GEOTECHNICAL ENGINEERING REPORT
DAYBREAK APARTMENTS
DAYBREAK VIEW PARKWAY & OAKMOND ROAD
SOUTH JORDAN, UTAH
AMEC Project No. 8-817-005239

amec

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May 13, 2008

Nolte Associates, Inc.
5217 South State Street, Suite 300
Murray, Utah 84107-4828

Attention: Mr. Brent Morgan, PE

SUBJECT: Geotechnical Engineering Report
Daybreak View Pkwy and Oakmond Rd
South Jordan, Utah
AMEC Project No. 8-817-005239

1. INTRODUCTION

1.1 Objectives and Scope

This report presents the results of our geotechnical investigation for the proposed Daybreak Apartments to be located at the northwest corner of Daybreak View Pkwy and Oakmond Rd in South Jordan, Utah. The approximate location of the site is shown on the Vicinity Map, Figure 1. This investigation was conducted in accordance with the scope of work outlined in AMEC proposal No. PL08-015 dated March 4, 2008. The investigation consisted of subsurface explorations, laboratory testing, engineering analyses, and report preparation. This report summarizes the work accomplished and presents our conclusions and recommendations for design and construction of the project.

2. PROJECT DESCRIPTION

We understand that the project will consist of the construction of 8 three story apartment structures, a clubhouse, and an associated pool. It is assumed that the bottom of the pool will be established about 6 feet below the existing ground surface. The clubhouse will be a small single-story structure. Structures are expected to be slab on grade with wood frame wall construction. Columns and walls are expected to have a maximum load of approximately 100 kips and 6 kips per linear feet, respectively. Surrounding areas will be landscaped or paved for parking and auto drives.

3. SITE DESCRIPTION

3.1 Site Conditions

The project site is situated on vacant land that has been used in the past for quarry operations. It has likely experienced some mass grading during the construction of nearby plats and roadways. Fill is evident across the site, and site elevations can vary from 4 to 5 feet between fill piles and adjacent native land. The fill generally ranges in depth from 2.5 to 5 feet below grade over much of the site. The ground surface is generally clear of surface vegetation.

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3.2 Geology

Based on our review of the available geologic literature[1] and our experience with other nearby projects, we anticipate the site is mantled with lacustrine sand and gravel deposited during the Bonneville lake cycle. A review of hazards maps for Salt Lake County[2] indicates that the project site is located in an area designated as very low in liquefaction potential and outside of special study areas for surface fault rupture.

4. FIELD EXPLORATION & LABORATORY TESTING

4.1 Field Explorations

Subsurface materials and conditions at the project site were investigated on March 31 to April 2, 2008 with 16 borings designated B-1 through B-16 and on April 22, 2008 with 8 test pits designated TP-1 through TP-4 and S-1 through S-4. The approximate locations of the borings are shown on the Site Plan, Figure 2. The field exploration program was directed by an experienced member of our geotechnical staff who maintained a detailed log of the materials and conditions encountered in each of the test pits. Additional information regarding the field exploration program is presented in Appendix A.

4.2 Field Infiltration Testing

Field infiltration tests were conducted in the vicinity of test pits TP-1 and TP-4 to obtain information regarding the infiltration capacity of the on-site soils. The tests were conducted in a 10-foot-deep bore hole cased with a 3-inch diameter perforated PVC sewer pipe. The bore holes were saturated with water 24-hours prior to the actual test. For the actual test, water was injected into the test hole with 5 gallon buckets of water and the rate of decline of the water level was measured. Because of the rapid decline of the water level during the test, it was difficult to measure a percolation rate less than 1 minute per inch. The infiltration rate was then calculated based on for a unit area of 1 square foot. The following table presents the results of the infiltration tests:

Location	Depth, (ft)	Soil Type	Percolation Rate (Min/in)	Infiltration Rate, (Gal/Min/ft^2)
TP-1	10.0	Silty Gravel with Sand (GM)	< 1	0.6
TP-4	10.0	Silty Gravel (GM)	< 1	0.6

1 Biek, R.F., Solomon, F.J., Keith, J.D., and Smith, T.W., 2004, Interim geologic map of the Copperton, Magna, and Tickville Spring quadrangles, Salt Lake and Utah Counties, Utah, UGS Open File Report 434, Plate 1, scale 1:24,000

2 Nelson, C.V., and Bryant, B.A., compilers, 1989, Surface rupture liquefaction potential special study areas Salt Lake County, Utah, scale 1:48,000

4.3 Laboratory Testing

Laboratory testing consisted of natural moisture content determinations, grain size distribution, washed sieve analyses, and analytical tests. A description of the individual tests and test results are presented in Appendix B.

5. SUBSURFACE CONDITIONS

5.1 Soils

For the purpose of discussion, the soils disclosed by the borings and test pit excavations have been grouped into the following categories based on their physical properties.

FILL: Variable thicknesses of silty sand and gravel and clayey gravel, ranging from 1.5 to 5 feet, were encountered within the exploratory holes. Several borings and test pits encountered no fill. The fill was typically medium dense and ranged in color from brown to dark brown. Tactile moisture ranged from slightly moist to moist. The fill was generally free from deleterious debris except for a few holes which had topsoil, vegetation, and wooden boards.

Gravel with Sand and Silt: Gravel containing varying amounts of sand and silt was encountered beneath the fill. The gravel with silt is typically brown with moisture descriptions ranging from dry to moist. The relative density ranges from medium dense to dense. Minor amounts of cobble were also encountered at some depths. The amount of silt (material finer than the No. 200 sieve) typically varies from 5 to 9 percent. Unified Soil Classification group symbols are typically GP, GM, to GP-GM. The sidewalls of the excavations typically caved easily during excavation because of the lack of fines to bind the gravel together and provide cohesion. Natural moisture content varies from 3 to 7 percent with dry densities ranging from 107 to 118 pcf.

Gravel with Clay: Clayey gravel was encountered directly below fill over a portion of the project site. It was also encountered within the soil profile underlying poorly graded gravel with silt. It has a relative density ranging from loose to medium dense. It is generally brown with moisture descriptions ranging from dry to moist. The natural moisture content varies from 5 to 10 percent, and dry densities range from 98 to 121 pcf.

Silty Sand: Minor amounts of silty sand and sandy silt were encountered within the soil profile. The silty sand typically has minor amounts of gravel. The relative density of the silty sand is typically medium dense, but is also noted as loose. The color is typically brown and the moisture description ranges from dry to moist.

5.2 Groundwater

Groundwater was not encountered in the borings during the field exploration program. Fluctuations in groundwater levels can occur due to variations in precipitation, runoff, water levels in nearby ditches, drainages and other factors. Seasonal and longer-term groundwater

fluctuations should be anticipated with the highest seasonal levels generally occurring during the late spring and summer months.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 General

In our opinion, the primary geotechnical considerations with respect to the proposed apartments and pool area are the presence of fill on the site and the cohesionless nature of the fill and native gravel. Experience indicates that foundations and pavements supported on undocumented fill, such as encountered at this site, have an increased risk of settlement related distress and poor performance. Founding the building on these fills is not acceptable, foundations will need to be placed on native granular soils or upon structural fill extending down to native soils.

Some on-site gravel soils contain very little fines (material finer than the No. 200 sieve). When confined, these soils have high bearing and low compressibility characteristics; however, when unconfined at the ground surface, these soils have a tendency to displace or "shove" easily when subjected to construction traffic. A method that has been used successfully in the past to stabilize these clean granular materials has been to cap the gravel surface with a layer (6-inch minimum) of crushed angular material, such as base course.

It should be anticipated that vertical excavation slopes will not be stable in the gravel, and pool walls will likely require formed construction rather than direct application of shotcrete.

6.2 Earthwork

Considerable earthwork with respect to fill and final site grading will be required for project construction. Excavations of approximately 5 feet will be required to remove fill from the site.

6.2.1 Site Preparation

The ground surface should be stripped of all vegetation, organic material, unsuitable fill, or any other deleterious material within building and pavement areas. Based on our findings during site observations, test pits, and borings very little stripping will be required due to vegetation alone. Upon completion of the site stripping, the exposed subgrade should be evaluated by a qualified soils engineer or engineering geologist. Any soft or loose areas observed during the subgrade evaluation should be over-excavated to firm undisturbed native soil and backfilled with structural fill.

6.2.2 Excavations

We anticipate that excavation can be accomplished in the sand and gravel soils using heavy duty track-mounted excavation equipment. We recommend that temporary excavation slopes in the gravel are constructed no steeper than 1.5H:1V. The contractor is solely responsible for designing and constructing stable, temporary evaluations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's responsible person, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case

should scope height, slope inclination, or excavation depth, including utility trench evacuation depth, exceed those specified in local, State, and Federal safety regulations.

6.2.3 Structural Fill

The term "structural fill" refers to any materials that will support structures, pavement, and slab-on-grade concrete. Structural fill should be free of debris, vegetation, roots, frozen or otherwise unsuitable material. The on-site sand and gravel soils are generally suitable for use as structural fill. The use of clay and silt is not recommended for structural fill within the building footprint.

Imported granular material, if required, should meet the criteria presented in Table 1 below. Granular materials such as these can normally be placed and compacted during wet weather.

Table 1
Import Granular Structural Fill Requirements

Sieve Sizes (Square Openings)	Percent Passing (By Dry Weight)
6 inch	100
No. 40	50 max
No. 200	25 max
Liquid Limit, LL $\leq$ 30 Plasticity Index, PI $\leq$ 6	

In general, structural fill should be placed in lift thicknesses not exceeding 9-inches (loose) and compacted using pneumatic or segmented pad rollers to a density not less than 95 percent of the maximum dry density as determined by ASTM D 1557. Fill placed in landscaped areas should be compacted to a minimum of 90 percent of the maximum dry density. The moisture content at the time of compaction should be within about 3 percent of optimum. Lift thicknesses should be appropriate for the type of compaction equipment used. For example, thicker lifts may be appropriate for large compaction equipment used in mass grading fills and thinner lifts will likely be required for hand operated equipment. The effectiveness of the contractor's compactive effort should be evaluated during fill placement and lift thicknesses should be adjusted accordingly to meet the minimum density requirements for the project.

