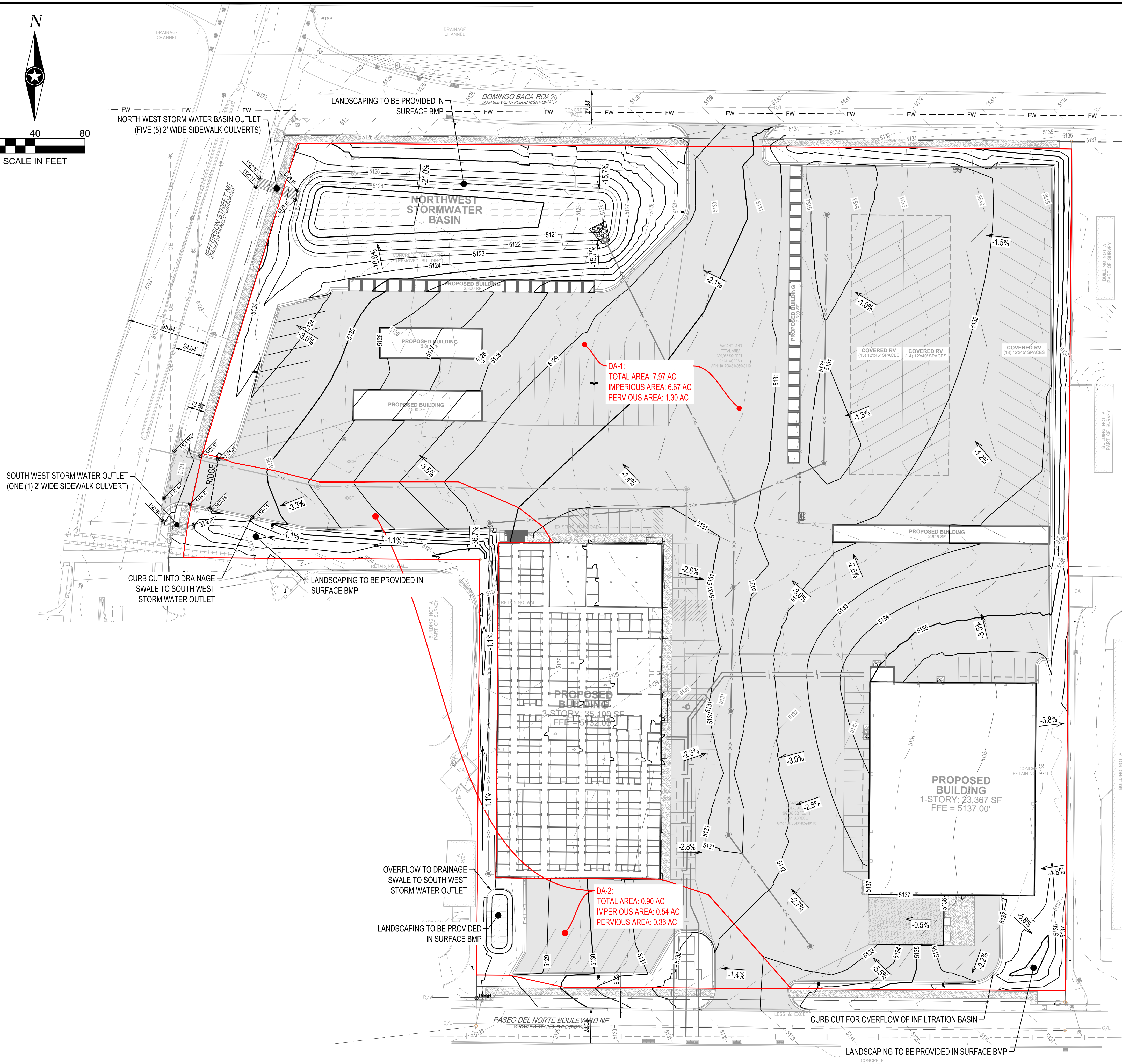
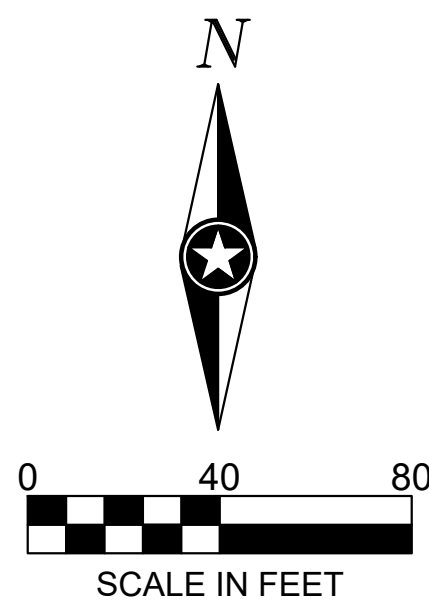
ALBUQUERQUE NEW MEXICO
SITE ADDRESS:
U-Haul Moving & Storage
8200 JEFFERSON ST

SHEET CONTENTS:

**GRADING AND
DRAINAGE PLAN**

824071

DRAWN: GBV
CHECKED: ARA **GD-1**
DATE: 4/4/24
28816 GRADING AND DRAINAGE



| U-Haul Albuquerque, NM | | | | | | | |
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DPM 6-2 FOR DEVELOPMENTS 40 AC AND SMALLER

