A Cache Corp.

Engineering a Firm Foundation

Geotechnical Investigation

for the proposed

CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Foxborough Estates, New Legacy Building

(Property # 500-2240)

at the approximate address of

3200 South 1500 West Nibley, Utah

PREPARED FOR:

Corporation of the Presiding Bishop of The Church of Jesus Christ of Latter-day Saints

Care of:

Coldwell Banker Commercial NRT.

6550 South Millrock Drive, Suite 200

Salt Lake City, Utah 84121

PREPARED BY:

A Cache Corp.

PROJECT NO. 1090009

September 9, 2008

September 9, 2008

Attn. Kent Kohlhase
Coldwell Banker Commercial NRT.
6550 South Millrock Drive, Suite 200
Salt Lake City, Utah 84121

Subject: **Geotechnical Investigation for the proposed**
CHURCH OF JESUS CHRIST
OF LATTER-DAY SAINTS
Foxborough Estates, New Legacy Building (Property # 500-2240)
to be located at approximately
3200 South 1500 West
Nibley, Utah

A Cache Corp. Project No. 1080009

Mr. Kohlhase,

It is with grate pleasure that A Cache Corp. presents this report of our findings for the subject site. It contains the results of our findings and an engineering interpretation of the results with respect to the available project characteristics.

Soil samples were obtained during our investigation. Please note that we will store these samples for 30 days after the signed date on this report, at which time they will be discarded unless you request otherwise.

We appreciate the opportunity of working with you on this project and look forward to future projects with you. If you have questions regarding this project, or any other, please do not hesitate to contact us at **(435)-760-3103**.

Sincerely,

A Cache Corp.

REGISTERED PROFESSIONAL ENGINEER
No.334536
JAY E. APEDAILE
09/10/08
STATE OF UTAH

Jay E. Apedaile, P.E. M.S.
President

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1.0 GENERAL PROJECT INFORMATION

1.1 Project Authorization

A Cache Corp. (ACC) was retained by Kent Kohlhase of Coldwell Banker Commercial NRT. (Coldwell) on behalf of the Church of Jesus Christ of Latter-day Saints (LDS Church) to conduct a Geotechnical Subsurface Investigation, for the proposed LDS Church Building (Property # 500-2240) to be located at the approximate address of 3200 South and 1500 West in Nibley, Utah (see **Figures 1 and 2** in the Appendix).

1.2 Project Purpose and Description

The purpose of this study was to obtain design level soil information to be used in the design of the proposed building. Based on the information provided by Coldwell the proposed construction will consist of the development of 4.52 acres for an LDS Church Building and accompanying parking lot. The proposed structure is a single story building, no basement, with some high walls and large spans. Structural loads are anticipated to consist of column loads ranging from 10 to 60 kips, and wall loads ranging from 2.0 to 4.0 kips per linear foot, for dead plus live loads. Final site grading information was not provided. ACC has assumed that the floor slab of the building will be placed at the current elevation of the site.

This report and the recommendations here in are based on the available project information. If this information is incorrect, then ACC shall be informed, preferably in writing, so ACC can evaluate the validity of this report.

2.0 SITE AND SUBSURFACE CONDITIONS

2.1 Site Investigation

The site is located in an open field on the south side of 3200 South at an approximate address of 3200 South 1500 West in Nibley, Utah (see **Figures 1 and 2** in the Appendix). The proposed building is to be centrally located within the proposed area of construction that extends approximately 420 feet directly south of the existing 3200 South street and 492 feet in the east-west direction.

The general subsurface conditions at the site were investigated by drilling 13 boreholes ranging from 5-feet to 30-feet below the current site grade. See the approximate location of each borehole on **Figure 2** in the Appendix. Soil samples were obtained at significant change of strata and in general accordance with ASTM D-420 and ASTM 2488. The

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subsurface conditions observed in the field investigation are discussed in Section 3.6 and in the Boring Logs.

Logs of the boreholes including a description of all soil strata encountered are presented in the Appendix as **Figures 4-11**. Sampling information and other pertinent data and observations are also included in the logs. A legend of the symbols used in the boring logs is presented in the Appendix as **Figure 3**.

2.2 Laboratory Investigation

Samples obtained during the field investigation were returned to the laboratory and inspected and classified in accordance with the Unified Soil Classification System (ASTM 2487). Selected laboratory tests were performed on representative soil samples to determine their classification and characteristics with respect to engineering design. The following list indicates typical laboratory tests which may have been conducted on some of the samples retrieved from the site.

Test	Standard	To Determine
Moisture Content	ASTM D 2216	% moisture representative of field conditions
Atterberg Limits	ASTM D 4318	Plasticity and workability
% Pass #200 Sieve	ASTM D 1140	% fines in sample
Dry Density	ASTM D 2937	Dry unit weight representative of field conditions.
Consolidation	ASTM D 2435	Maximum past pressure, collapse, swell and consolidation Potential,

The testing results and the soil classifications are illustrated in the Borehole logs contained in the Appendix (**Figures 4-11**).

3.0 FINDINGS

3.1 Site Conditions

At the time of this investigation the site consisted of an open field with an irrigation ditch running east-west along the northern edge, parallel to 3200 South. Three to four new homes and others under construction bordered the eastern edge of the site. The site is relatively flat and slopes very gradually down towards the northwest. The elevation of the site is at approximately 4496-feet.

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3.2 Surface Drainage

Currently, the majority of any surface runoff would drain west northwest to the adjoining property. The planted field appears to be adequate in keeping the surface soils from eroding.

3.3 Geology

The site appears to have been formed from lacustrine silts and clays related to the Provo and Bonneville shorelines. Soils are predominantly clay, silt and minor fine sands with occasional coarse sand.

3.4 Soil Profile

The soil profile at the site appeared to be relatively consistent. A typical profile encountered would consist of the following: Twelve inches of dark brown clay loam Topsoil underlain by brown, medium stiff to stiff LEAN CLAY to approximately 7 feet below the current grade. From approximately 7 feet to 24 feet is a gray, soft FAT CLAY. From 24 feet to the full depth explored (approximately 30-feet below current grade) a medium dense gray POORLY GRADED SAND was observed.

For detailed observations of the sub-soils, the location they were observed, the characteristic observed, and any other pertinent information observed in the field or in the laboratory, see the Boring Logs in the Appendix.

3.5 Fault and Seismicity

The site is located in a seismically active region. It is over 5-miles west of the Utah East Cache Fault scarp, as depicted on the Surficial Geologic Map of the East Cache Fault Zone (James McCalpin, 1989). During the life of the project seismic activity caused by active faults in the area, have the potential of causing moderate to strong shaking. According to the findings of our subsurface investigation, and according to the guidelines of the International Building Code (IBC, 2006), the Site Class would be **E** (IBC, 2006; section 1613.5.2).

3.6 Liquefaction Evaluation

A site specific liquefaction assessment was conducted by obtaining SPT-N values and samples for laboratory analysis of the sub-soils to a depth of 30-feet below the current site grade. Liquefaction potential analysis was conducted following the procedures by Seed and Ibriss (1982), Seed, et. Al, (1983; 1985), and Youd and Ibriss (1997), using Standard

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Penetration Test (SPT), and laboratory results. According to laboratory results and our analysis, the site soils have a moderate to low potential to mobilize (liquefy) during a large seismic event.