6.2.4 Utility Trench Backfill

All backfill placed in utility trench excavations within the limits of the buildings and paved areas should consist of sand, sand and gravel, or crushed rock with a maximum size of up to 2-inches and with not more than 15 percent passing the No. 200 sieve (washed analysis). In our opinion, the granular backfill should be placed in 9-inch-thick lifts (loose) and compacted using vibratory plate

compactors or tamping units to at least 92 percent of the maximum dry density as determined by ASTM D 1557. Flooding or jetting the backfilled trenches with water to achieve the recommended compaction should not be permitted.

6.3 Foundations

Foundation support for the apartments can be provided by conventional wall- and column-type spread footings. Footings should be established on firm, undisturbed soil or compacted structural fill at a minimum depth of 30 inches below the lowest adjacent finished floor grade. The width of footings should not be less than 18 inches for wall footings or 24 inches for isolated column footings. Foundation subgrades should be evaluated by a geotechnical engineer prior to placement of reinforcing steel. Soft areas, or areas of unsuitable material, should be overexcavated and replaced with compacted granular fill.

Footings established in accordance with the above criteria can be designed to impose an allowable soil bearing pressure of up to 2,500 psf. This value applies to the total of real loads, i.e., dead load plus frequently and/or permanently applied live loads, and can be increased by one-half for the total of all loads; dead, live, and wind or seismic.

6.3.1 Installation

Under no circumstances should foundations or pavement be installed upon loose or disturbed soil, sod, rubbish, construction debris, topsoil, frozen soil, non-engineered fill, highly expansive clays, other deleterious materials, or within ponded water. If there are unsuitable conditions encountered, the soils must be totally removed and replaced with compacted granular structural fill. If granular soils become loose or disturbed, they must be properly recompacted before the footings are poured. The width of replacement fill below footings should be equal to the width of the footing plus 0.5 foot for each foot of fill thickness on either side of the footing. For example, if the width of the footing is 2 feet and the thickness of the structural fill beneath the footing is 2 feet, the width of the structural fill at the base of the footing excavation would be a total of 4 feet.

6.3.2 Settlement

We estimate the settlement of spread footings established in accordance with the above criteria will be less than 1-inch. Differential settlement is expected to be on the order of ½ of the total. Our experience indicates the settlements will occur relatively rapidly, with the majority of the settlement occurring during construction as foundation loading is applied. In the case of the pool, loading and unloading the pool will result in cyclical stress changes that should be considered in the design of the pool lining.

6.3.3 Lateral Resistance

Horizontal shear forces can be resisted partially or completely by frictional forces developed between the base of spread footings and the underlying soil and by soil passive resistance. The total frictional resistance between the footing and soil is the normal force times the coefficient of friction between the soil and the base of the footing. The normal force is the sum of the vertical forces (dead load plus real live load). We recommend an ultimate value of 0.45 for the coefficient of

friction for footings established on the native sand and gravel soils or on granular structural fill. If additional lateral resistance is required, passive earth pressures against embedded footings can be computed on the basis of an equivalent fluid having a unit weight of 300 pcf. This design passive earth pressure would be applicable only if the footing is cast neat against undisturbed soil, or if backfill for the footings is placed as granular structural fill.

6.4 Lateral Earth Pressures

Design lateral earth pressures for retaining walls depend on the type of construction, i.e., the ability of the wall to yield. The two possible conditions regarding the ability of the wall to yield include the at-rest and the active earth pressure cases. The at-rest earth pressure case applies to walls that are relatively rigid and laterally supported at top and bottom and therefore unable to yield. The active earth pressure case applies to walls that are capable of yielding slightly away from the backfill by either sliding or rotating about the base. A conventional cantilevered retaining wall is an example of a wall that develops the active earth pressure case by yielding. In our opinion, the at-rest condition applies to the rigid walls of the pool, where no rotation is tolerable. The active condition is appropriate for conventional retaining walls that are free to rotate slightly.

Yielding and non-yielding walls can be designed using a lateral earth pressure based on an equivalent fluid having a unit weight of 35 and 55 pcf, respectively. The recommended lateral earth pressures are for level backfill and free-draining backfill conditions. Lateral earth pressures from seismic forces can be computed based on an equivalent fluid having a unit weight of 20 pcf and 55 pcf for the active and at-rest cases, respectively. The total seismic lateral earth pressure is the sum of the static and seismic pressures. In contrast to the static pressure, which is represented by a triangular pressure distribution that increases in the downward direction and the resultant force is applied at 1/3H, where H is the embedded height of the wall, the seismic pressure is applied as an inverted triangular pressure distribution with the maximum at the top of the backfill and the resultant force is applied at a distance of 0.6H up from the base of the backfilled wall.

Surcharge-induced lateral loads such as wheel loads associated with traffic on the backfill behind walls are not included. In this regard, heavy compactors and large pieces of construction equipment should not operate within a horizontal distance equal to the height of the embedded wall. Compaction close to the walls should be accomplished with hand-operated compactors.

6.5 Slab-on-Grade Concrete Support

To provide uniform support for the floor slab and a capillary break, we recommend that the floor slab is underlain by a minimum 6-inch-thick layer of granular base course. The base course material should consist of crushed rock of up to 1-inch maximum size, with less than about 5 percent passing the No. 200 sieve (washed analysis). This material should be placed in a single lift and compacted until well keyed using a minimum of four passes with a medium- to heavy-weight vibratory roller.

Floor slab subgrade preparation should be conducted in accordance with recommendations in Section 6.2.1, Site Preparation prior to placement of the granular base course.

For design, a modulus of subgrade reaction value, k_s of 200 pounds per cubic inch (pci) may be used to characterize the support of 6 inches of granular base course underlain by a firm, unyielding

granular subgrade. The modulus of subgrade reaction is based on a 1 foot by 1 foot plate load test. However, depending on how the slab load is applied, the value will have to be geometrically modified. The value should be adjusted for larger areas using the following expression for cohessionless soil:

$$\text{Modulus of Subgrade Reaction, } k_s = k\left(\frac{B+1}{2B}\right)^2 \text{ for cohessionless soil}$$

where: k_s = coefficient of vertical subgrade reaction for loaded area,
k = coefficient of vertical subgrade reaction for 1x1 square foot area,
B = width of area loaded, in feet

6.6 Final Grading

Final grading should be constructed and maintained to convey water away from foundation walls and backfill. Down spouts should discharge outside of the foundation backfill at least 10 feet away from the building. Irrigation above or near wall backfill should be minimized. We recommend that landscaped surfaces adjacent to buildings be sloped down away from the buildings at a minimum slope of 5 percent within a minimum of 10 feet of the building. Concrete flatwork or pavement adjacent to buildings should slope down away from the buildings at a slope of 1 percent or more.

6.7 Pavement

When confined, the gravel soils will provide good pavement support properties. For design purposes, we have assumed a California Bearing Ratio (CBR) value of 10 for the subgrade soils. Design traffic information has been estimated based on the anticipated usage for similar facilities. Based on our understanding of the proposed traffic and the anticipated subgrade soil types and conditions, the pavement sections presented on the following table are recommended. Pavement subgrade should be prepared and proof rolled prior placement of base course and pavement as described in Section 6.2.1 Site Preparation. The following parameters were used in the pavement design;

Pavement Design Parameters

Design Life	20 years
Initial Serviceability	4.5
Terminal Serviceability	2.5
Reliability	95%
Std Deviation - Flexible	0.4
Std Deviation - Rigid	0.35
AC Structural Coefficient	0.4
Untreated Road Base	0.10
Granular Subbase	0.08
Design CBR	10

A suitable pavement section resulting in adequate pavement performance is highly dependent on actual traffic loading [18kip equivalent single axle loads (ESAL's) especially for heavy truck traffic]. The designer/owner should choose the appropriate sections to meet the anticipated

traffic volume and life expectancy. The section capacity is reported as daily ESAL's, Equivalent 18kip Single Axle Loads. Typical light trucks impart 0.25 to 0.50 ESAL's per truck; medium sized trucks and school buses impart 1.0 to 1.5 ESAL's per truck; heavy trucks impart 2.0 to 2.56 ESAL's per truck. It takes approximately 1,200 passenger cars to impart 1 ESAL.

Flexible Pavement

Pavement Use	Design 18-kip ESALs	Layer Thickness (inches)	
		AC	Base Course
Auto and Light Truck Traffic	30,000	3	6
Main Drive Areas	200,000	4	8
Major Collector	700,000	5	8

All pavement materials and workmanship should conform to the current edition of the Utah Department of Transportation Standards and Specifications for Roadway and Bridge Construction.

The design pavement sections are dependent upon accurate understanding of accurate traffic information. If the design ESAL values are significantly different than those presented above, AMEC should be notified so that the pavement sections can be revised if necessary.

6.8 On-Site Storm Water Disposal

In general, the sand and gravel soils have excellent infiltration properties for disposal of storm water. For design an application rate of 0.6 gallons/min/ft^2 is recommended for the gravel soils. Silt and clay layers encountered in some of the borings at depths ranging from about 18 to 20 feet below the ground surface represent a potential barrier to downward infiltration of water. Depending on the volume of water injected, there is a potential for some lateral component of flow for infiltrating water that reaches these perching layers. Where perching layers are continuous, there is a potential for water to migrate laterally for a considerable distance, possibly off-site. Although potential layers were observed at similar depths in 5 of the 16 borings, it does not appear that the perching layers have sufficient lateral continuity to convey infiltrating water for large lateral distances. The effect of the perching layers or lenses would most likely be a lateral diversion of infiltrating water to more permeable zones where downward infiltration would resume.

6.9 Soil Corrosivity

Collected soil from the site was tested to determine pH and resistivity values. The measured pH values ranged from 7.0 to 7.5, while the measured resistivity values ranged from 325 to 1,520 ohm-cm. These values are indicative of a severely to moderately corrosive environment. Additionally, soluble chlorides ranged from 23 to 251 parts per million (ppm), which indicates moderate corrosive potential for metals. We recommend that special corrosion protection should be used for buried metal in contact with the on-site soils.

6.10 Cement Types

A test conducted on a sample of soil resulted in a water soluble sulfate concentration of 705 to 2,680 ppm. These values represents a moderate to severe potential for sulfate attack on concrete, and indicates that Type V cement may be used for concrete in contact with the on-site soils.

6.11 Seismic Considerations

6.11.1 General

The 2006 edition of the International Building Code (IBC) determines the seismic hazard for a site based upon regional mapping of bedrock accelerations prepared by the United States Geologic Survey (USGS) and the soil site class (formerly soil profile type). The USGS values are presented on maps incorporated into the IBC code and are also available based on latitude and longitude coordinates (grid points).