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DEPTH 2.29 IN

INTENSITY 0.38 IN/HR

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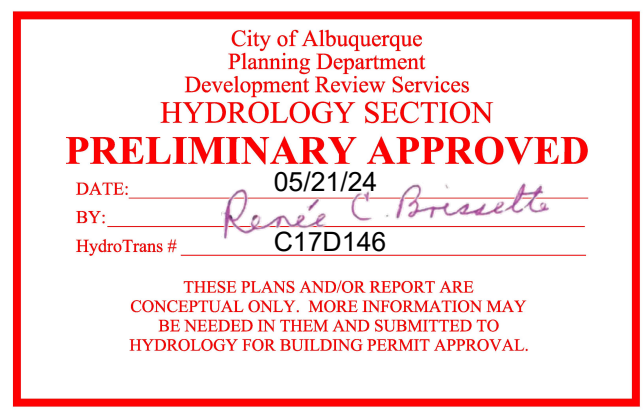
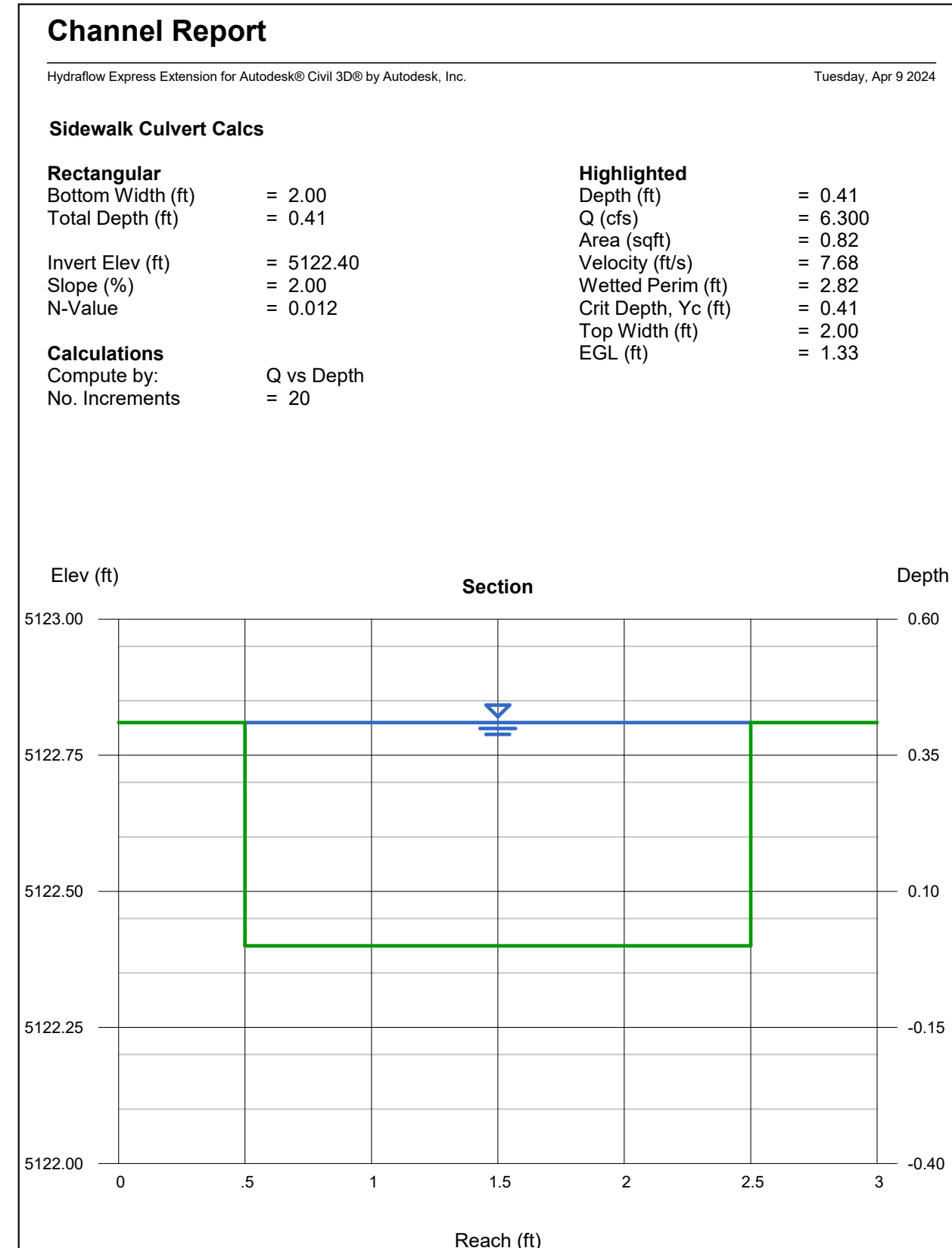
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| PEAK DISCHARGE RATE (TABLE 6.2.14, ZONE 2) | | | |
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|---------------------------------------|--|------|--------------------------|
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| REQUIRED SWQV PER DPM 6-12 | | Required SWQV | | Provided SWQV | |
|----------------------------|---------------|---------------|-------|---------------|-------|
| SF | WQ Depth (IN) | CF | AC-FT | CF | AC-FT |
| 314068 | 0.42 | 10992 | 0.25 | 37398 | 0.86 |



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REVISIONS:

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PROFESSIONAL SEAL:

04/05/2024

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PROJECT

U-HAUL

ALBUQUERQUE NEW MEXICO

SITE ADDRESS:
U-Haul Moving & Storage
8200 JEFFERSON ST

SHEET CONTENTS:
DRAINAGE AREA MAP

824071

| | |
|----------|-----------------|
| DRAWN: | GBV |
| CHECKED: | ARA GD-2 |
| DATE: | --- |

28816 GRADING AND DRAINAGE