3.7 Ground Water

Ground water was observed in all five (B-1 through B-5) of the building borings at approximately 3 to 5-feet below the current grade. The groundwater was nearer to the ground surface along the northern edge of the site due to the irrigation ditch mentioned previously in this report. The groundwater became increasingly deeper the further the borehole was away from the ditch (i.e. further south). It is likely that the groundwater fluctuates during the year according to rainfall and other climatic and manmade (irrigation) influences. A detailed evaluation of the groundwater is beyond the scope of this investigation.

3.8 Site Subsurface Variations

It is our experience that variations in continuity and nature of subsurface conditions should be anticipated. Due to the nature and depositional characteristics of soils encountered at the site, care should be taken in interpolating or extrapolating subsurface conditions beyond the exploratory borings. Seasonal fluctuations in ground water conditions are likely to occur.

4.0 RECOMMENDATIONS

Recommendations have been developed on the basis of the previously described project characteristics and subsurface conditions observed in the field and laboratory, as well as common engineering practice. Prudence and common engineering practices should be followed in conjunction to the recommendations of this report.

4.1 Site Preparation and Grading

All topsoil, vegetation, unsuitable soils, fill, and any other deleterious materials, should be removed from areas of new construction. This material shall not be used as structural fill. After striping and excavation to the proper subgrade elevation, the exposed subgrade should be proof-rolled with a loaded tandem axle dump truck or similar rubber tired vehicle. Soils that rut, or tend to deflect excessively, should be removed and replaced with properly compacted fill. Proof rolling and removal of pumping material should be witnessed by the geotechnical engineer, or his approved representative. For best results this should take place during a period of dry weather. The subgrade soils should be compacted to a minimum of 92 percent Modified Proctor maximum laboratory density (ASTM D 1557) at a moisture content ranging from -2 to +5 percentage point of optimum.

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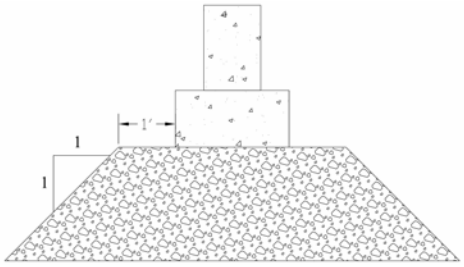
4.2 Foundation Recommendations

Conventional spot and continuous wall foundations may be used for the support of the proposed structure at the subject site. Based on field and laboratory data an **allowable bearing capacity of 1.25 kips/ft^2** may be used **for continuous and spot** foundation design, provided the following recommendations are observed:

- Foundations shall be placed on native undisturbed brown silty clay soil or compacted structural fill (conforming to Sections 5.2 and 5.3).
- Onsite soils shall be examined by a qualified geotechnical engineer from this office, to verify that all topsoil, construction debris, soft spots, and any other deleterious materials have been removed prior to the placement of footings or structural fill.
- Structural fill shall be a well-graded granular soil, free of organics, debris, or other deleterious materials as outlined in Section 5.3.
- Structural fill shall be compacted as outlined in Section 5.3.
- Structural fill shall extend as a minimum 1-foot past the edge of the footing, and then for every 1-foot of fill (vertically) placed below the footing, it shall extend a minimum of 1-foot horizontally.
- Continuous footing width shall be maintained at a minimum of 18 inches.
- Spot footings shall be a minimum of 24 inches in width.
- Exterior footings shall be placed a minimum of 36 inches below final grade, and interior footing shall be placed a minimum of 18 inches below grade for frost protection.



Allowable bearing pressure may be increased by 1/3 for temporary loads such as wind or seismic forces. Foundations designed and constructed in accordance with our recommendations could experience some settlement. If the recommendations provided herein are observed, we estimate settlement should not exceed one inch, with differential settlements on the order of one-half inch. We anticipate approximately 75 percent of initial settlement to take place during construction.

4.3 Lateral Soil Pressures

Lateral soil pressures are dependent on the type of soil present. For the native silts and low plastic clay the following lateral soil pressures shall be used for design:

1. An equivalent fluid pressure of 60 pounds per cubic foot (pcf) for the active case. That is when the structure is allowed to yield, that is to say the structure is allowed to move away from the soil. This requires a minimum movement or

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rotation at the top of the wall of 0.001H, where "H" is the height of the wall (bottom of footing to top of wall).

2. 100 pcf for the at-rest case. That is when the wall is not allowed to yield.
3. 260 pcf for the passive case. That is when the wall exerts pressure on the soil.
4. A coefficient of friction of 0.28 shall be used for the interface between the native silty clay and the cast-in-place concrete.

4.4 Drainage

For constructability, adequate surface drainage should be provided at the site to minimize any increase in moisture content of the foundation supporting soils during and after construction. Foundation soils shall be protected from any increase in moisture.

For final grade we recommend all areas around the structures be generously sloped to provide drainage away from these areas. We recommend a minimum slope of 6 inches in the first 10 feet away from the structure.

4.5 Floor Slabs

All topsoil and deleterious materials shall be removed (typically about 12-inches of topsoil at this site). We recommend a minimum of 6 inches of free draining structural fill, free from organic material and debris, be used just below floor slabs as a vapor barrier. If grade is required to be re-established or raised above current grade a structural fill shall be used and placed in accordance with Sections 5.2 and 5.3.

4.6 Pavement Design

We expect site traffic to consist primarily of lightweight vehicle and pedestrian traffic. Both flexible and ridged pavement design options are provided below. The following minimum recommended pavement sections are based on an estimated CBR of 6.0%:

Option #1	**Flexible Pavement Design Section Thickness (in)**				
Material	**Pedestrian Traffic**	**Light Traffic**	**Main Drive**	**Dumpster Pad and Approach**	**Road Way**
Asphalt Pavement	**-**	**3**	**3**		**3**
Concrete Pavement	**4**	**-**	**-**	**6 reinforced**	
Road-Base Material	**-**	**4**	**4**	**-**	**4**
Sub base	**6**	**6**	**12**	**6**	**18**
Total Thickness	**10**	**13**	**19**	**12**	**25**

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To insure a long life of the asphalt, water should be directed quickly off of the asphalt and into a concrete gutter or drain. **The asphalt pavement should be compacted to 96% of the maximum density for the asphalt material.**

Option #2	**Rigid Pavement Design Section Thickness (in)**			
Material	**Pedestrian Traffic**	**Light Traffic**	**Main Drive**	**Dumpster Pad and Approach**
Concrete Pavement	**4**	**5**	**5**	**6 reinforced**
Road-Base Material	**-**	**-**	**-**	**-**
Sub base	**6**	**6**	**6**	**6**
Total Thickness	**10**	**19**	**27**	**12**

The concrete shall have a minimum compressive strength of 3,500 psi. at 28 days. It should also have 5 $\pm$ 1 percent entrained air for durability and workability. A fiber mesh is also recommended to enhance the durability of the concrete. To reduce the potential for cracking, appropriate construction joints are required. Joints shall be designed in accordance with current Portland Cement Association guidelines. Joint shall be sealed to infiltration into pavement joints.