6.11.2 Site Class Definition

Based on the results of the subsurface explorations performed at the site, it is our opinion that this site is best characterized using Site Class D, (very dense soil and soft rock) as defined in Table 1615.1.1 of the 2006 edition of the IBC.

6.11.3 Ground Motions

Minimum ground motions for seismic design of structures in the IBC 2006 code are based on the maximum considered earthquake (MCE) for site class B adjusted to subsurface conditions at the site using amplification values based on the site class. Using 40.5458 degrees north latitude and 112.0042 degrees west longitude as the project coordinates, the following table summarizes the short and long period spectral accelerations for the maximum considered earthquake.

Spectral Acceleration Value	MCE[3] Ground Motion Site Class B g
0.2-Sec Spectral Acceleration (S_S)	1.04
1.0–Sec Spectral Acceleration (S_1)	0.40

For Site Class D and the above-referenced short and long term spectral acceleration values, amplification factors F_a = 1.082 and F_v = 1.598 can be used to compute maximum short period and long period spectral accelerations at the ground surface.

[3] Maximum Considered Earthquake

6.11.4 Faulting

Based upon our review of available geologic maps and data obtained in conjunction with this investigation, active faults are not mapped through or adjacent to the site. The nearest mapped active faults are the West Valley City fault zone and the Wasatch fault zone located approximately 8 miles northeast and 10 miles east of the project site, respectively.

6.11.5 Liquefaction

Liquefaction is a term used to describe a condition when saturated, loose, granular soils temporarily lose shear strength because of excess pore water pressure that develops as a result of strong ground shaking during an earthquake. For liquefaction to occur, a number of conditions are required. First, the granular soil must be in a loose condition and submerged below water, and second, the soils must be subjected to cyclical dynamic loading, such as strong ground shaking produced during an earthquake. It is generally accepted that liquefaction can occur at depths as great as 50 feet. Clay soils and dense granular materials are generally not susceptible to liquefaction.

Deep borings made for the geotechnical investigations for Plats 5 and 7 at Daybreak for Kennecott Land did not encounter groundwater to a depth of 122 feet below the ground surface. Because the groundwater table is greater than 50 feet and the sand and gravel soils are dense to very dense, it is our opinion that the risk of liquefaction and associated phenomena occurring at this site is very low.

7. DESIGN REVIEW AND CONSTRUCTION SERVICES

We welcome the opportunity to review and discuss construction plans and specifications for this project as they are being developed. In addition, AMEC should be retained to review all geotechnical-related portions of the plans and specifications to evaluate whether they are in conformance with the recommendations provided in our report. Additionally, to observe compliance with the intent of our recommendations, design concepts, and the plans and specifications, we are of the opinion that all construction operations dealing with earthwork and foundations should be observed by a representative of AMEC. Our construction-phase services will allow for timely design changes if site conditions are encountered that are different from those described in this report. If we do not have the opportunity to confirm our interpretations, assumptions, and analyses during construction, we cannot be responsible for the application of our recommendations to subsurface conditions that are different from those described in this report.

8. LIMITATIONS

This report has been prepared to aid the architect and engineer in the design of this project. The scope is limited to the specific project and location described herein, and our description of the project represents our understanding of the significant aspects of the project relevant to the design and construction of the earthwork, foundations, and floor slabs. In the event that any changes in the design and location of the building as outlined in this report are planned, we should be given the opportunity to review the changes and to modify or reaffirm the conclusions and recommendations of this report in writing.

The conclusions and recommendations submitted in this report are based on the data obtained from the borings and test pits made at the locations indicated on Figure 2, Site Plan, and from other sources of information discussed in this report. In the performance of subsurface investigations, specific information is obtained at specific locations at specific times. However, it is acknowledged that variations in soil conditions may exist between explorations. This report does not reflect any variations that may occur between these explorations. The nature and extent of variation may not become evident until construction. If, during construction, subsurface conditions are different from those encountered in the explorations, we should be advised at once so that we can observe and review these conditions and reconsider our recommendations where necessary.

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted engineering principles and practices at this time along the Wasatch Front.

We appreciate the opportunity to provide this service for you. If you have any questions or require additional information, please do not hesitate to contact us.

Respectfully submitted,
AMEC Earth & Environmental, Inc.

Reviewed by:

Daniel W. DeDen, PE
Geotechnical Engineer

David K. Fadling, PE
Senior Geotechnical Engineer

Addressee (3 hard copies and 1 pdf electronic copy)

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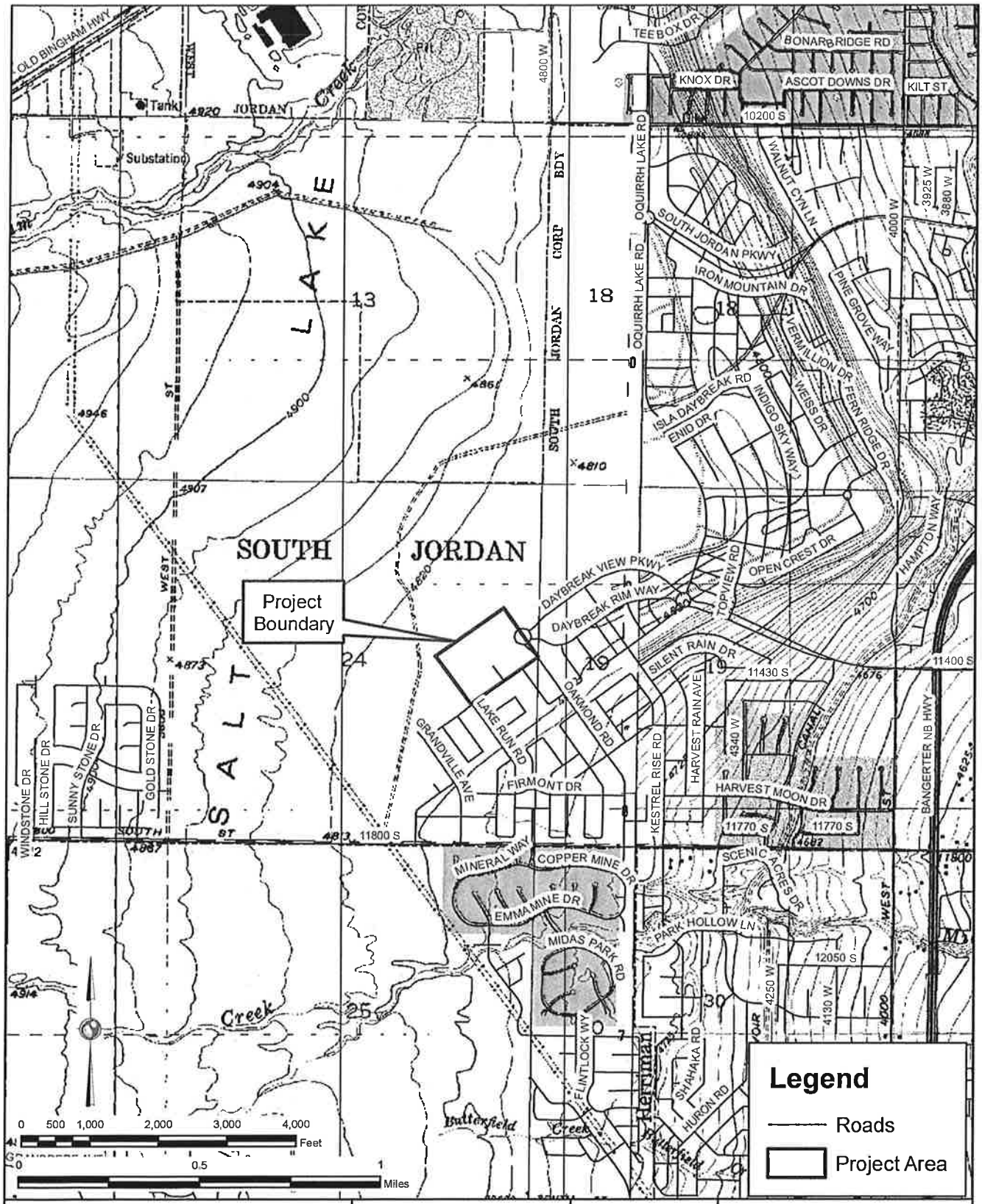

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Salt Lake City South and Magna Quadrangles
USGS 7.5 Minute Series (Topographic)

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PROJECT: Daybreak Apartments Daybreak View Pkwy & Oakmond Rd South Jordan, Utah	DWN BY: PWB	DATUM: NAD 83	DATE: 05/01/08
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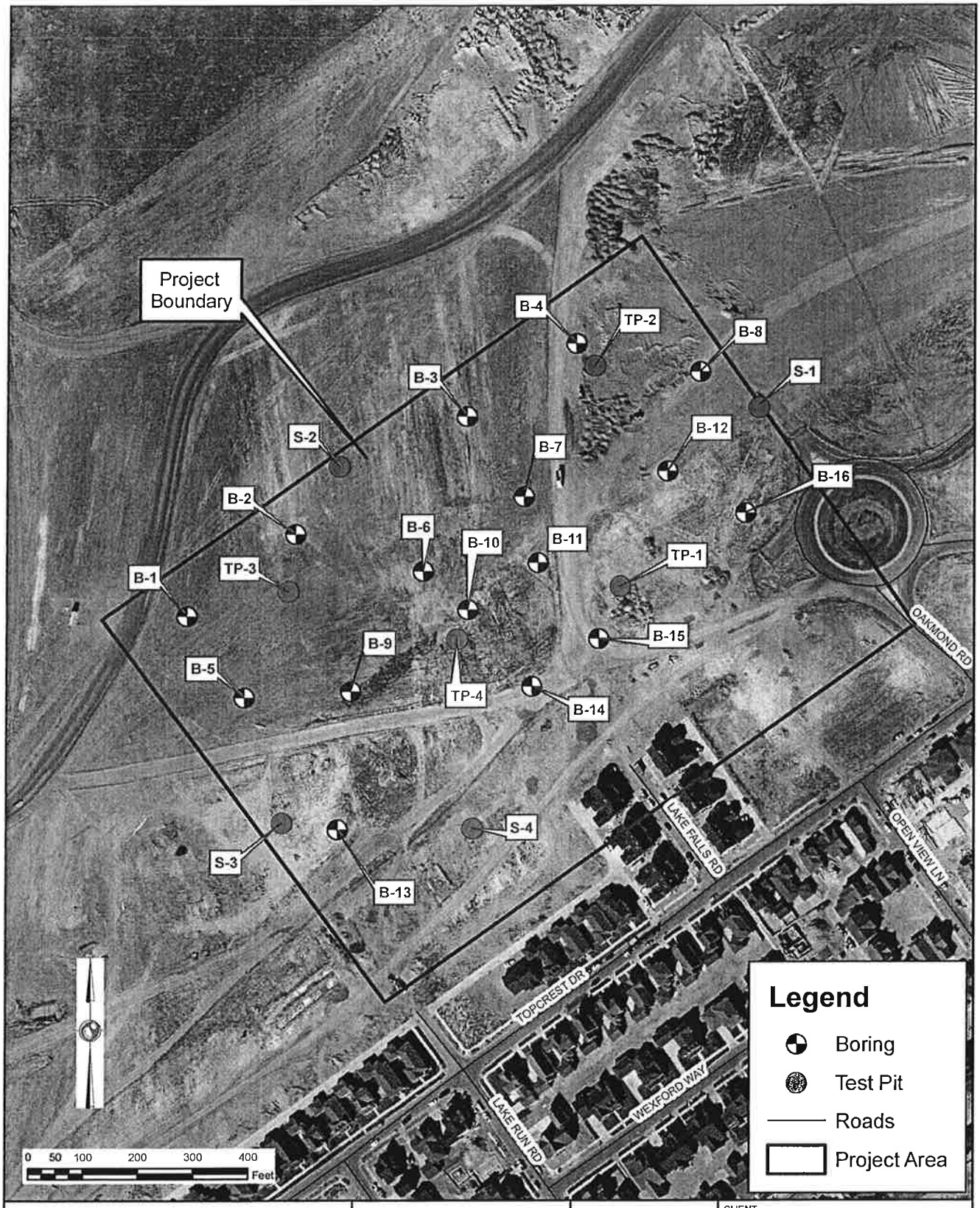

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Salt Lake City South and Magna Quadrangles
USGS 7.5 Minute Series (Topographic)

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PROJECT
Daybreak Apartments
Daybreak View Pkwy & Oakmond Rd
South Jordan, Utah

TITLE
VICINITY MAP

DWN BY:	DATUM:	DATE:
PWB	NAD 83	05/01/08
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PROJECTION:	SCALE:	FIGURE NO:
UTM 12 North	1:3,000	2

APPENDIX A

FIELD EXPLORATION

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APPENDIX A

FIELD EXPLORATION

General

Subsurface materials and conditions at the project site were investigated on March 31 through April 2, 2008, with 16 borings designated B-1 through B-16 and 8 test pits designated TP-1 through TP-4 and S-1 through S-4 on April 22, 2008. The approximate locations of the borings and test pits are shown on the Site Plan, Figure 2. The field exploration program was directed by an experienced member of our geotechnical staff who maintained a detailed log of the materials and conditions encountered in each of the test pits. The following sections provide a detailed description of the explorations, sampling, and field testing completed for this project.

Borings

The borings were drilled with a truck-mounted Simco 2800 drill rig provided and operated by A Cache Corporation of Mendon, Utah. The borings were advanced to depths ranging from 13.5 to 21.5 feet below existing site grades using hollow-stem auger drilling techniques. Disturbed samples were typically obtained from the borings at 5-foot intervals of depth using a 3.25-inch outside diameter (O.D.) split-barrel sampler with 2.5-inch OD inner rings. At the time of sampling, the Standard Penetration Test was conducted. This test consists of driving a standard split-spoon sampler into the soil a distance of 18 inches using a 140-lb hammer dropped from a height of 30 inches. The number of blows required to drive the sampler through each of three 6-inch intervals is recorded as the penetration resistance. The penetration resistance provides a measure of the relative density of the granular soils, such as sand and gravel, and the relative consistency, or stiffness, of cohesive soils, such as silt and clay. It should be recognized that the N-values tend to overestimate the relative density of coarse granular soils, such as those containing significant amounts of gravel- and cobble-sized particles. The soil samples obtained were carefully examined in the field, and representative portions were packaged and transported to our laboratory for further examination and physical testing.

Logs of the borings are shown on Figures B1 through B16, Log of Borings. Each log presents a descriptive summary of the various types of material encountered and notes the depth where the materials and/or characteristics of the materials change. To the right of the descriptive summary, the numbers and types of samples taken during the drilling operation are indicated. The terms used to describe the soils are defined on Figure A25, Soil Classification Chart & Legend.

Test Pits

The test pits were excavated using a JCB 214S backhoe provided and operated by Skyline Excavating of Bluffdale, Utah. A staff engineer provided by our firm directed the field work and maintained detailed logs of the materials and conditions disclosed during the course of the work. Representative soil samples were obtained from the excavations. The samples were examined, classified, and representative portions saved in bulk bags. All samples were returned to our laboratory for further examination and testing.

Detailed logs of test pits TP-1 through TP-4 and S-1 through S-4 are presented on Figures A17 through A24. Each log presents a descriptive summary of the various types of material encountered in the excavations and notes the depths where the materials and/or characteristics of the materials

change. The terms used to describe the soils are defined on Figure A25, Soil Classification Chart & Legend.

Each of the test pit excavations was backfilled with the excavated materials. An effort was made to compact the backfill in lifts with the excavator bucket; however, the degree of compaction of the backfill is unknown.

LOG OF BORING NO. B- 1

Project Name: **Day Break Apartments**
Location: **Daybreak View Pkwy and Oakmond Rd South Jordan, UT**
Project No: **8-817-005239** Sheet 1 of 1

Date Drilled: **3/31/08**
Rig Type: **SIMCO 2800**
Drilled By: **A Cache**
Logged By: **S. Clausen**

amec

Surface El.:

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Poorly Graded GRAVEL [GP] medium dense to dense, brown, dry, disturbed	1	29	18/18						
				2	64	18/18	111	3				
	5			3	60	NA						
					34	0/18						
	10		12.0									
			Silty SAND with Gravel [SM] medium dense, brown, moist									
	15			4	31	18/18						
			18.0									
			Poorly Graded GRAVEL with Sand [GP] dense, brown, moist, with cobble									
	20			5	68	NA	118	7				
			21.5									
			End of Boring at 21.5' No Groundwater Encountered									
	25											

Remarks:

Water Level Observations

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The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A1

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS GPJ LAGNNN10 GDT 5/9/08

LOG OF BORING NO. B- 2

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239 Sheet 1 of 1

Date Drilled: 3/31/08
Rig Type: SIMCO 2800
Drilled By: A Cache
Logged By: S. Clausen

amec

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Surface El.:									
			Sandy SILT with Gravel [ML] dense, brown, dry to moist		86	0/18						
			1.5									
			Poorly Graded GRAVEL with Sand [GP] medium dense, brown, dry to moist	1	59	18/18	107	2	2	NP	NP	
	5			2	41	18/18						
	10			3	50	NA	111	4				
			13.0									
			Silty SAND with Gravel [SM] medium dense, brown, dry									
	15			4	32	NA						
			16.5									
			End of Boring at 16.5' No Groundwater Encountered									
	20											
	25											

Remarks:

Water Level Observations

The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A2

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS GPJ LAGNNN10 GDT 5/9/08

LOG OF BORING NO. B- 3

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239 Sheet 1 of 1

Date Drilled: 3/31/08
Rig Type: SIMCO 2800
Drilled By: A Cache
Logged By: S. Clausen

amec

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Surface El.:									
			Clayey GRAVEL [GC] loose, brown, fill	1	12	12/18						
				2	14	18/18	104	19				
	3.0		**Gravelly SILT [ML]** medium dense, brown, dry									
	5			3	28	18/18						
	8.0		**Poorly Graded GRAVEL with Sand [GP]** medium dense, brown, dry, FeO Stain									
	10			4	50	18/18	109	4	5			
	15			5	61	18/18						
	18.0		**Poorly Graded SAND with Gravel [SP]** medium dense, brown, moist									
	20			6	24	18/18	92	10	43			
	21.5		End of Boring at 21.5' No Groundwater Encountered									
	25											

Remarks:

Water Level Observations

The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A3

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS.GPJ LAGNNN10.GDT 5/9/08

LOG OF BORING NO. B- 4

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239 Sheet 1 of 1

Date Drilled: 3/31/08
Rig Type: SIMCO 2800
Drilled By: A Cache
Logged By: S. Clausen

amec

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Surface El.:									
			Clayey GRAVEL [GC] medium dense, brown, dry to moist, fill	1	30	9/12						
			2.5									
			Poorly Graded GRAVEL with Sand [GP] medium dense, brown, dry	2	23	12/18		9				
	5			3	61	18/18						
			well rounded gravels with many angular crushed grains	4	45	18/18	109	3	4			
	10		12.0									
			Poorly Graded GRAVEL with Sand [GP] medium dense, brown, moist									
	15			5	44	18/18						
			16.5									
			End of Boring at 16.5' No Groundwater Encountered									
	20											
	25											

Remarks:

Water Level Observations

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The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A4

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS.GPJ LAGNNN10.GDT 5/9/08

LOG OF BORING NO. B- 5

Project Name: **Day Break Apartments**
Location: **Daybreak View Pkwy and Oakmond Rd**
South Jordan, UT
Project No: **8-817-005239** Sheet 1 of 1

Date Drilled: **4/1/08**
Rig Type: **SIMCO 2800**
Drilled By: **A Cache**
Logged By: **S. Clausen**

amec

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Surface El.:									
			Poorly Graded GRAVEL with Sand [GP] loose to medium dense, brown, dry	1	17	18/18						
				2	44	18/18						
	5			3	37	18/18	115	5	4			
				4	43	18/18						
	10		13.0									
			Silty SAND with Gravel [SM] loose, brown, moist	5	11	18/18	97	27				
	15		16.5									
			End of Boring at 16.5'									
			No Groundwater Encountered									
	20											
	25											

Remarks:

Water Level Observations

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The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A5

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS.GPJ LAGNNN10.GDT 5/9/08

LOG OF BORING NO. B- 6

Project Name: **Day Break Apartments**
Location: **Daybreak View Pkwy and Oakmond Rd South Jordan, UT**
Project No: **8-817-005239** Sheet 1 of 1