It is further recommended that all topsoil and fill materials are removed prior to the placing of base material, and structural fill. The native soils shall be proof rolled as outlined in Section 4.1. If any areas appear soft, they should be removed and replaced with structural fill. **All structural fill materials overlying native soil should be compacted in accordance with Section 5.2 of this report.**

4.7 Topsoil Fertilization Recommendations

Representative samples of topsoil were obtained at the site and evaluated to determine its nutritional adequacy for landscaping. The topsoil was evaluated for both lawns and shrubs. Tests indicate that the existing topsoil nutrients are adequate for supporting lawn, flower beds, and shrub growth. See Appendix B for detailed test results.

5.0 GENERAL CONSTRUCTION CONSIDERATIONS

The guidelines and recommendations outlined below address the geotechnically related construction considerations for this project.

5.1 Foundation Excavations

All areas that will support foundation loads should be inspected by the geotechnical engineer, or his approved representative, to insure that all loose, soft, or otherwise undesirable material is removed, and that the structure will bear on satisfactory material.

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This shall occur prior to the placement of any structural fill or concrete. All topsoil shall be removed prior to the placement of foundations or pavements. (We recommend giving this office a few days notice for scheduling.) Any loose or deleterious material should be replaced with a free draining granular fill as outlined in **Sections 5.2 and 5.3**.

If unsatisfactory material pockets are encountered in the excavation, the undesirable material should be removed, and the elevation re-established by backfilling. This backfilling can be done with a lean concrete, or a well-compacted structural fill as define in **Section 5.3**.

All structural fill supporting footing loads should be compacted to at least 95 percent of the Modified Proctor Maximum Density (ASTM D 1557), provided the foundation is designed as outlined in **Section 4.2**. Compaction tests should be taken on each lift to insure the required compaction is being achieved.

Foundation excavations shall be protected against any harmful change in condition such as disturbance, rain, and freezing. Surface runoff should be directed away from the excavation and not allowed to pond. All footing concrete should be poured the same day as the excavation is made. If this is not practical, the foundation excavation should be adequately protected, and foundation placement should take place as soon as possible. For best construction results we recommend that earth work be conducted during the dry months of the year, typically June through October.

Excavation slopes shall maintain a maximum slope of 1.5 horizontal to 1 vertical. If it is required that slopes are steeper, it is necessary that excavation shoring/bracing be used.

5.2 Fill Compaction

All fill material should be compacted in accordance to the following criteria based on the Modified Proctor Maximum Laboratory Density (ASTM D 1557):

1. Structural fill, supporting foundations.	95%
2. Structural fill, below floor stabs	94%
3. Backfill of trenches	
a. Below foundations	95%
b. Below floor stabs	94%
c. Below pavements	94%
d. Others	90%
4. Beneath Pavements	95%

Compaction should be accomplished by placing the fill in a maximum of 8-inch loose lifts, and mechanically compacting each lift to the specified minimum density. Field density tests should be performed on each lift as necessary to insure that compaction is being achieved. As a minimum 33% of all spot footings, and one test for every 50 lineal feet of continuous wall footings shall be tested for each lift.

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5.3 Types of Fill

5.3.1 Structural Fill: Sub-base (pit-run)

Well-graded granular soils free of organics, debris, or other deleterious materials are recommended for use as structural fill at this site. We recommend a well-graded sandy gravel material with no less than 5%, and no more than 10% passing the #200 sieve, and no particles greater than 4 inches in maximum dimension. Structural fill shall be compacted at a moisture content ranging from -2 to +6 percentage point of optimum in accordance to the Modified Proctor Maximum Laboratory Density (ASTM D 1557).

5.3.2 Structural Fill: Roadbase

Granular soils free of organics or other deleterious materials and debris. We recommend a sand and fractured gravel material with between 5 and 12 percent passing the #200 sieve, and no particles greater than approximately 1 inch in maximum dimension.

5.3.3 Non-Structural Fill

On-site soils appear to be suitable for non-structural site grading and landscaping fill. All fill material shall be approved by the engineer prior to placement.

5.4 Quality Control

Our recommendations are based on the assumption that adequate quality control testing and observations will be conducted during construction to verify compliance. This may include but is not necessarily limited to the following:

5.4.1 Field observations

Observations during all phases of construction should occur. Observations such as site preparation, foundation excavation, structural fill placement, and concrete placement.

5.4.2 Fill Compaction

Compaction testing is required for all Structural supporting fill materials. Maximum Dry Density (Proctor-ASTM 1557) tests should be requested by the contractor immediately after delivery of any granular fill materials. The maximum density information should then be used for field density tests on each lift as necessary to insure that the required compaction is being achieved.

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5.4.3 Concrete Quality

We recommend that freshly mixed concrete be tested in accordance with ASTM designations as follows:

- Slump, Temperature, Unit Weight, and Yield testing should be conducted on every delivery truck (ASTM C 138 and C 143).

- Entrained Air testing should also be conducted on every delivery truck for exposed concrete or concrete placed above the frost line (ASTM C 231).

- Test cylinders should be taken a minimum of every 50 cubic yards. Cylinder compressive strength tests should be conducted at 7 and 28 days from the placement date (ASTM C 31).

6.0 LIMITATIONS

The recommendations submitted in this report were based on evaluating the information obtained from the borings and site investigation, and the design details furnished by COLDWELL for the proposed project. The borehole data reflects the subsurface condition only at the specific location at the particular time designated on the borehole logs. Soil and ground water conditions may differ from conditions encountered at the actual borehole location. The nature and extent of any variation in the borehole may not become evident until construction begins. If variations do appear, it may become necessary to re-evaluate the recommendations of this report after we have observed the variation. If A Cache Corp. is not notified of changes to the project or variations of the soils, A Cache Corp. will not be responsible for the impact of those changes on the project.

The Geotechnical Engineer warrants that the findings, recommendations, specification, or professional advice contained herein, have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.

Once the plans and specifications are more complete, the Geotechnical Engineer shall be provided the opportunity to review the final design plans and specifications to check that our engineering recommendations have been properly incorporated into the design documents. At this time, it may be necessary to submit supplementary recommendations. If A Cache Corp. is not provided this opportunity, then, A Cache Corp. will not be responsible for the impact of those conditions on the project. This report has been prepared for the exclusive use of Coldwell Banker and the LDS Church, for the specific use on the proposed Church of Jesus Christ of Latter-Day Saints Foxborough estates New Legacy building to be located at 3200 South 1500 West, Nibley, Utah.