Date Drilled: **4/1/08**
Rig Type: **SIMCO 2800**
Drilled By: **A Cache**
Logged By: **S. Clausen**

amec

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Surface El.:									
			Poorly Graded GRAVEL with Sand [GP] loose, brown, moist, fill	1	15	18/18		3				
			1.5									
			Clayey GRAVEL [GC] medium dense, brown, moist	2	26	18/18						
	5			3	27	NA		8				
	10			4	19	NA						
	15			5	37	NA	121	5				
			18.0									
			Lean CLAY [CL] medium stiff, gray, moist									
	20			6	7	NA						
			21.5									
	25		End of Boring at 21.5' No Groundwater Encountered									

Remarks:

Water Level Observations	
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The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A6

AMEC SLC BORING 1 BASE 87-5239.BORING LOGS.GPJ LAGNNN10.GDT 5/9/08

LOG OF BORING NO. B- 7

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239 Sheet 1 of 1

Date Drilled: 4/1/08
Rig Type: SIMCO 2800
Drilled By: A Cache
Logged By: S. Clausen

amec

Surface El.:

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Poorly Graded GRAVEL with Sand [GP] loose, brown, dry to moist, fill	1	19	18/18						
			2.5									
			Clayey GRAVEL [GC]	2	29	18/18	111	7	11			
	5			3	25	18/18						
	10			4	29	18/18	108	9				
	15			5	20	18/18						
			16.5									
			End of Boring at 16.5' No Groundwater Encountered									
	20											
	25											

Remarks:

Water Level Observations	
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The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A7

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS GPJ LAGNNN10 GDT 5/9/08

LOG OF BORING NO. B- 8

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239 Sheet 1 of 1

Date Drilled: 4/2/08
Rig Type: SIMCO 2800
Drilled By: A Cache
Logged By: S. Clausen

amec

Surface El.:

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Clayey GRAVEL [GC] loose, brown, dry to moist, debris and boards, fill	1	20	18/18						
			medium dense									
			3.0									
			Clayey GRAVEL [GC] loose to medium dense, red brown, FeO Stain	2	30	18/18	97	9				
	5			3	34	18/18						
	10			4	24	18/18	109	10	9			
	15			5	22	18/18						
			18.0									
			Poorly Graded SAND with Gravel [SP] loose, brown, wet									
	20			6	18	18/18	98	23				
			21.5									
			End of Boring at 21.5' No Groundwater Encountered									
	25											

Remarks:

Water Level Observations

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The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A8

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS GPJ LAGNNN10 GDT 5/9/08

LOG OF BORING NO. B- 9

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239 Sheet 1 of 1

Date Drilled: 4/1/08
Rig Type: SIMCO 2800
Drilled By: A Cache
Logged By: S. Clausen

amec

Surface El.:

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
	0		**Poorly Graded GRAVEL with Silt [GP-GM]** loose, brown, dry	1	17	18/18						
				2	25	18/18						
	5			3	15	18/18		4	7	NP	NP	
				4	23	18/18						
	10											
	15			5	18	18/18		5				
			16.5									
			End of Boring at 16.5' No Groundwater Encountered									
	20											
	25											

Remarks:

Water Level Observations	
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The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A9

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS GPJ LAGNN10 GDT 5/9/08

LOG OF BORING NO. B-10

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239 Sheet 1 of 1

Date Drilled: 4/1/08
Rig Type: SIMCO 2800
Drilled By: A Cache
Logged By: S. Clausen

amec

Surface El.:

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Silty GRAVEL [GM] loose, brown, dry, with organics, fill	1	17	18/18						
				2	37	18/18		4	4			
	4.0		**Clayey GRAVEL [GC]** medium dense, brown, moist									
	5			3	22	18/18						
	10			4	24	18/18	98	8				
	15			5	31	18/18						
	18.0		**Lean CLAY [CL]** medium stiff, gray, moist									
	20			6	7	18/18	79	38		44	25	
	21.5		End of Boring at 21.5' No Groundwater Encountered									
	25											

Remarks:

Water Level Observations

The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A10

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS GPJ LAGNNN10.GDT 5/9/08

LOG OF BORING NO. B-11

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239 Sheet 1 of 1

Date Drilled: 4/2/08
Rig Type: SIMCO 2800
Drilled By: A Cache
Logged By: S. Clausen

amec

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Surface El.:									
			Clayey GRAVEL [GC] medium dense, brown, dry to moist, with sand, fill	1	31	18/18						
				2	25	18/18		6				
	5		5.0									
			Clayey GRAVEL with Sand [GC] medium dense	3	18	18/18						
	10			4	32	15/18		5	5			
	15			5	30	18/18						
			16.5 End of Boring at 16.5' No Groundwater Encountered									
	20											
	25											

Remarks:

Water Level Observations

The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A11

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS GPJ LAGNNN10 GDT 5/9/08

LOG OF BORING NO. B-12

Project Name: **Day Break Apartments**
Location: **Daybreak View Pkwy and Oakmond Rd**
South Jordan, UT
Project No: **8-817-005239** Sheet 1 of 1

Date Drilled: **4/2/08**
Rig Type: **SIMCO 2800**
Drilled By: **A Cache**
Logged By: **S. Clausen**

amec

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Surface El.:									
			Poorly Graded GRAVEL with Sand [GP] medium dense, brown, dry to moist, fill	1	23	18/18						
				2	30	15/18		5				
			4.0									
	5		**Clayey GRAVEL [GC]** medium dense, red brown, moist, iron oxide stained	3	34	18/18						
	10			4	29	18/18		9				
	15		tan, moist to wet	5	41	18/18						
			18.0									
	20		**Sandy SILT with Gravel [ML]** loose, tan, iron oxide stained	6	17	18/18						
			21.5									
	25		End of Boring at 21.5' No Groundwater Encountered									

Remarks:

Water Level Observations

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The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A12

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS.GPJ LAGNNN10.GDT 5/9/08

LOG OF BORING NO. B-13

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239 Sheet 1 of 1

Date Drilled: 4/1/08
Rig Type: SIMCO 2800
Drilled By: A Cache
Logged By: S. Clausen

amec

Surface El.:

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Sandy SILT with Gravel [ML] medium dense, brown, dry to moist, fill	1	45	18/18						
			2.0									
			Silty GRAVEL with Sand [GM] medium dense, brown, dry to moist	2	37	18/18		4				
	5		5.0									
			Clayey GRAVEL [GC] medium dense, brown, dry to moist	3	70	18/18						
	10			4	61	18/18		6	10			
	15		15.0									
			Poorly Graded SAND [SP] medium dense, tan, moist, iron oxide stained	5	34	18/18						
	20		20.0									
			Fat CLAY [CH] soft, tan, moist, iron oxide stained	6	4	18/18	65	57	97	50	24	
			21.5									
	25		End of Boring at 21.5' No Groundwater Encountered									

Remarks:

Water Level Observations

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The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A13

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS GPJ LAGNNN10 GDT 5/9/08

LOG OF BORING NO. B-14

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239 Sheet 1 of 1

Date Drilled: 4/2/08
Rig Type: SIMCO 2800
Drilled By: A Cache
Logged By: S. Clausen

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Surface El.:									
			Clayey GRAVEL [GC] medium dense, brown, dry to moist	1	54	18/18						
			loose	2	18	18/18	106	10	20			
	5			3	45	18/18						
	10			4	51	18/18		3				
	15			5	23	18/18						
			16.5 End of Boring at 16.5' No Groundwater Encountered									
	20											
	25											

Remarks:

Water Level Observations

The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A14

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS GPJ LAGNNN10.GDT 5/9/08

LOG OF BORING NO. B-15

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239 Sheet 1 of 1

Date Drilled: 4/2/08
Rig Type: SIMCO 2800
Drilled By: A Cache
Logged By: S. Clausen

amec

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Surface El.:									
			Poorly Graded GRAVEL with Sand [GP] loose, brown, dry to moist, fill	1	19	18/18						
				2	45	18/18						
	5		5.0									
			Clayey GRAVEL [GC] medium dense, brown, dry to moist	3	66	18/18		7				
			8.0									
			Poorly Graded SAND with Gravel [SP] medium dense, brown, dry to moist									
	10			4	43	18/18						
			13.0									
			Poorly Graded SAND [SP] medium dense, tan, dry to moist									
	15			5	26	18/18						
			18.0									
			Lean CLAY [CL] med stiff, brown, moist									
	20			6	6	18/18	77	41				
			21.5									
			End of Boring at 21.5' No Groundwater Encountered									
	25											

Remarks:

Water Level Observations

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The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A15

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS GPJ LAGNNN10.GDT 5/9/08

LOG OF BORING NO. B-16

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239 Sheet 1 of 1

Date Drilled: 4/2/08
Rig Type: SIMCO 2800
Drilled By: A Cache
Logged By: S. Clausen

amec

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Surface El.:									
			Clayey GRAVEL [GC] medium dense, brown, dry to moist, fill	1	36	18/18	106	9	38			
			2.0									
			Sandy SILT with Gravel [ML] medium dense, brown, dry to moist, native	2	54	18/18						
	5		5.0									
			Poorly Graded GRAVEL with Sand [GP] medium dense, brown, dry to moist	3	62	18/18	123	4				
	10			4	79	18/18						
				5	156	NR						
			13.5									
			Auger Refusal at 12.0' End of Boring at 13.5' No Groundwater Encountered									
	15											
	20											
	25											

Remarks:

Water Level Observations

The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A16

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS GPJ LAGNNN10 GDT 5/13/08

LOG OF BORING NO. TP- 1

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239 Sheet 1 of 1

Date Drilled: 4/22/08
Rig Type: JCB 214S
Drilled By: Skyline
Logged By: R. Buxton

amec

Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Surface El.:									
			Layered Silty Sandy Gravel to Clayey Gravel [GM-GC] medium dense, brown to dark brown, slightly moist to moist, fill									
	5		5.0									
			Silty GRAVEL with Sand [GM] medium dense, slightly cemented at 5.5 feet									
			8.0									
			End of Test Pit at 8.0'									
			No Groundwater Encountered									
			No Groundwater Encountered									
	10											
	15											
	20											
	25											

Remarks:

Water Level Observations

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The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A17