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7.0 REFERENCES

ASTM, American Society for Testing and Materials 1997

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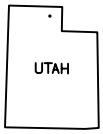
APPENDIX A



USGS 1987

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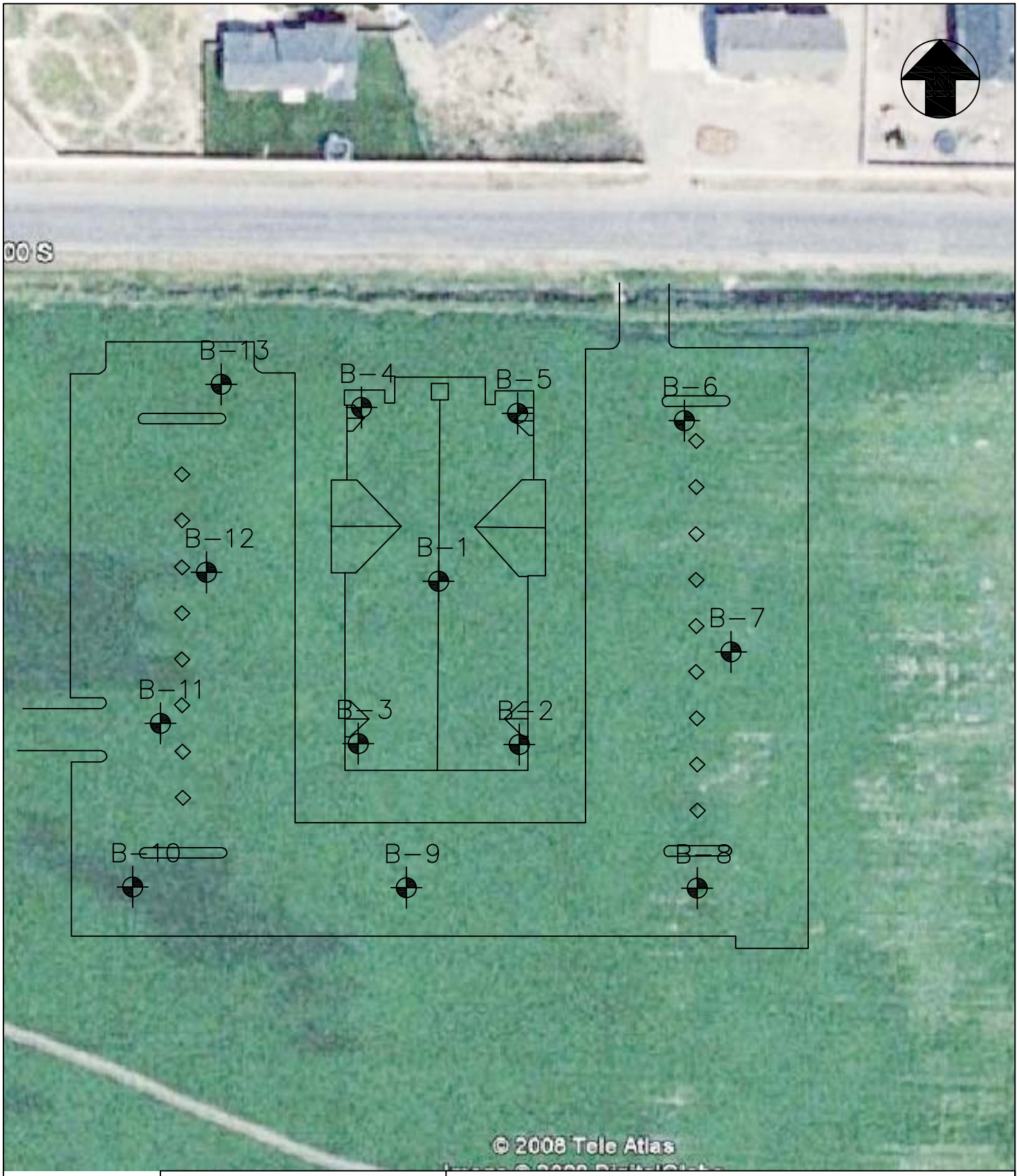
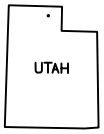
Foxborough Estates, LDS New Legacy

3200 South 1500 West Nibley, UT

TITLE:	Vicinity Map		
SCALE:	No Scale	ENGINEER: J. Apedaile	DRAWN BY: J. Elsmore
DATE:	7/28/2008		
DRAWING NO.	1080009 Figures.dwg	FIGURE 1	





USGS 1981

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Foxborough Estates, LDS New Legacy

3200 South 1500 West Nibley, UT

TITLE:	Site Map		
SCALE:	No Scale	ENGINEER: J. Apedaile	DRAWN BY: J. Elsmore
DATE:	8/28/2008		
DRAWING NO.	1080009 Figures.dwg		

FIGURE 2

UNIFIED SOIL CLASSIFICATION SYSTEM

FIELD IDENTIFICATION PROCEDURES				GRAPH SYMBOL	LETTER SYMBOL [1]	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS More than half of material is larger than No. 200 sieve size. [2] (The No. 200 sieve size is about the smallest particle visible to the naked eye)	GRAVELS More than half of coarse fraction is larger than No. 4 sieve size. (For visual classifications, the 1/4" size may be used as equivalent to the No. 4 sieve size.)	CLEAN GRAVELS (Little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes.		GW	Well graded gravels, gravel-sand mixtures, little or no fines.
			Predominantly one size or a range of sizes with some intermediate sizes missing.		GP	Poorly graded gravels, gravel-sand mixtures, little or no fines.
		GRAVELS WITH FINES (Appreciable amount of fines)	Non-plastic fines (for identification procedures see ML below).		GM	Silty gravels, poorly graded gravel-sand-silt mixtures.
			Plastic fines (for identification procedures see CL below).		GC	Clayey gravels, poorly graded gravel-sand-clay mixtures.
	SANDS More than half of coarse fraction is smaller than No. 4 sieve size. (For visual classifications, the 1/4" size may be used as equivalent to the No. 4 sieve size.)	CLEAN SANDS (Little or no fines)	Wide range in grain sizes and substantial amounts of all intermediate particle sizes.		SW	Well graded sands, gravelly sands, little or no fines.
			Predominantly one size or a range of sizes with some intermediate sizes missing.		SP	Poorly graded sands, gravelly sands, little or no fines.
		SANDS WITH FINES (Appreciable amount of fines)	Non-plastic fines (for identification procedures see ML below).		SM	Silty sands, poorly graded sand-silt mixtures.
			Plastic fines (for identification procedures see CL below).		SC	Clayey sands, poorly graded sand-clay mixtures.

IDENTIFICATION PROCEDURES ON FRACTION SMALLER THAN No. 40 SIEVE SIZE		DRY STRENGTH (CRUSHING CHARACTERISTICS)	DILATANCY (REACTION TO SHAKING)	TOUGHNESS (CONSISTENCY NEAR PLASTIC LIMIT)	GRAPH SYMBOL	LETTER SYMBOL [1]	TYPICAL DESCRIPTIONS
FINE GRAINED SOILS More than half of material is smaller than No. 200 sieve size. (The No. 200 sieve size is about the smallest particle visible to the naked eye)	SILTS AND CLAYS Liquid limit less than 50	None to slight	Quick to slow	None		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sand with slight plasticity.
		Medium to high	None to very slow	Medium		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
		Slight to medium	Slow	Slight		OL	Organic silts and organic silt-clays of low plasticity.
	SILTS AND CLAYS Liquid limit greater than 50	Slight to medium	Slow to none	Slight to medium		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
		High to very high	None	High		CH	Inorganic clays of high plasticity, fat clays.
		Medium to high	None to very slow	Slight to medium		OH	Organic clays of medium to high plasticity.
HIGHLY ORGANIC SOILS		Readily identified by color, odor, spongy feel and frequently by fibrous texture.				Pt	Peat and other highly organic soils.