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS.GPJ LAGNNN10.GDT 5/9/08

LOG OF BORING NO. TP- 2

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239 Sheet 1 of 1

Date Drilled: 4/22/08
Rig Type: JCB 214S
Drilled By: Skyline
Logged By: R. Buxton

amec

Elevation, feet	Depth, feet	Graphic Log	Surface El.: MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
	0		**Layered Silty Sandy GRAVEL and Clayey GRAVEL [GP-GC]** medium dense, brown to dark brown, slightly moist to moist, fill, mottled									
	2.5		**Silty GRAVEL [GM]** medium dense, yellow brown, moist, native									
	7.0		End of Test Pit at 7.0' No Groundwater Encountered Major Sidewall Caving No Groundwater Encountered									
	5											
	10											
	15											
	20											
	25											

Remarks:

Water Level Observations

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The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A18

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS.GPJ LAGNNN10.GDT 5/9/08

LOG OF BORING NO. TP- 3

Project Name: **Day Break Apartments**
Location: **Daybreak View Pkwy and Oakmond Rd South Jordan, UT**
Project No: **8-817-005239** Sheet 1 of 1

Date Drilled: **4/22/08**
Rig Type: **JCB 214S**
Drilled By: **Skyline**
Logged By: **R. Buxton**

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Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Surface El.:									
			Sandy GRAVEL [GP] medium dense, light brown, slightly moist, native, some silt, gravels are medium to coarse, subangular, slight calcite cementation between grains									
	4.0		End of Test Pit at 4.0' No Groundwater Encountered Slight Sidewall Caving No Groundwater Encountered									
	5											
	10											
	15											
	20											
	25											

Remarks:

Water Level Observations

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The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A19

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS.GPJ LAGNNN10.GDT 5/9/08

LOG OF BORING NO. TP- 4

Project Name: **Day Break Apartments**
Location: **Daybreak View Pkwy and Oakmond Rd**
South Jordan, UT
Project No: **8-817-005239** Sheet 1 of 1

Date Drilled: **4/22/08**
Rig Type: **JCB 214S**
Drilled By: **Skyline**
Logged By: **R. Buxton**

amec

Elevation, feet	Depth, feet	Graphic Log	Surface El.: MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Clay and Clayey GRAVEL [GC] medium dense, dark brown, moist, fill, topsoil, scrubbed vegetation, layers are 2" to 12"									
			3.0									
	5		**Silty GRAVEL to Gravelly SILT [ML]** medium dense, brown to orange, moist, native, FeO Stain, rare pinholes									
			5.5									
			Silty GRAVEL [GM] medium dense, brown to orange, moist, FeO Stain									
			7.5									
			End of Test Pit at 7.0' No Groundwater Encountered Major Sidewall Caving No Groundwater Encountered									
	10											
	15											
	20											
	25											

Remarks:

Water Level Observations	
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The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A20

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS GPJ LAGNNN10 GDT 5/5/08

LOG OF BORING NO. S- 1

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239 Sheet 1 of 1

Date Drilled: 4/22/08
Rig Type: JCB 214S
Drilled By: Skyline
Logged By: R. Buxton

amec

Elevation, feet	Depth, feet	Graphic Log	Surface El.: MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Silty, Clayey Gravel [GC-GM] medium dense, brown to dark brown, damp, fill, layered									
			2.5									
			Silty GRAVEL [GM] medium dense, yellow brown, moist, slightly cemented	1								
			4.0									
			End of Test Pit at 4.0' No Groundwater Encountered									
	5											
	10											
	15											
	20											
	25											

Remarks:

Water Level Observations

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The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A21

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS GPJ LAGNNN10 GDT 5/9/08

LOG OF BORING NO. S- 2

Project Name: **Day Break Apartments**
Location: **Daybreak View Pkwy and Oakmond Rd**
South Jordan, UT
Project No: **8-817-005239** Sheet 1 of 1

Date Drilled: **4/22/08**
Rig Type: **JCB 214S**
Drilled By: **Skyline**
Logged By: **R. Buxton**

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Elevation, feet	Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Surface El.:									
			Sandy, clayey GRAVEL [GP-GC] medium dense, light brown to dark brown, damp, layered									
			1.5									
			Poorly Graded GRAVEL with Sand [GP] medium dense, brown, dry to moist, native	1								
			4.0									
			End of Test Pit at 4.0'									
			No Groundwater Encountered									
	5											
	10											
	15											
	20											
	25											

Remarks:

Water Level Observations

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The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A22

AMEC SLC.BORING 1 BASE 87-5239.BORING LOGS.GPJ LAGNNN10.GDT 5/9/08

LOG OF BORING NO. S- 3

Project Name: **Day Break Apartments**
Location: **Daybreak View Pkwy and Oakmond Rd South Jordan, UT**
Project No: **8-817-005239** Sheet 1 of 1

Date Drilled: **4/22/08**
Rig Type: **JCB 214S**
Drilled By: **Skyline**
Logged By: **R. Buxton**

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Elevation, feet	Depth, feet	Graphic Log	Surface El.: MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
			Silty, Clayey GRAVEL [GM-GC] medium dense, light brown to dark brown, moist, layered fill									
			2.0									
			Clayey GRAVEL [GC] medium dense, dark brown, moist, medium to high plasticity, native	1								
			4.0									
	5		**Silty GRAVEL [GM]** medium dense, light brown, moist, non-plastic									
			8.0									
			End of Test Pit at 8.0' No Groundwater Encountered									
	10											
	15											
	20											
	25											

Remarks:

Water Level Observations	
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▼	

The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A23

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS.GPJ LAGNNN10.GDT 5/9/08

LOG OF BORING NO. S- 4

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239 Sheet 1 of 1

Date Drilled: 4/22/08
Rig Type: JCB 214S
Drilled By: Skyline
Logged By: R. Buxton

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Elevation, feet	Depth, feet	Graphic Log	Surface El.: MATERIAL DESCRIPTION	Samples	Penetration Blows / Foot	Recovery, in	Unit Dry Weight, pcf	Water Content, %	% Passing No. 200 Sieve	Liquid Limit	Plasticity Index	REMARKS
	0		**Silty GRAVEL [GM]** medium dense, brown, moist, Iron Oxide stained	1					7			
	4.0		End of Test Pit at 4.0' No Groundwater Encountered									
	5											
	10											
	15											
	20											
	25											

Remarks:

Water Level Observations

The discussion in the report is necessary for a proper understanding of the nature of subsurface materials.

Figure A24

AMEC SLC BORING 1 BASE 87-5239 BORING LOGS GPJ LAGNN10 GDT 5/9/08

SOIL CLASSIFICATION CHART & LEGEND

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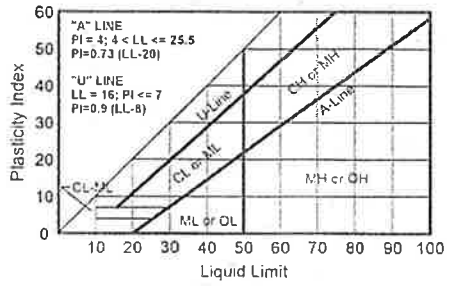
MAJOR DIVISIONS				GRAPHIC SYMBOL	GROUP SYMBOL	TYPICAL NAMES
COARSE-GRAINED SOILS Less than 50% passes No. 200 sieve	GRAVELS (50% or less of coarse fraction passes No. 4 sieve)	CLEAN GRAVELS (Less than 5% passing No. 200 sieve)			GW	Well graded gravels, gravel-sand mixtures, or sand-gravel-cobble mixtures
					GP	Poorly graded gravels, gravel-sand mixtures, or sand-gravel-cobble mixtures
		GRAVELS WITH FINES (More than 12% Passing No. 200 sieve)	Limits plot below "A" line & hatched zone on plasticity chart		GM	Silty gravels, gravel-sand-silt mixtures
			Limits plot above "A" line & hatched zone on plasticity chart		GC	Clayey gravels, gravel-sand-silt mixtures
	SANDS (50% or more of coarse fraction passes No. 4 sieve)	CLEAN SANDS (Less than 5% passing No. 200 sieve)			SW	Well graded sands, gravelly sands
					SP	Poorly graded sands, gravelly sands
		SANDS WITH FINES (More than 12% Passing No. 200 sieve)	Limits plot below "A" line & hatched zone on plasticity chart		SM	Silty sands, sand-silt mixtures
			Limits plot above "A" line & hatched zone on plasticity chart		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS 50% or more passes No. 200 sieve	SILTS Limits Plot Below A Line	SILTS OF LOW PLASTICITY (Liquid Limit less than 50)			ML	Inorganic silts, clayey silts of low to medium plasticity
		SILTS OF HIGH PLASTICITY (Liquid Limit 50 or more)			MH	Inorganic silts, micaceous or diatomaceous silty soils, elastic silts
	CLAYS Limits Plot Above A Line	CLAYS OF LOW PLASTICITY (Liquid Limit less than 50)			CL	Inorganic clays of low to medium plasticity, gravelly, sandy, and silty clays
		CLAYS OF HIGH PLASTICITY (Liquid Limit 50 or more)			CH	Inorganic clays of high plasticity, fat clays, sandy clays of high plasticity
	ORGANICS SILTS AND CLAYS	ORGANIC SILTS AND CLAYS OF LOW PLASTICITY (Liquid Limit less than 50)			OL	Organic silts and clays of low to medium plasticity, sandy organic silts and clays
		ORGANIC SILTS OF HIGH PLASTICITY (Liquid Limit 50 or more)			OH	Organic silts and clays of high to medium plasticity, sandy organic silts and clays
ORGANIC SOILS		PRIMARILY ORGANIC MATTER (dark in color and organic odor)			PT	Peat

NOTE: Coarse-grained soils with between 5% and 12% passing the No. 200 sieve and fine-grained soils with limits plotting in the gray zone on the plasticity chart have dual classifications.