[1] Boundary classifications: —Soils possessing characteristics of two groups are designated by combinations of group symbols. For example GW—GC, well graded gravel—sand mixture with clay binder.
[2] All sieve sizes on this chart are U.S. standard.

GENERAL NOTES

1. In general, Unified Soil Classification Designations presented on the logs were evaluated by visual methods only. There rore, actual designations (based on laboratory testing) may differ.

2. Lines seperating strata on the logs represent approximate boundaries only Actual transitions may be gradual.

3. Logs represent general soil conditions observed at the point of exploration on the date indicated.

4. No warranty is provided as to the continuity of soil conditions between individual sample locations.

FINE - GRAINED SOIL

CONSISTENCY	SPT (blows/ft)	TORVANE UNDRAINED SHEAR STRENGTH (tsf)	POCKET PENETROMETER UNCONFINED COMPRESSIVE STRENGTH (tsf)	FIELD TEST
Very Soft	<2	<0.125	<0.25	Easily penetrated several inches by Thumb. Squeezes through fingers.
Soft	2 - 4	0.125 - 0.25	0.25 - 0.5	Easily penetrated 1 " by Thumb . Molded by light finger pressure.
Medium Stiff	4 - 8	0.25 - 0.5	0.5 - 1.0	Penetrated over 1/2 " by Thumb with moerate effort. Molded by strong finger pressure.
Stiff	8 - 15	0.5 - 1.0	1.0 - 2.0	Indented about 1/2 " by Thumb but penetrated only with great effort
Very Stiff	15 - 30	1.0 - 2.0	2.0 - 4.0	Readily indented by Thumbnail
Hard	>30	>2.0	>4.0	Indented with difficulty by Thumbnail

LOG KEY SYMBOLS

- Bulk / Bag Sample
- Rock Core
- Standard Penetration Split Spoon Sampler
- No Recovery
- Shelby Tube
- 2"Ø Penetration Split Spoon Sampler
- Water Level (level after completion)
- Water Level (level where first encountered)

COARSE -GRAINDE SOIL

APPERENT DENSITY	SPT (blows/ft)	RELATIVE DENSITY (%)	FIELD TEST
Very Loose	<4	0 - 15	Easily penetrated with 1/2 " reinforcing rod pushed by hand
Loose	4 - 10	15 - 35	Difficult to penetrated with 1/2 " reinforcing rod pushed by hand
Medium Dense	10 - 30	35 - 65	Easily penetrated a foot with 1/2 " reinforcing rod driven with 5-lb hammer
Dense	30 - 50	65 - 85	Difficult to penetrated a foot with 1/2 " reinforcing rod driven with 5-lb hammer
Very Dense	>50	85 - 100	Penetrated only a few inches with 1/2 " reinforcing rod driven with 5-lb hammer

STRATIFICATION

DESCRIPTION	THICKNESS
SEAM	1/16 - 1/2 "
LAYER	1/2 - 12 "

DESCRIPTION	THICKNESS
Occasional	One or less per foot of thickness
Frequent	More than on per foot of thichness

CEMENTATION

DESCRIPTION	DESCRIPTION
Weakely	Crumbles or breaks with handling of slight finger pressure
Moderately	Crumbles or breaks with considerable finger pressure
Strongly	Will not crumbles or breaks with finger pressure

MODIFIERS

DESCRIPTION	%
Trace	<5
Some	5 - 12
With	>12

MOISTURE CONTENT

DESCRIPTION	FIELD TEST
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible water, usually soil below Water Table

FIGURE 3

A Cache Corp.
Engineering a Firm Foundation

BORING LOG

Foxborough Estates, LDS New Legacy Building

BORING No. : B–1	JOB No. : 1080009	DATE : 8/16/2008	SHEET 1 OF 1
PROJECT : Foxborough Estates New Legacy 3200 South 1500 West Nibley, UT	SURF. EL. :	BORE DIA. : 8.0"	DEPTH : 31.5'
	WATER EL. :	COORDINATES: near center of proposed building	
BORING TYPE : Hollow Stem Auger	CAD FILE : 1080009 Figures.dwg		

SHEAR STRENGTH, TSF
- MINIATURE VANE
- RESIDUAL MINIATURE VANE
- POCKET PENETROMETER
- UNCONFINED COMPRESSION(UU)
- TORVANE

(OPEN SYMBOLS REPRESENT REMOLDED TESTS.)

1.0 2.0

DEPTH, Ft.	GRAPHIC LOG	SAMPLE	SOIL DESCRIPTION	% FINER No. 200 SIEVE	BLOWS/Ft.	LIQUID LIMIT	PLASTIC LIMIT	MOISTURE CONTENT, %	WET/DRY UNIT WT.,lb/cu.ft.
			Surface~1.0': TOPSOIL; dark brown Lean Clay						
			1'~4': Brown LEAN CLAY (CL); moist, firm, iron oxide staining		18			21.4	
5			4'~18': Brown FAT CLAY (CH); moist to wet, firm to very soft, iron oxide staining, occasional fine sand and silt lenses		16	51	26	29.5	
					4			36.1	
10					3			42.1	
15					2			41.5	
20			18'~24': Dark Gray FAT CLAY (CH); very soft, wet, Bonneville clay		0	68	28	52.6	
25			24'~28': Gray Sandy FAT CLAY (CH); firm, wet, layered	60.4	13			25.3	
30			28'~31.5': Gray POORLY GRADED SAND(SP); medium dense, wet		15			NR	
			End at 31.5'						
35									

REMARKS : NR = No Recovery of sample

REMARKS : Blows/Ft. obtained using a Standard Penetration Test (SPT) sampler driven with an automatic hammer

WTR DEPTH @ COMPL. : 4.0'

FIELD ENG.: Jesse Elsmore

COMPLETION DATE : 8/16/2008

FIGURE 4

A Cache Corp.
Engineering a Firm Foundation

BORING LOG

Foxborough Estates, LDS New Legacy Building

BORING No. : B–2	JOB No. : 1080009	DATE : 8/16/2008	SHEET 1 OF 1
PROJECT : Foxborough Estates New Legacy 3200 South 1500 West Nibley, UT	SURF. EL. :	BORE DIA. : 8.0"	DEPTH : 11.5'
	WATER EL. :	COORDINATES:	
BORING TYPE : Hollow Stem Auger	CAD FILE : 1080009 Figures.dwg	near SE corner of proposed building	

DEPTH, Ft.	GRAPHIC LOG	SAMPLE	SOIL DESCRIPTION	% FINER No. 200 SIEVE	BLOWS/Ft.	LIQUID LIMIT	PLASTIC LIMIT	MOISTURE CONTENT, %	SHEAR STRENGTH, TSF (● MINIATURE VANE; ⊖ RESIDUAL MINIATURE VANE; ⊗ POCKET PENETROMETER; ◓ UNCONFINED COMPRESSION(UU); ⊕ TORVANE; (OPEN SYMBOLS REPRESENT REMOLDED TESTS.) 1.0 2.0)	WET/DRY UNIT WT.,lb/cu.ft.
			Surface~10": TOPSOIL; dark brown Lean Clay							
		X	10"~7.0': Brown LEAN CLAY (CL); firm, moist, iron oxide staining		19			17.6		
5		X			9			29.9		
		X	7.0'~11.5': Brown FAT CLAY (CH); firm to soft, moist to wet, iron oxide staining, occasional fine sand and silt lenses		3			37.1		
10		X			3			47.9		
			End at 11.5'							
15										
20										
25										
30										
35										