- D - Dames and Moore Sampler
- S - Split Spoon Sampler (SPT)
- T - Pushed Thin Walled Tube
- GS - Grab Sample
- BS - Bulk Sample
- DT - Driven Thin Wall
- C - Rock Core Sample
- CS - Continuous Soil Sample
- R - California Ring Sampler
- Water Level at Time of Drilling
- Stabilized Water Level
- CBR - California Bearing Ratio
- PP - Pocket Penetrometer, tsf
- ST - Swell Test
- TOR - Torvane Shear, psf
- UC - Unconfined Compression, psf
- NR - No Recovery

PLASTICITY CHART



Material	Particle Size	
	mm	Sieve sizes
Boulders	304.8 to 914.4	12 in to 36 in
Cobble	76.2 to 304.8	3 in to 12 in
Gravel		
Fine	4.76 to 19.1	3/4 in to 3 in
Coarse	19.1 to 76.2	#4 to 3/4 in
Sand		
Fine	2.00 to 4.76	#10 to #4
Medium	0.42 to 2.00	#40 to #10
Coarse	0.074 to 0.42	#200 to #40
Silt & Clay	<0.074	<#200

Figure A25

APPENDIX B

LABORATORY TESTING

APPENDIX B

LABORATORY TESTING

General

All samples obtained from the field were transported to our laboratory for examination and testing. The physical characteristics were noted, and the field classifications were modified where necessary. The laboratory testing program was conducted to provide data for our engineering analyses. The laboratory program included determinations of natural moisture content, grain size distribution, washed sieve analyses, and analytical tests. The following sections describe the testing program in more detail. Results of the laboratory tests are presented in tabular form on the Tabulation of Test Data, Appendix B. Grain size distribution test results are presented in graphical form on the Grain Size Distribution Graphs, Appendix B.

Natural Moisture Content

Natural moisture content determinations were made in conformance with ASTM D 2216. The results are presented on the boring and test pit logs, Figures A1 through A24.

Grain Size Distribution

Determinations of grain size distribution were conducted on selected samples of the on-site soil in general conformance with ASTM C136/C117. The oven-dried samples were weighed and vibrated through a series of different size sieves. The individual sieves were then weighed in order to calculate the percentage of gravel, sand and fine grained soil.

Percent Passing the No. 200 Sieve (Washed Sieve Analysis)

The silt and clay content (percent passing the No. 200 sieve) was evaluated for selected soil samples in general conformance with ASTM D 1140. Oven-dried samples were weighed and placed on the No. 200 sieve. The silt and clay were washed through the sieve, and the sample remaining on the sieve was oven-dried and weighed. The change in sample weight is used to calculate the percent of material passing through the No. 200 sieve.

Atterberg Limits

Atterberg Limit tests were performed in general accordance with ASTM D 4318 on several representative samples of the native soils encountered at the site to verify field classifications.

Analytical Tests

Representative samples of soil collected from the site were tested to determine pH, resistivity, and soluble sulfate concentration. The results of the testing performed by TEI Testing Services, Inc. of Salt Lake City, Utah is presented on the Tabulation of Test Data, Appendix B.

Tabulation of Test Data

amec

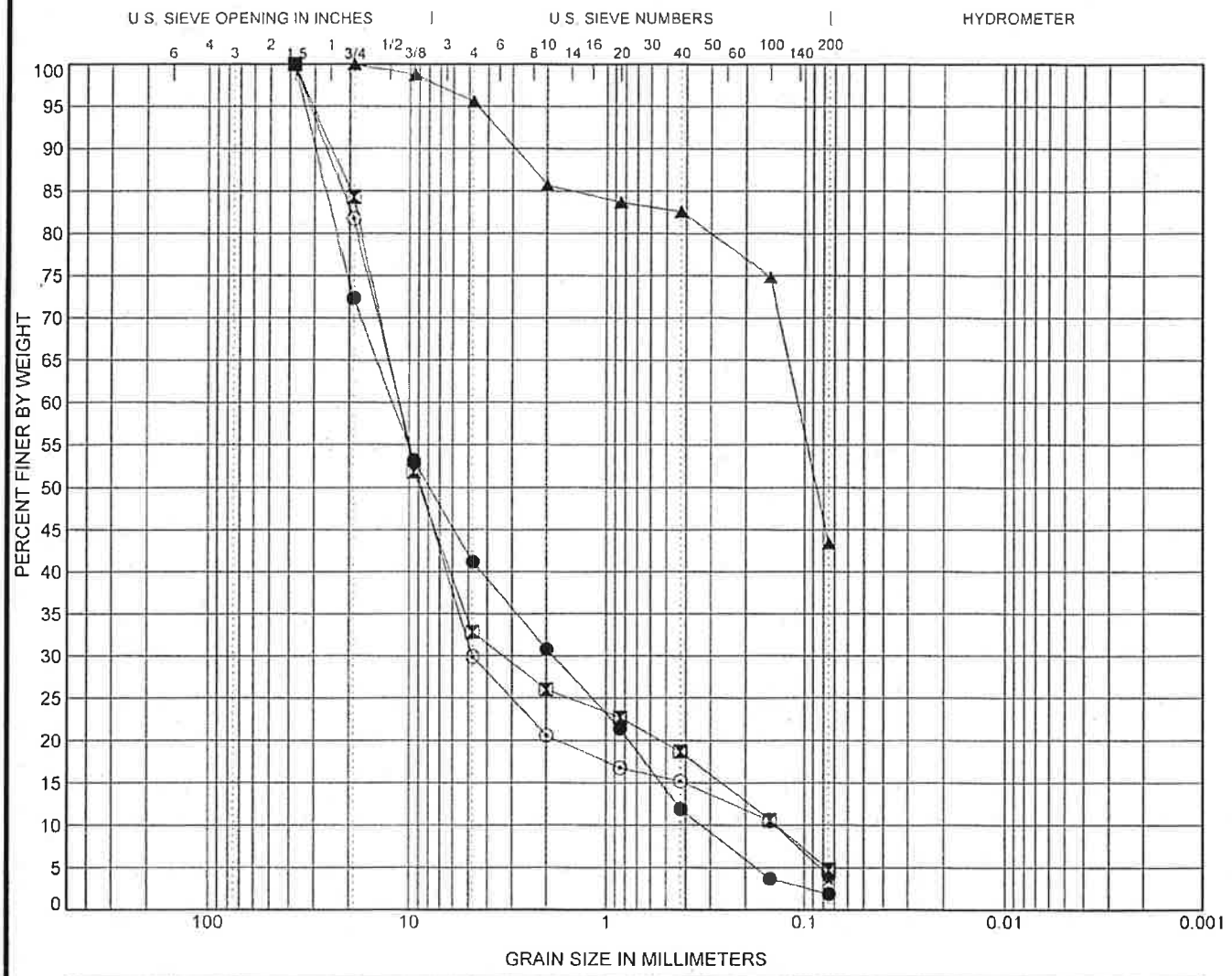
Sample Identification	Depth Interval, ft	Dry Density, psf	Moisture Content, %	Grain Distribution, %			Liquid Limit	Plastic Limit	Plasticity Index	Resistivity	pH	Sulfates, ppm	Chlorides, ppm	California Bearing Ratio	Soil Classification
				Gravel	Sand	Silt/Clay									
B- 2, 1	2.0 - 3.5	106.6	2.1	59	39	2	NP	NP	NP	--	--	--	--	--	POORLY GRADED GRAVEL with SAND (GP)
B- 3, 4	10.0 - 11.5	108.8	4	67	28	5	--	--	--	--	--	--	--	--	POORLY GRADED GRAVEL with SAND (GP)
B- 3, 6	20.0 - 21.5	92.1	10.1	4	53	43	--	--	--	--	--	--	--	--	--
B- 4, 4	10.0 - 11.5	108.6	3	--	--	4	--	--	--	--	--	--	--	--	--
B- 5, 3	5.0 - 6.5	114.9	5.3	70	26	4	--	--	--	--	--	--	--	--	POORLY GRADED GRAVEL with SAND (GP)
B- 7, 2	2.5 - 4.0	110.6	6.8	78	11	11	--	--	--	--	--	--	--	--	--
B- 8, 4	10.0 - 11.5	108.9	9.5	81	10	9	--	--	--	--	--	--	--	--	--
B- 9, 3	5.0 - 6.5	--	3.7	83	10	7	NP	NP	NP	--	--	--	--	--	POORLY GRADED GRAVEL with SILT (GP-GM)
B-10, 2	2.5 - 4.0	--	3.8	--	--	4	--	--	--	--	--	--	--	--	--
B-10, 6	20.0 - 21.5	78.9	37.6	--	--	--	44	19	25	--	--	--	--	--	--
B-11, 4	10.0 - 11.5	--	5.2	83	12	5	--	--	--	--	--	--	--	--	--
B-13, 4	10.0 - 11.5	--	6	72	18	10	--	--	--	--	--	--	--	--	--
B-13, 6	20.0 - 21.5	64.5	56.9	--	--	97	50	26	24	--	--	--	--	--	FAT CLAY (CH)
B-14, 2	2.5 - 4.0	106.3	10	72	8	20	--	--	--	--	--	--	--	--	--
B-16, 1	0.0 - 1.5	105.7	9.1	43	19	38	--	--	--	--	--	--	--	--	--
S- 2, 1	1.5 - 2.0	--	--	--	--	--	--	--	--	1520	7	705	23.4	--	--
S- 4, 1	0.0 - 4.0	--	--	90	3	7	--	--	--	325	7.5	2680	251	--	--

Project Name: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239

Samples tested for moisture content or dry unit weight only are not included in this tabulation, but can be found on individual logs.

GRAIN SIZE DISTRIBUTION

Project: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239



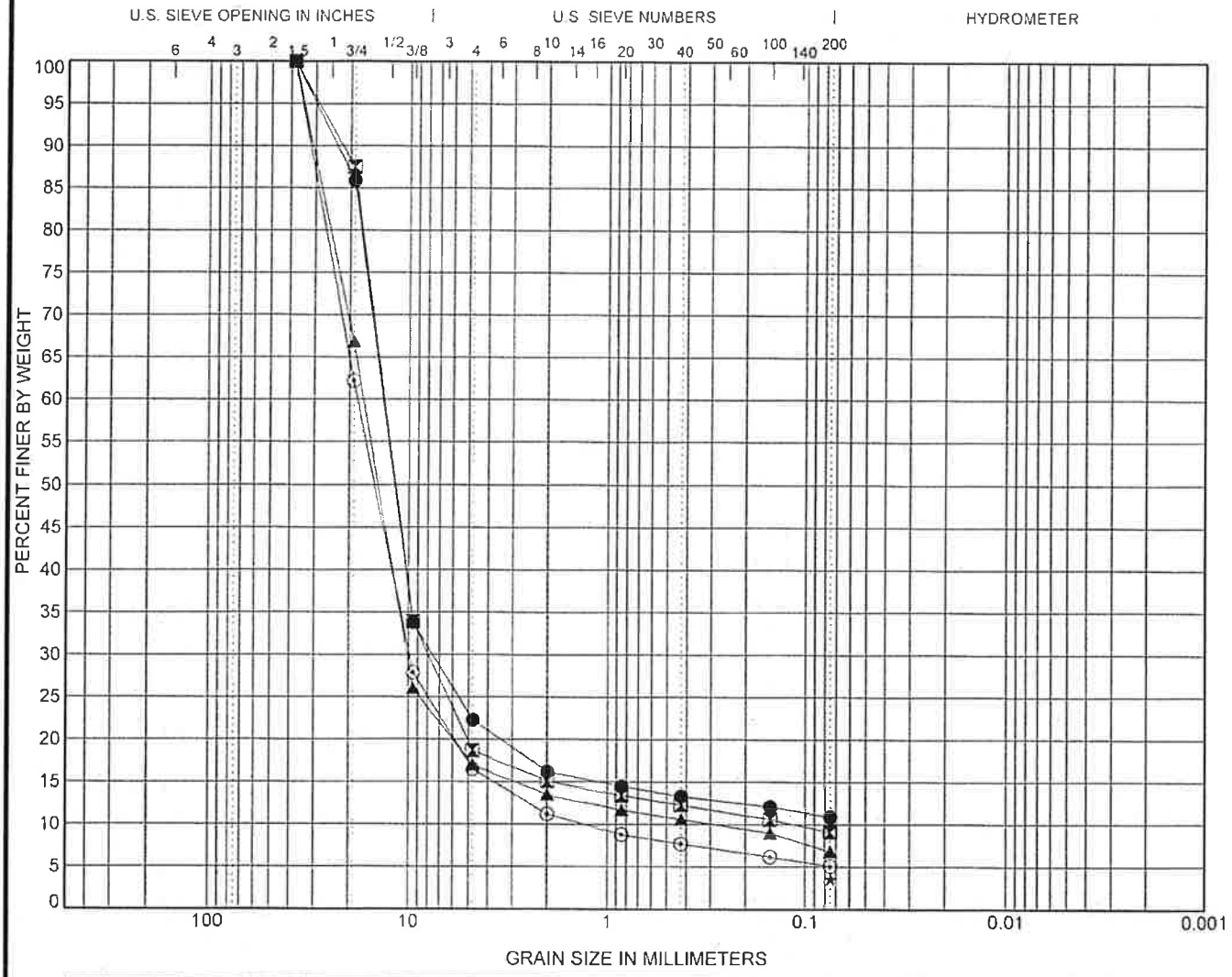
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	B- 2	2.0	POORLY GRADED GRAVEL with SAND(GP)	NP	NP	NP	0.85	36.49
⊠	B- 3	10.0	POORLY GRADED GRAVEL with SAND(GP)				7.01	81.02
▲	B- 3	20.0						
★	B- 4	10.0						
⊙	B- 5	5.0	POORLY GRADED GRAVEL with SAND(GP)				14.19	79.23

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B- 2	2.0	38.1	12.182	1.86	0.334	58.8	39.3	1.9	
⊠	B- 3	10.0	38.1	11.312	3.327	0.14	67.2	28.0	4.8	
▲	B- 3	20.0	19.1	0.108			4.4	52.2	43.4	
★	B- 4	10.0	0.075				0.0	0.0	3.7	
⊙	B- 5	5.0	38.1	11.258	4.764	0.142	70.1	25.8	4.1	

GRAIN SIZE DISTRIBUTION

Project: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239



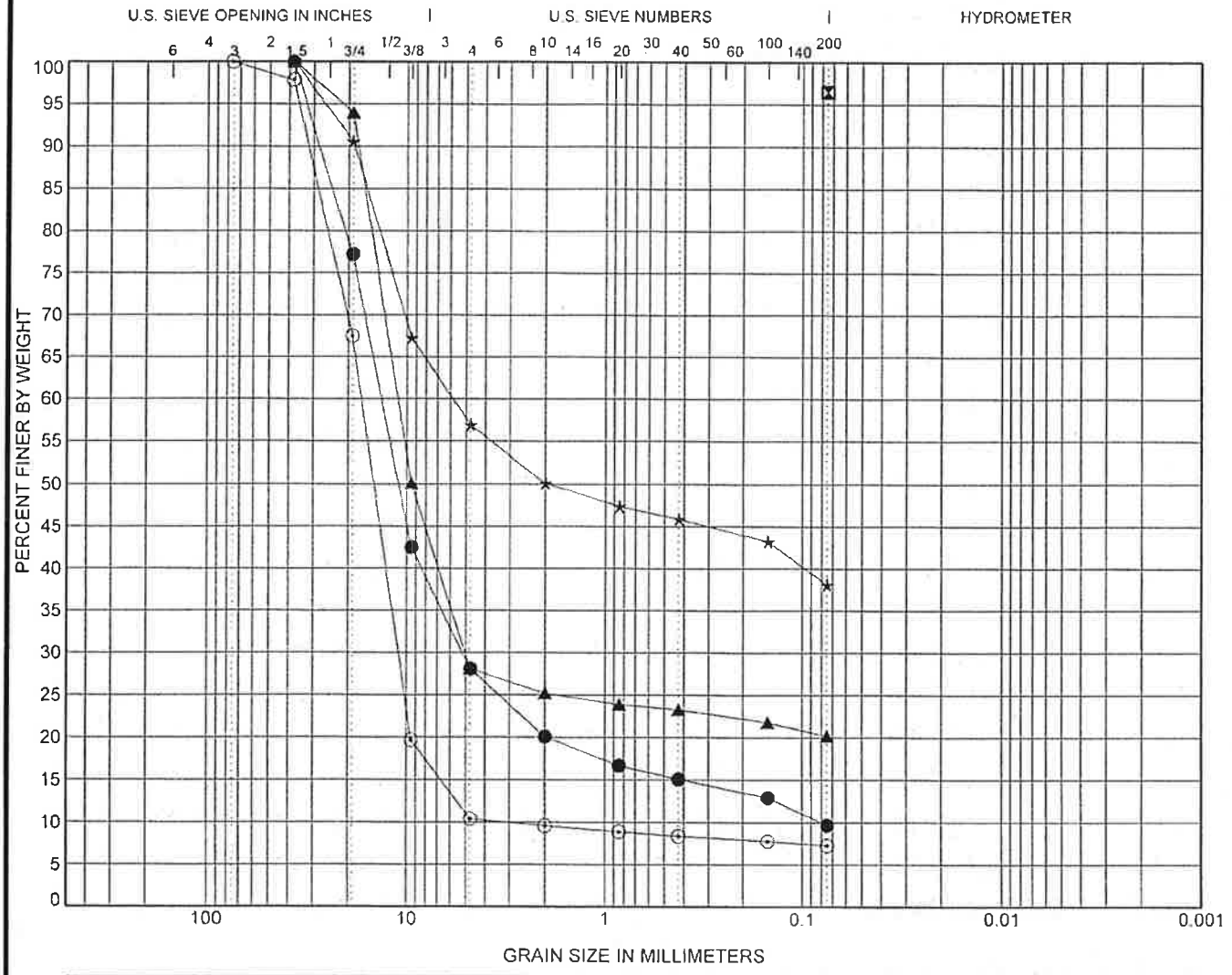
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	B- 7	2.5					94.83	302.67
⊠	B- 8	10.0					41.67	117.42
▲	B- 9	5.0	POORLY GRADED GRAVEL with SILT(GP-GM)	NP	NP	NP	21.17	59.12
★	B-10	2.5						
⊙	B-11	10.0					4.13	14.01

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B- 7	2.5	38.1	13.497	7.555		77.7	11.4	10.9	
⊠	B- 8	10.0	38.1	13.348	7.952	0.114	81.3	9.6	9.1	
▲	B- 9	5.0	38.1	17.001	10.173	0.288	83.0	10.2	6.8	
★	B-10	2.5	0.075				0.0	0.0	3.6	
⊙	B-11	10.0	38.1	18.263	9.915	1.304	83.5	11.4	5.1	

GRAIN SIZE DISTRIBUTION

Project: Day Break Apartments
Location: Daybreak View Pkwy and Oakmond Rd
South Jordan, UT
Project No: 8-817-005239



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	B-13	10.0					25.05	168.81
⊠	B-13	20.0	FAT CLAY(CH)	50	26	24		
▲	B-14	2.5						
★	B-16	0.0						
⊙	S-4	0.0					2.31	5.55

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-13	10.0	38.1	13.511	5.205	0.08	71.9	18.4	9.7	
⊠	B-13	20.0	0.075				0.0	0.0	96.5	
▲	B-14	2.5	38.1	11.12	5.043		71.9	7.9	20.2	
★	B-16	0.0	38.1	5.84			43.1	18.8	38.1	
⊙	S-4	0.0	76.2	17.118	11.043	3.082	89.5	3.1	7.3	

May 23, 2008

Nolte Associates, Inc.
5217 South State Street, Suite 300
Murray, Utah 84107-4828

Attention: Mr. Brent Morgan, PE

SUBJECT: ADEDENDUM to Geotechnical Engineering Report
Daybreak View Pkwy and Oakmond Rd
South Jordan, Utah
AMEC Project No. 8-817-005239

Based on traffic information provided by WCEC Engineers, AMEC recommends the following pavement sections for the roads bounding the Daybreak Apartments. This information should be considered an addendum the geotechnical report completed by AMEC for the Daybreak Apartments[1] dated May 13, 2008.

Road	Functional Class	Average Daily Traffic (ADT)	Design Lane18-kip ESALs (2% heavy Trucks)	Pavement Layer Thickness, (Inches)	
				Asphaltic Concrete (AC)	Untreated Base Course (UTBC)
Auto and Light Trucks	N/A	N/A	30,000	3	6
Daybreak View Parkway	**Minor Arterial**, 5-lane, 60/40 directional split and 50/50 lane split	30,000	1,900,000	6	6
Lake Run and Oakmond	**Major Collector**, 2-lane, 50/50 directional split	10,000	798,000	5.5	6
Duckhorn	**Major Collector**, 2-lane, 50/50 directional split	5,000	461,000	5	6

[1] "Geotechnical Engineering Report Daybreak Apartments, Daybreak View Parkway & Oakmond Road, South Jordan, Utah," dated May 13, 2008, AMEC Project No. 8-817-005239