REMARKS : Blows/Ft. obtained using a Standard Penetration Test (SPT) sampler driven with an automatic hammer

REMARKS :

WTR DEPTH @ COMPL. : 4'–7"

FIELD ENG.: Jesse Elsmore

COMPLETION DATE : 8/16/2008

FIGURE 5

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BORING LOG

Foxborough Estates, LDS New Legacy Building

BORING No. : B–3	JOB No. : 1080009	DATE : 8/16/2008	SHEET 1 OF 1
PROJECT : Foxborough Estates New Legacy 3200 South 1500 West Nibley, UT	SURF. EL. :	BORE DIA. : 8.0"	DEPTH : 17.0'
	WATER EL. :	COORDINATES: near SW corner of proposed building	
BORING TYPE : Hollow Stem Auger	CAD FILE : 1080009 Figures.dwg		

DEPTH, Ft.	GRAPHIC LOG	SAMPLE	SOIL DESCRIPTION	% FINER No. 200 SIEVE	BLOWS/Ft.	LIQUID LIMIT	PLASTIC LIMIT	MOISTURE CONTENT, %	SHEAR STRENGTH, TSF (● MINIATURE VANE; ⊖ RESIDUAL MINIATURE VANE; ⊗ POCKET PENETROMETER; ◓ UNCONFINED COMPRESSION(UU); ⊕ TORVANE; (OPEN SYMBOLS REPRESENT REMOLDED TESTS.) 1.0 2.0)	WET/DRY UNIT WT.,lb/cu.ft.
			Surface~1.0': TOPSOIL; dark brown Lean Clay							
		X	1.0'~6.0': Brown LEAN CLAY (CL); firm, moist, iron oxide staining		20			14.6		
5		X	▼		9			30.7		
		X			2			38.9		
10		■	6.0'~17.0': Brown FAT CLAY (CH); moist to wet, firm to soft, iron oxide staining, occasional fine sand and silt lenses		N/A	59	29	29.5		
15		■			N/A			NR		
			End at 17.0'							
20										
25										
30										
35										

REMARKS : NR = No Recovery

REMARKS : Blows/Ft. obtained using a Standard Penetration Test (SPT) sampler driven with an automatic hammer

WTR DEPTH @ COMPL. : 5'–2"

FIELD ENG.: Jesse Elsmore

COMPLETION DATE : 8/16/2008

FIGURE 6

A Cache Corp.
Engineering a Firm Foundation

BORING LOG

Foxborough Estates, LDS New Legacy Building

BORING No. : B–4	JOB No. : 1080009	DATE : 8/16/2008	SHEET 1 OF 1
PROJECT : Foxborough Estates New Legacy 3200 South 1500 West Nibley, UT	SURF. EL. :	BORE DIA. : 8.0"	DEPTH : 12.0'
	WATER EL. :	COORDINATES: near NW corner of proposed building	
BORING TYPE : Hollow Stem Auger	CAD FILE : 1080009 Figures.dwg		

DEPTH, Ft.	GRAPHIC LOG	SAMPLE	SOIL DESCRIPTION	% FINER No. 200 SIEVE	BLOWS/Ft.	LIQUID LIMIT	PLASTIC LIMIT	MOISTURE CONTENT, %	SHEAR STRENGTH, TSF (● MINIATURE VANE; ⊖ RESIDUAL MINIATURE VANE; ⊗ POCKET PENETROMETER; ◓ UNCONFINED COMPRESSION(UU); ⊕ TORVANE; (OPEN SYMBOLS REPRESENT REMOLDED TESTS.) 1.0 2.0)	WET/DRY UNIT WT.,lb/cu.ft.
			Surface~1.0': TOPSOIL; dark brown Lean Clay							
			1.0'~7.0': Brown LEAN CLAY (CL); firm, moist, iron oxide staining		19			27.5		
5					12			28.5		
			7.0'~12.0': Brown FAT CLAY (CH); moist to wet, firm to soft, iron oxide staining, occasional fine sand and silt lenses		3	55	28	38.3		
10					N/A			41.6		
			End at 12.0'							
15										
20										
25										
30										
35										

REMARKS : Blows/Ft. obtained using a Standard Penetration Test (SPT) sampler driven with an automatic hammer

REMARKS :

WTR DEPTH @ COMPL. : 3'–10"

FIELD ENG.: Jesse Elsmore

COMPLETION DATE : 8/16/2008

FIGURE 7

A Cache Corp.
Engineering a Firm Foundation

BORING LOG

Foxborough Estates, LDS New Legacy Building

BORING No. : B–5	JOB No. : 1080009	DATE : 8/16/2008	SHEET 1 OF 1
PROJECT : Foxborough Estates New Legacy 3200 South 1500 West Nibley, UT	SURF. EL. :	BORE DIA. : 8.0"	DEPTH : 12.0'
	WATER EL. :	COORDINATES: near NE corner of proposed building	
BORING TYPE : Hollow Stem Auger	CAD FILE : 1080009 Figures.dwg		

DEPTH, Ft.	GRAPHIC LOG	SAMPLE	SOIL DESCRIPTION	% FINER No. 200 SIEVE	BLOWS/Ft.	LIQUID LIMIT	PLASTIC LIMIT	MOISTURE CONTENT, %	SHEAR STRENGTH, TSF (● MINIATURE VANE; ⊖ RESIDUAL MINIATURE VANE; ⊗ POCKET PENETROMETER; ◓ UNCONFINED COMPRESSION(UU); ⊕ TORVANE; (OPEN SYMBOLS REPRESENT REMOLDED TESTS.) 1.0 2.0)	WET/DRY UNIT WT.,lb/cu.ft.
			Surface~1.0': TOPSOIL; dark brown Lean Clay							
			10"~7.0': Brown LEAN CLAY (CL); firm, moist, iron oxide staining		13			21.2		
5					12	48	25	26.2		
			7.0'~12.0': Brown FAT CLAY (CH); moist to wet, firm to soft, iron oxide staining, occasional fine sand and silt lenses		3			46.9		
10					N/A			NR		
			End at Required 12.0'							
15										
20										
25										
30										
35										

REMARKS : NR = No Recovery

REMARKS : Blows/Ft. obtained using a Standard Penetration Test (SPT) sampler driven with an automatic hammer

WTR DEPTH @ COMPL. : 3'–2"

FIELD ENG.: Jesse Elsmore

COMPLETION DATE : 8/16/2008

FIGURE 8

A Cache Corp.
Engineering a Firm Foundation

BORING LOG

Foxborough Estates, LDS New Legacy Parking Area

BORING No. : B–6, 7, 8	JOB No. : 1080009	DATE : 8/16/2008	SHEET 1 OF 1
PROJECT : Foxborough Estates New Legacy 3200 South 1500 West Nibley, UT	SURF. EL. :	BORE DIA. : 8.0"	DEPTH : 5.5'
	WATER EL. :	COORDINATES:	
BORING TYPE : Hollow Stem Auger	CAD FILE : 1080009 Figures.dwg		

DEPTH, Ft.	GRAPHIC LOG	SAMPLE	SOIL DESCRIPTION	% FINER No. 200 SIEVE	BLOWS/Ft.	LIQUID LIMIT	PLASTIC LIMIT	MOISTURE CONTENT, %	SHEAR STRENGTH, TSF (● MINIATURE VANE; ⊖ RESIDUAL MINIATURE VANE; ⊗ POCKET PENETROMETER; ◓ UNCONFINED COMPRESSION(UU); ⊕ TORVANE; (OPEN SYMBOLS REPRESENT REMOLDED TESTS.) 1.0 2.0)	WET/DRY UNIT WT.,lb/cu.ft.
			B–6							
			Surface~1.0': TOPSOIL; dark brown Lean Clay							
5		▲	1.0'~5.5': Brown LEAN CLAY (CL); moist to wet, firm to soft, iron oxide staining, occasional fine sand or silt lenses, softer at ~3.0'		N/A			19.5		
			End at 5.5'							
10										
			B–7							
			Surface~1.0': TOPSOIL; dark brown Lean Clay							
5		▲	1.0'~5.5': Brown LEAN CLAY (CL); moist to wet, firm to soft, iron oxide staining, occasional fine sand or silt lenses, softer at ~4.0'		N/A			14.3		
			End at 5.5'							
10										
			B–8							
		▲	Surface~1.0': TOPSOIL; dark brown Lean Clay		N/A					
5			1.0'~5.5': Brown LEAN CLAY (CL); moist to wet, firm to soft, iron oxide staining, occasional fine sand or silt lenses							
			End at 5.5'							

REMARKS :

REMARKS :

WTR DEPTH @ COMPL. :

FIELD ENG.: Jesse Elsmore

COMPLETION DATE : 8/16/2008

FIGURE 9

A Cache Corp.
Engineering a Firm Foundation

BORING LOG

Foxborough Estates, LDS New Legacy Parking Area

BORING No. : B–9, 10, 11	JOB No. : 1080009	DATE : 8/16/2008	SHEET 1 OF 1
PROJECT : Foxborough Estates New Legacy 3200 South 1500 West Nibley, UT	SURF. EL. :	BORE DIA. : 8.0"	DEPTH : 5.5'
	WATER EL. :	COORDINATES:	
BORING TYPE : Hollow Stem Auger	CAD FILE : 1080009 Figures.dwg		

DEPTH, Ft.	GRAPHIC LOG	SAMPLE	SOIL DESCRIPTION	% FINER No. 200 SIEVE	BLOWS/Ft.	LIQUID LIMIT	PLASTIC LIMIT	MOISTURE CONTENT, %	SHEAR STRENGTH, TSF (● MINIATURE VANE; ⊖ RESIDUAL MINIATURE VANE; ⊗ POCKET PENETROMETER; ◓ UNCONFINED COMPRESSION(UU); ⊕ TORVANE; (OPEN SYMBOLS REPRESENT REMOLDED TESTS.) 1.0 2.0)	WET/DRY UNIT WT.,lb/cu.ft.
			B–9							
			Surface~1.0': TOPSOIL; dark brown Lean Clay							
5			1.0'~5.5': Brown LEAN CLAY (CL); moist to wet, firm to soft, iron oxide staining, occasional fine sand or silt lenses, softer at ~4.5'		N/A			21.6		
			End at 5.5'							
10			**B–10**							
			Surface~1.0': TOPSOIL; dark brown Lean Clay							
5			1.0'~5.5': Brown LEAN CLAY (CL); moist to wet, firm to soft, iron oxide staining, occasional fine sand or silt lenses		N/A			15.1		
			End at 5.5'							
10			**B–11**							
			Surface~1.0': TOPSOIL; dark brown Lean Clay		N/A			22.9		
5			1.0'~5.5': Brown LEAN CLAY (CL); moist to wet, firm to soft, iron oxide staining, occasional fine sand or silt lenses, softer at ~4.5'							
			End at 5.5'							

REMARKS :

REMARKS :

WTR DEPTH @ COMPL. :

FIELD ENG.: Jesse Elsmore

COMPLETION DATE : 8/16/2008

FIGURE 10

A Cache Corp.
Engineering a Firm Foundation

BORING LOG

Foxborough Estates, LDS New Legacy Parking Area

BORING No. : B–12, 13	JOB No. : 1080009	DATE : 8/16/2008	SHEET 1 OF 1
PROJECT : Foxborough Estates New Legacy 3200 South 1500 West Nibley, UT	SURF. EL. :	BORE DIA. : 8.0"	DEPTH : 5.5'
	WATER EL. :	COORDINATES:	
BORING TYPE : Hollow Stem Auger	CAD FILE : 1080009 Figures.dwg		

DEPTH, Ft.	GRAPHIC LOG	SAMPLE	SOIL DESCRIPTION	% FINER No. 200 SIEVE	BLOWS/Ft.	LIQUID LIMIT	PLASTIC LIMIT	MOISTURE CONTENT, %	SHEAR STRENGTH, TSF (● MINIATURE VANE; ⊖ RESIDUAL MINIATURE VANE; ⊗ POCKET PENETROMETER; ◓ UNCONFINED COMPRESSION(UU); ⊕ TORVANE; (OPEN SYMBOLS REPRESENT REMOLDED TESTS.) 1.0 2.0)	WET/DRY UNIT WT.,lb/cu.ft.
			B–12							
			Surface~1.0': TOPSOIL; dark brown Lean Clay		N/A					
			1.0'~5.5': Brown LEAN CLAY (CL); moist to wet, firm to soft, iron oxide staining, occasional fine sand or silt lenses, softer at ~4.5'							
5			End at 5.5'							
10										
			B–13							
			Surface~1.0': TOPSOIL; dark brown Lean Clay							
			1.0'~5.5': Brown LEAN CLAY (CL); moist to wet, firm to soft, iron oxide staining, occasional fine sand or silt lenses, softer at ~4.5'		N/A			25.0		
5			End at 5.5'							
10										

REMARKS :

REMARKS :

WTR DEPTH @ COMPL. :

FIELD ENG.: Jesse Elsmore

COMPLETION DATE : 8/16/2008

FIGURE 11

Test Data Summary

HOLE NO./ SAMPLE NO.	DEPTH (ft) BELOW GROUND SURFACE	STANDARD PENETRATION BLOWS PER FOOT	IN-PLACE DENSITY UNIT WEIGHT Dry / Wet LB./FT.^{3}	MOISTURE PERCENT	GRADATION % SAND	GRADATION % GRAVEL	% PASSING NO. 200 SIEVE	TORVANE SHEAR TONS/FT.^{2}	ATTERBERG LIMITS L.L.	ATTERBERG LIMITS P.L.	ATTERBERG LIMITS P.I.	SOIL CLASSIFICATION UNIFIED SYSTEM
1/1	2.5	18		21.4								CL
1/2	5.0	16		29.5					51	26	25	CH
1/3	7.5	4		36.1								CH
1/4	10.0	3		42.1								CH
1/5	15.0	2		41.5								CH
1/6	20.0	0		52.6					68	28	40	CH
1/7	25.0	13		25.3	39.6	0.0	60.4					CH
2/8	2.5	19		17.6								CL
2/9	5.0	9		29.9								CL
2/10	7.5	3		37.1								CH
2/11	10.0	3		47.9								CH
3/12	2.5	20		14.6								CL
3/13	5.0	9		30.7								CL
3/14	7.5	2		38.9								CH
3/15	10.0	SHELBY		49.5					59	29	30	CH
4/16	2.0	19		27.5								CL
4/17	5.0	12		28.5								CL
4/18	7.5	3		38.3					55	28	27	CH
4/19	10.0	SHELBY		41.6								CH

A Cache Corp.
Engineering a Firm Foundation

Foxborough Estates LDS New Heritage Nibley, UT

FIGURE 12

Test Data Summary

HOLE NO./ SAMPLE NO.	DEPTH (ft) BELOW GROUND SURFACE	STANDARD PENETRATION BLOWS PER FOOT	IN-PLACE DENSITY UNIT WEIGHT Dry / Wet LB./FT.^{3}	MOISTURE PERCENT	GRADATION % SAND	GRADATION % GRAVEL	GRADATION % PASSING NO. 200 SIEVE	TORVANE SHEAR TONS/FT.^{2}	ATTERBERG LIMITS L.L.	ATTERBERG LIMITS P.L.	ATTERBERG LIMITS P.I.	SOIL CLASSIFICATION UNIFIED SYSTEM
5/20	2	13		21.2								CL
5/21	5	12		26.2					48	25	23	CL
5/22	7.5	3		46.9								CH
6/23	3.5	N/A		19.5								CL
7/24	4.5	N/A		14.3								CL
9/25	3	N/A		21.6								CL
10/26	3.5	N/A		15.1	0.0	0.0	100.0					CL
11/27	4.5	N/A		22.9								CL
13/28	2	N/A		25.0								CL

A Cache Corp.
Engineering a Firm Foundation

Foxborough Estates LDS New Heritage Nibley, UT

FIGURE 13

APPENDIX B

Topsoil Testing Report

DTA Area Office	Date 09/02/2008	This form should be given to the person or lab doing the testing each time a soils test is requested.
Ward/Branch Foxborough Estates New Legacy Building		Date Requested: 08/14/2008 By Whom: Coldwell Banker Contact Phone #: 435-760-3103 Fax #:
City Nibley	State Utah	
Stake/Mission Mendon		Property Number 500-2240
Site Street Address 3200 South 1500 West		

Instructions to Architect

1. The architect is to determine, by investigation, the quality and quantity of topsoil on a site before the Owner's review. All information on this form must be provided.
2. A horticultural topsoil test is recommended at each site.
3. The costs for the testing and report will be paid by the Owner.
4. Copies of the report shall be made available to the landscape architect and the DTA Area Office.
5. Report location where soil is from and a history of its use on the back of this form.

Instructions to the Soil Testing Laboratory Firm

1. At least two test samples shall be made of the topsoil on the project site and each anticipated topsoil source. If the site soil profile or borrow pit are not uniform, additional samples shall be taken. Uniform composite samples may also be used if properly acquired and documented.
2. The soil report must provide interpretation and recommendations for soil amendments, fertilizers, and soil conditioners for use by the architect and the landscape architect.

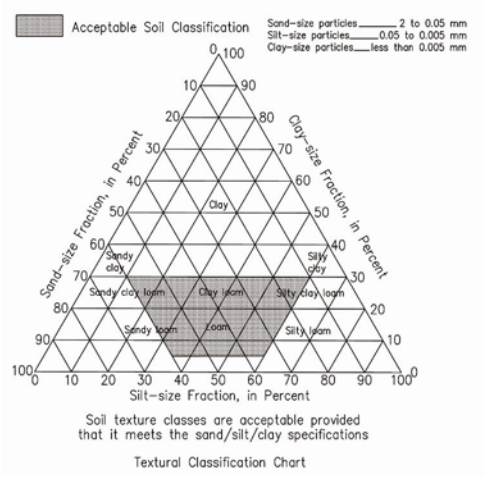
Test Report on Existing Conditions ("Acceptable Levels" refers to the allowable soil specifications prior to being amended)

Soil Test Data

Sample No.	pH(1)	EC(1) Mmhos/cm	SAR(1)	% Sand	% Silt	% Clay	Text(2) Class	%(3) OM	NO3-N(4) ppm	P(5) ppm	K(5) ppm	Fe(5) Ppm
B-8	7.49	0.72	0.62	23	43	34	silty clay	3.4	23.0	45	360	9.59
B-12	7.43	0.53	0.46	19	46	35	silty clay	3.5	24.0	55	405	9.29
Acceptable Level(s)	5.5-8.0	<3.0	<6.0	15-60	10-60	5-30	(2)	>1.0	>20	>11	>130	>10

IMPORTED TOPSOIL – DEFINED (Specification Section 32-9113 – Finish Grading and Soil Preparation)

- Fertile, loose, friable soil, capable of sustaining vigorous plant growth.
- Clean and free from toxic minerals & chemicals, noxious weeds, weed seeds and rock (coarse fragments) or other objectionable/construction materials. Remove any such objects. No more than 2% by volume of soil measuring over 2.0mm.



ACCEPTABLE COMPOSITION

	Composition in Percent		
	Sand	Silt	Clay
Acceptable %	15-60	10-60	5-30

Soil Sample No.	Description of location where sample was taken	History of Use of the soil
B-8	Southeast of proposed building, in proposed parking area	Agricultural field (alfalfa)
B-12	East of the proposed building	Agricultural field (alfalfa)

Documented infiltration rate of test sample(s) based on texture at 90% relative density.

*To the nearest 1/10 of an inch.
(1)saturated soil paste 1:1 soil:water method (please Indicate)
(2)hydrometer method (Acceptable soil- sand:15-60%, silt:10-60%, clay-5-30%)
(3)potassium dichromate method (Walkey-Black) or loss of ignition
(4)chromotropic acid method
(5)AB-DTPA method
--If other methods are used for NO3-N, P, K, and Fe, then note. Changes in acceptable levels shall also be made by the testing laboratory.

Name of Soil Lab performing the analysis	
Address	
Phone Number	
Fax Number	
Sample No.	Infiltration Rate:
	Inches/Hour
	Inches/Hour
	Inches/Hour
	Inches/Hour

Interpretation Summary of Test Results:

Tests indicate that the fertilizer recommendations for the tree/shrub and flower bed areas at the site would be an application of 1-2 lbs of Nitrogen per 1000 sq ft. These fertilizer recommendations are also applicable to lawn areas

Soil Amendments, Fertilizer and Soil Conditioner – Recommendations:

Lawn	Shrubs
0.0 lbs P2O5/1000 sq ft	0.0 lbs P2O5/1000 sq ft
0.0 lbs K2O/1000 sq ft	0.0 lbs K2O/1000 sq ft
1-2 lbs N/1000sq ft	1-2 lbs N/1000sq ft
0.0 lbs Sulfur/1000 sq ft	0.0 lbs Sulfur/1000 sq ft

Long Term (5 Year) Fertilizer and Soil Conditioner – Recommendations: