



Sensapure

Bid Date: 04/12/2022

Addenda #1

The following items are to be included in the proposals for the Sensapure documents.

1. Sensapure soils report
2. Gramoll Sub-contract agreement
3. Site phasing: the utility work and site work will be done on slightly different schedule tracks. A diagram of our plan is included.
4. Schedule: Please note the phasing of the work.
5. Slab on Grade will be completed during the tenant improvement phase of the work and not to be included in proposals due at this time.

Gary Hansen
Project Manager

**REPORT
GEOTECHNICAL STUDY
PROPOSED FREMONT DRIVE BUILDING
ADDITION
1945 FREMONT DRIVE
SALT LAKE CITY, UTAH**

Submitted To:

Gramoll Construction
155 South 750 West
North Salt Lake, Utah 84054

Submitted By:

GSH Geotechnical, Inc.
473 West 4800 South
Salt Lake City, Utah 84123

October 22, 2021

Job No. 0898-003-21

October 22, 2021
Job No. 0898-003-21

Mr. Dustin Gramoll
Gramoll Construction
155 South 750 West
North Salt Lake, Utah 84054

Mr. Gramoll:

Re: Report
Geotechnical Study
Proposed Fremont Drive Building Addition
1945 Fremont Drive
Salt Lake City, Utah

1. INTRODUCTION

1.1 GENERAL

This report presents the results of our geotechnical study performed at the site of the proposed Fremont Drive building addition to be located at 1945 Fremont Drive in Salt Lake City, Utah. The general location of the site with respect to existing roadways, as of 2021, is presented on Figure 1, Vicinity Map. A more detailed layout of the site showing proposed facilities, existing roadways, and the borings drilled in conjunction with this study is presented on Figure 2, Site Plan.

1.2 OBJECTIVES AND SCOPE

The objectives and scope of the study were planned in discussions between Mr. Dustin Gramoll of Gramoll Construction and Mr. Alan Spilker of GSH Geotechnical, Inc. (GSH).

In general, the objectives of this study were to:

1. Define and evaluate the subsurface soil and groundwater conditions across the site.
2. Provide appropriate foundation, earthwork, pavement, and geoseismic recommendations to be utilized in the design and construction of the proposed facilities.

In accomplishing these objectives, our scope has included the following:

1. A field program consisting of the exploration, logging, and sampling of 2 borings.
2. A laboratory testing program.
3. An office program consisting of the correlation of available data, engineering analysis, and the preparation of this summary report.

1.3 AUTHORIZATION

Authorization was provided by returning a signed copy of the Professional Services Agreement No. 21-0915 dated September 10, 2021.

1.4 PROFESSIONAL STATEMENTS

Supporting data upon which our recommendations are based are presented in subsequent sections of this report. Recommendations presented herein are governed by the physical properties of the soils encountered in the exploration borings, projected groundwater conditions, and the layout and design data discussed in Section 2, Proposed Construction. If subsurface conditions other than those described in this report are encountered and/or if design and layout changes are implemented, GSH must be informed so that our recommendations can be reviewed and amended, if necessary.

Our professional services have been performed, our findings developed, and our recommendations prepared in accordance with generally accepted engineering principles and practices in this area at this time.

2. PROPOSED CONSTRUCTION

The project is to consist of the construction of a 10,669 square foot addition to the existing structure with associated pavements. The structure is anticipated to be 1-extended level of concrete tilt-up wall construction supported upon conventional spread and continuous wall footings.

Maximum real column and wall loads are anticipated to be on the order of 150 to 225 kips and 5 to 7 kips per lineal foot, respectively. Real loads are defined as the total of all dead plus frequently applied (reduced) live loads.

Paved parking areas and drive lanes are planned around the structure. Projected traffic in the parking areas is anticipated to consist of a light volume of automobiles and light trucks, occasional medium-weight trucks, and no heavy-weight trucks. Proposed traffic in the drive lanes is anticipated to consist of a moderate volume of automobiles and light trucks, a light volume of medium-weight trucks, and occasional heavy-weight trucks.

Site development will require some earthwork in the form of minor cutting and filling. At this time, we anticipate that maximum site grading cuts and fills, excluding utilities, will be on the order of 1 to 3 feet.

3. SITE INVESTIGATIONS

3.1 GENERAL

Subsurface conditions in unexplored locations or at other times may vary from those encountered at specific boring locations. If such variations are noted during construction or if project development plans are changed, GSH must review the changes and amend our recommendations, if necessary.

Boring locations were established by estimating distances and angles from site landmarks. If increased accuracy is desired by the client, we recommend that the boring locations and elevations be surveyed.

3.2 FIELD PROGRAM

To define and evaluate the subsurface soil and groundwater conditions across the site, 2 borings were completed within the accessible areas. These borings were completed to depths ranging from 16.5 to 46.5 feet with a truck-mounted drill rig equipped with hollow-stem augers. The approximate locations of the borings are presented on Figure 2.

The field portion of our study was under the direct control and continual supervision of an experienced member of our geotechnical staff. During the course of the drilling operations, a continuous log of the subsurface conditions encountered was maintained. In addition, samples of the typical soils encountered were obtained for subsequent laboratory testing and examination. The soils were classified in the field based upon visual and textural examination. These classifications were supplemented by subsequent inspection and testing in our laboratory. Graphical representation of the subsurface conditions encountered is presented on Figures 3A and 3B, Boring Logs. Soils were classified in accordance with the nomenclature described on Figure 4, Key to Boring Log (USCS).

A 3.0-inch outside diameter, 2.42-inch inside diameter (Dames & Moore) and a 2.0-inch outside diameter, 1.38-inch inside diameter drive sampler (SPT) were utilized at select locations and depths. The blow counts recorded on the boring logs were those required to drive the sampler 12 inches with a 140-pound hammer dropping 30 inches.

Following completion of exploration operations, 1.25-inch diameter slotted PVC pipe was installed in both borings to provide a means of monitoring the groundwater fluctuations. The borings were backfilled with auger cuttings.

3.3 LABORATORY TESTING

3.3.1 General

To provide data necessary for our engineering analysis, a laboratory testing program was performed. This program included moisture, density, partial gradation, Atterberg limits, consolidation, and chemical tests. The following paragraphs describe the tests and summarize the test data.

3.3.2 Moisture and Density Tests

To provide index parameters and to correlate other test data, moisture and density tests were performed on selected samples. The results of these tests are presented on the boring logs, Figures 3A and 3B.

3.3.3 Partial Gradation Tests

To aid in classifying the granular soils, partial gradation tests were performed. Results of the tests are tabulated below and presented on the boring logs, Figures 3A and 3B.

Boring No.	Depth (feet)	Percent Passing No. 200 Sieve	Moisture Content Percent	Soil Classification
B-1	20.0	56.4	24.6	SM/SC*
B-1	40.0	25.9	24.6	SM/SC

*sample contained thin layers of clay

3.3.4 Atterberg Limits Test

To aid in classifying the soils, an Atterberg limits test was performed on a sample of the fine-grained cohesive soils. Results of the test are tabulated below and presented on the boring logs, Figures 3A and 3B:

Boring No.	Depth (feet)	Liquid Limit (percent)	Plastic Limit (percent)	Plasticity Index (percent)	Soil Classification
B-1	10.0	35	20	15	CL
B-1	35.0	37	19	18	CL

3.3.5 Consolidation Tests

To provide data necessary for our settlement analysis, consolidation testing was performed on 2 representative samples of the natural fine-grained clay soils encountered at the site. The results of these tests indicate that the samples tested were moderately over-consolidated and will exhibit

moderate strength and compressibility characteristics under the anticipated loading. Detailed results of the tests are maintained within our files and can be transmitted to you, upon your request.

3.3.6 Chemical Tests

To determine if the site soils will react detrimentally with concrete, chemical tests were performed on a representative sample of the near-surface soil encountered at the site. The results of the chemical tests are tabulated below:

Boring No.	Depth (feet)	Soil Classification	pH	Total Water Soluble Sulfate (mg/kg-dry)
B-1	2.5	SP (Fill)	9.86	519

4. SITE CONDITIONS

4.1 SURFACE

The site is located at 1945 Fremont Drive in Salt Lake City, Utah. The site is currently developed with parking areas and drive lanes associated with the existing structure. The topography of the site is relatively flat, grading down to the north with a total relief of less than 2 feet. Site vegetation consists of landscaped areas around the structure.

The site is bounded to the north by asphalt parking and drive lane areas as well as vacant/undeveloped brush land; to the east by a commercial structure along with asphalt parking and drive lane areas; to the south by State Highway 201; and to the west by asphalt parking and drive lanes followed by commercial/industrial structures.

4.2 SUBSURFACE SOIL

The following paragraphs provide generalized descriptions of the subsurface profiles and soil conditions encountered within the borings conducted during this study. As previously noted, soil conditions may vary in unexplored locations.

The borings were completed to depths ranging from 16.5 to 46.5 feet. The soil conditions encountered in each of the borings, to the depths completed, were generally similar across the boring locations.

- The majority of the borings were performed within existing drive lane and parking lot areas and encountered up to 4 inches of asphalt.
- Non-engineered fill soils were encountered in both borings, to depths ranging from 2.0 to 4.5 feet beneath the existing ground surface. The non-engineered fill soils primarily consisted of sand with varying clay, silt, and gravel content.

- Natural soils were encountered below the non-engineered fill in both borings. The natural soils consisted primarily of clay with varying silt and sand content with layers of sand with varying clay and silt content beginning at a depth of approximately 19 feet.

The natural clay soils were very soft to stiff, slightly moist to saturated, gray in color, and moderately over-consolidated. The natural clay soils are anticipated to exhibit moderate strength and compressibility characteristics under the anticipated loading.

The natural sand soils were loose to medium dense, saturated, and gray in color. The natural sand soils are anticipated to exhibit moderately high strength and moderately low compressibility characteristics under the anticipated load range.

For a more descriptive interpretation of subsurface conditions, please refer to Figures 3A and 3B, Boring Logs. The lines designating the interface between soil types on the boring logs generally represent approximate boundaries. In situ, the transition between soil types may be gradual.

4.3 GROUNDWATER

On October 20, 2021 (15 days following drilling), groundwater was measured within the PVC pipes installed as tabulated below:

Boring No.	Groundwater Depth (feet)
	October 20, 2021
B-1	4.1
B-2	6.0

Groundwater levels vary with changes in season and rainfall, construction activity, irrigation, snow melt, surface water run-off, and other site-specific factors.

5. DISCUSSIONS AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

The proposed structures may be supported upon conventional spread and continuous wall foundations supported upon suitable natural soils and/or structural fill extending to suitable natural soils.

The most significant geotechnical aspects at the site are:

1. The existing pavements and utilities on the site that are to be demolished/relocated.
2. The existing non-engineered fills across much of the site.
3. The relatively shallow depth to groundwater.
4. The potentially liquefiable sand layers encountered in Boring B-1.

Prior to proceeding with construction, demolition and removal of the existing pavements, surface vegetation, root systems, topsoil, non-engineered fill, and any deleterious materials from beneath an area extending out at least 5 feet from the perimeter of the proposed structure footprints and 3 feet beyond rigid pavements and exterior flatwork areas will be required. All existing utility locations should be reviewed to assess their impact on the proposed construction and abandoned and/or relocated as appropriate.

Due to the developed nature of this site and the surrounding area, additional non-engineered fills may exist in unexplored areas of the site. Based on our experience, non-engineered fills are frequently erratic in composition and consistency. All surficial loose/disturbed soils and non-engineered fills must be removed below all footings, floor slabs, and rigid pavements. The in situ, non-engineered fills may remain below flexible pavements if free of any deleterious materials, of limited thickness, and if properly prepared, as discussed later in this report.

On-site non-engineered fill soils encountered were primarily granular. On-site granular soils, including existing non-engineered fills, may be re-utilized as structural site grading fill if they meet the criteria for such, as stated later in this report.

Groundwater was measured as shallow as 4.1 feet below the ground surface. GSH recommends placing floor slabs no closer than 4 feet from the highest groundwater elevation. Site grading fill may be utilized to raise the overall grade to achieve the required separation between the floor slab and the highest groundwater elevation.

Proof rolling of the natural clay subgrade must not be completed if cuts extend to within 1 foot of the groundwater surface. In areas where cuts are to extend to within 1 foot of the groundwater surface, stabilization must be anticipated.

To reduce disturbance of the natural soils during excavation, it is recommended that low-impact, track-mounted equipment with smooth edge buckets/blades be utilized.

Loose to medium dense, saturated sand layers were encountered in Boring B-1. Due to liquefiable soils being present, a site-specific response analysis may be required. Section 20.3.1 of ASCE 7-16 provides exception to this requirement under certain conditions. These options will need to be

reviewed and evaluated by the project structural engineer. If needed, GSH can provide additional information and analysis, including a complete site-specific response analysis.

Detailed discussions pertaining to earthwork, foundations, pavements, and the geoseismic setting of the site are presented in the following sections.

5.2 EARTHWORK

5.2.1 Site Preparation

Initial site preparation will consist of the demolition and removal of the existing pavements, associated debris, non-engineered fills, surface vegetation, root systems, topsoil, and any deleterious materials from beneath an area extending out at least 5 feet from the perimeter of the proposed structure footprint and 3 feet beyond rigid pavements and exterior flatwork areas. All existing utility locations should be reviewed to assess their impact on the proposed construction and abandoned and/or relocated as appropriate.

In situ, non-engineered fills may remain below flexible pavements if free of debris and deleterious materials, less than 3 feet in thickness, and if properly prepared. Proper preparation below pavements will consist of the scarification of the upper 12 inches below asphalt concrete (flexible pavement), followed by moisture preparation and re-compaction to the requirements of structural fill. Even with proper preparation, pavements established overlying non-engineered fills may encounter some long-term movements unless the non-engineered fills are completely removed.

It must be noted that from a handling and compaction standpoint, soils containing high amounts of fines (silts and clays) are inherently more difficult to rework and are very sensitive to changes in moisture content, requiring very close moisture control during placement and compaction. This will be very difficult, if not impossible, during wet and cold periods of the year. Additionally, the on-site soils are likely above optimum moisture content for compacting at present and would require some drying prior to re-compacting.

Subsequent to stripping and prior to the placement of floor slabs, foundations, structural site grading fills, exterior flatwork, and pavements, the exposed subgrade must be proof rolled by passing moderate-weight rubber tire-mounted construction equipment over the surface at least twice. If excessively soft or otherwise unsuitable soils are encountered beneath footings, they must be completely removed. If removal depth required is greater than 2 feet below footings, GSH must be notified to provide further recommendations. In pavement, floor slab, and outside flatwork areas, unsuitable natural soils should be removed to a maximum depth of 2 feet and replaced with compacted granular structural fill.

Subgrade preparation as described must be completed prior to placing overlying structural site grading fills.

Due to the relatively high groundwater, site grading cuts should be kept to a minimum. Cuts extending to within 1 foot of the groundwater elevation will likely disturb the natural clay soils and proof rolling must not be completed. Stabilization must be anticipated in areas where cuts are to extend to within 1 foot of the groundwater surface.

To reduce disturbance of the natural soils during excavation, it is recommended that low-impact, track-mounted equipment with smooth edge buckets/blades be utilized.

GSH must be notified prior to the placement of structural site grading fills, floor slabs, footings, and pavements to verify that all loose/disturbed soils and non-engineered fills have been completely removed and/or properly prepared.

5.2.2 Temporary Excavations

Temporary excavations up to 8 feet deep in fine-grained cohesive soils, above or below the water table, may be constructed with sideslopes no steeper than one-half horizontal to one vertical (0.5H:1.0V). Excavations deeper than 8 feet are not anticipated at the site.

For granular (cohesionless) soils, construction excavations above the water table, not exceeding 4 feet, should be no steeper than one-half horizontal to one vertical (0.5H:1.0V). For excavations up to 8 feet, in granular soils and above the water table, the slopes should be no steeper than one horizontal to one vertical (1H:1V). Excavations encountering saturated cohesionless soils will be very difficult and will require very flat sideslopes and/or shoring, bracing, and dewatering.

To reduce disturbance of the natural soils during excavation, it is recommended that low-impact, track-mounted equipment with smooth edge buckets/blades be utilized.

The static groundwater table was encountered as shallow as 4.1 feet below the existing surface and may be shallower with seasonal fluctuations. Consideration for dewatering of utility trenches, excavations for the removal of non-engineered fill, and other excavations below this level should be incorporated into the design and bidding process.

All excavations must be inspected periodically by qualified personnel. If any signs of instability or excessive sloughing are noted, immediate remedial action must be initiated.

5.2.3 Structural Fill

Structural fill is defined as all fill which will ultimately be subjected to structural loadings, such as imposed by footings, floor slabs, pavements, etc. Structural fill will be required as backfill over foundations and utilities, as site grading fill, and as replacement fill below footings. All structural fill must be free of surface vegetation, root systems, rubbish, topsoil, frozen soil, and other deleterious materials.

Structural site grading fill is defined as structural fill placed over relatively large open areas to raise the overall grade. For structural site grading fill, the maximum particle size shall not exceed 4 inches; although, occasional larger particles, not exceeding 8 inches in diameter, may be incorporated if placed randomly in a manner such that “honeycombing” does not occur and the desired degree of compaction can be achieved. The maximum particle size within structural fill placed within confined areas shall be restricted to 2 inches.

On-site soils, including existing non-engineered fills, may be re-utilized as structural site grading fill if they do not contain construction debris or deleterious material and meet the requirements of structural fill. Fine-grained soils will require very close moisture control and may be very difficult, if not impossible, to properly place and compact during wet and cold periods of the year.

Imported structural fill below foundations and floor slabs shall consist of a well graded sand and gravel mixture with less than 30 percent retained on the three-quarter-inch sieve and less than 20 percent passing the No. 200 Sieve (clays and silts).

To stabilize soft subgrade conditions (if encountered) or where structural fill is required to be placed closer than 2.0 feet above the water table at the time of construction, a mixture of coarse angular gravels and cobbles and/or 1.5- to 2.0-inch gravel (stabilizing fill) should be utilized. It may also help to utilize a stabilization fabric, such as Mirafi 600X or equivalent, placed on the natural ground if 1.5- to 2.0-inch gravel is used as stabilizing fill.

5.2.4 Fill Placement and Compaction

All structural fill shall be placed in lifts not exceeding 8 inches in loose thickness. Structural fills shall be compacted in accordance with the percent of the maximum dry density as determined by the AASHTO¹ T180 (ASTM² D1557) compaction criteria in accordance with the following table:

Location	Total Fill Thickness (feet)	Minimum Percentage of Maximum Dry Density
Beneath an area extending at least 5 feet beyond the perimeter of the structure	0 to 10	95
Site grading fills outside area defined above	0 to 5	90
Site grading fills outside area defined above	5 to 10	95
Utility trenches within structural areas	--	96
Road base	--	96

¹ American Association of State Highway and Transportation Officials

² American Society for Testing and Materials

Structural fills greater than 10 feet thick are not anticipated at the site.

Subsequent to stripping and prior to the placement of structural site grading fill, the subgrade shall be prepared as discussed in Section 5.2.1, Site Preparation, of this report. In confined areas, subgrade preparation should consist of the removal of all loose or disturbed soils.

Coarse angular gravel and cobble mixtures (stabilizing fill), if utilized, shall be end dumped, spread to a maximum loose lift thickness of 15 inches, and compacted by dropping a backhoe bucket onto the surface continuously at least twice. As an alternative, the stabilizing fill may be compacted by passing moderately heavy construction equipment or large self-propelled compaction equipment over the surface at least twice. Subsequent fill material placed over the coarse gravels and cobbles shall be adequately compacted so that the “fines” are “worked into” the voids in the underlying coarser gravels and cobbles. Where soil fill materials are to be placed directly over more than about 18 inches of clean gravel, a separation geofabric, such as Mirafi 140N or equivalent, is recommended to be placed between the gravel and subsequent soil fills.

Non-structural fill may be placed in lifts not exceeding 12 inches in loose thickness and compacted by passing construction, spreading, or hauling equipment over the surface at least twice.

5.2.5 Utility Trenches

All utility trench backfill material below structurally loaded facilities (footings, floor slabs, flatwork, pavements, etc.) shall be placed at the same density requirements established for structural fill. If the surface of the backfill becomes disturbed during the course of construction, the backfill shall be proof rolled and/or properly compacted prior to the construction of any exterior flatwork over a backfilled trench. Proof rolling shall be performed by passing moderately loaded rubber tire-mounted construction equipment uniformly over the surface at least twice. If excessively loose or soft areas are encountered during proof rolling, they shall be removed to a maximum depth of 2 feet below design finish grade and replaced with structural fill.

Many utility companies and City-County governments are now requiring that Type A-1a or A-1b (AASHTO Designation – granular soils with limited fines) soils be used as backfill over utilities. These organizations are also requiring that in public roadways, the backfill over major utilities be compacted over the full depth of fill to at least 96 percent of the maximum dry density as determined by the AASHTO T180 (ASTM D1557) method of compaction. GSH recommends that as the major utilities continue onto the site that these compaction specifications are followed.

Fine-grained soils, such as silts and clays, are not recommended for utility trench backfill in structural areas.

The static groundwater table was encountered as shallow as 4.1 feet below the existing surface and may be shallower with seasonal fluctuations. Dewatering of utility trenches and other excavations below this level should be anticipated.

To reduce disturbance of the natural soils during excavation, it is recommended that low-impact, track-mounted equipment with smooth edge buckets/blades be utilized.

5.3 GROUNDWATER

On October 20, 2021 (15 days following drilling), groundwater was measured within the PVC pipes installed as tabulated below:

Boring No.	Groundwater Depth (feet)
	October 20, 2021
B-1	4.1
B-2	6.0

Based on the anticipated cuts necessary to reach design subgrades, we anticipate temporary and permanent dewatering may be necessary. Floor slabs must be placed a minimum of 4 feet from the stabilized groundwater elevation. Site grading fill may be utilized to raise the overall grade to achieve the required separation between the floor slab and the highest groundwater elevation.

The groundwater measurements presented are conditions at the time of the field exploration and may not be representative of other times or locations. Groundwater levels may vary seasonally and with precipitation, as well as other factors including irrigation. Evaluation of these factors is beyond the scope of this study. Groundwater levels may, therefore, be at shallower or deeper depths than those measured during this study, including during construction and over the life of the structure.

The extent and nature of any dewatering required during construction will be dependent on the actual groundwater conditions prevalent at the time of construction and the effectiveness of construction drainage to prevent run-off into open excavations.

5.4 SPREAD AND CONTINUOUS WALL FOUNDATIONS

5.4.1 Design Data

The results of our analysis indicate that the proposed structures may be supported upon conventional spread and continuous wall foundations established upon suitable natural soils and/or structural fill extending to suitable natural soils. Under no circumstances shall foundations be established over non-engineered fills, loose or disturbed soils, topsoil, surface vegetation, root systems, rubbish, construction debris, other deleterious materials, frozen soils, or within ponded water. More heavily loaded footings will require a certain amount of granular structural replacement fill as specified in Section 5.4.3, Settlements, of this report. For design, the following parameters are provided:

Minimum Recommended Depth of Embedment for Frost Protection	- 30 inches
Minimum Recommended Depth of Embedment for Non-frost Conditions	- 15 inches
Recommended Minimum Width for Continuous Wall Footings	- 18 inches
Minimum Recommended Width for Isolated Spread Footings	- 24 inches
Recommended Net Bearing Capacity for Real Load Conditions	- 2,500 pounds per square foot
Bearing Capacity Increase for Seismic Loading	- 50 percent

The term “net bearing capacity” refers to the allowable pressure imposed by the portion of the structure located above lowest adjacent final grade. Therefore, the weight of the footing and backfill to lowest adjacent final grade need not be considered. Real loads are defined as the total of all dead plus frequently applied live loads. Total load includes all dead and live loads, including seismic and wind.

5.4.2 Installation

Under no circumstances shall the footings be installed upon non-engineered fills, loose or disturbed soils, topsoil, surface vegetation, root systems, rubbish, construction debris, or other deleterious materials. If unsuitable soils are encountered, they must be removed and replaced with compacted granular fill. If granular soils become loose or disturbed, they must be recompacted prior to pouring the concrete.

The width of structural replacement fill below footings should be equal to the width of the footing plus one foot for each foot of fill thickness.

5.4.3 Settlements

Granular structural replacement fill will be required under more heavily loaded footings. For the required amount, refer to the table on the following page:

Foundations	Loading	Minimum Thickness of Replacement Structural Granular Fill (feet)
Wall	Up to 8 kips per lineal foot	0
Spread	Up to 140 kips	0
	140 kips to 225 kips	1.0

Based on column loadings, soil bearing capacities, and the foundation recommendations as discussed above, we expect primary total settlement beneath individual foundations to be less than one inch.

The amount of differential settlement is difficult to predict because the subsurface and foundation loading conditions can vary considerably across the site. However, we anticipate differential settlement between adjacent foundations could vary from 0.5 to 0.75 inch. The final deflected shape of the structure will be dependent on actual foundation locations and loading.

5.5 LATERAL RESISTANCE

Lateral loads imposed upon foundations due to wind or seismic forces may be resisted by the development of passive earth pressures and friction between the base of the footings and the supporting soils. In determining frictional resistance, a coefficient of friction of 0.35 may be utilized for the footing interface with in situ natural clay soils and 0.40 for footing interface with natural granular soils or granular structural fill. Passive resistance provided by properly placed and compacted granular structural fill above the water table may be considered equivalent to a fluid with a density of 300 pounds per cubic foot. Below the water table, this granular soil should be considered equivalent to a fluid with a density of 150 pounds per cubic foot.

A combination of passive earth resistance and friction may be utilized provided that the friction component of the total is divided by 1.5.

5.6 FLOOR SLABS

Floor slabs may be established upon suitable natural subgrade soils or structural fill extending to suitable natural soils. Under no circumstances shall floor slabs be established directly over non-engineered fills, loose or disturbed soils, sod, rubbish, construction debris, other deleterious materials, frozen soils, or within ponded water.

Additionally, GSH recommends that floor slabs be constructed a minimum of 4.0 feet from the stabilized groundwater elevation. Site grading fill may be utilized to raise the overall grade to achieve the required separation between the floor slab and the highest groundwater elevation.

To facilitate curing of the concrete and to provide a capillary moisture break, it is recommended that floor slabs be directly underlain by at least 4 inches of “free-draining” fill, such as “pea” gravel or three-quarters to one inch minus clean gap-graded gravel.

Settlement of lightly loaded floor slabs designed according to previous recommendations (average uniform pressure of 200 pounds per square foot or less) is anticipated to be less than one-quarter of an inch.

5.7 PAVEMENTS

The natural clay soils and non-engineered fills will exhibit poor pavement support characteristics when saturated. All pavement areas must be prepared as previously discussed (see Section 5.2.1, Site Preparation). Under no circumstances shall pavements be established over unprepared non-engineered fills, loose or disturbed soils, topsoil, surface vegetation, root systems, rubbish, construction debris, other deleterious materials, frozen soils, or within ponded water. With the subgrade soils and the projected traffic as discussed in Section 2, Proposed Construction, the following pavement sections are recommended:

Parking Areas

(Light Volume of Automobiles and Light Trucks,
 Occasional Medium-Weight Trucks,
 and No Heavyweight Trucks)
 [1-3 equivalent 18-kip axle loads per day]

Flexible Pavements: (Asphalt Concrete)

3.0 inches	Asphalt concrete
8.0 inches	Aggregate base
Over	Properly prepared fills, natural subgrade soils, and/or structural site grading fill extending to properly prepared fills and/or natural subgrade soils

Rigid Pavements:

(Non-reinforced Concrete)

5.0 inches	Portland cement concrete (non-reinforced)
5.0 inches	Aggregate base
Over	Properly prepared natural subgrade soils, and/or structural site grading fill extending to properly prepared natural subgrade soils

Drive Lanes

(Moderate Volume of Automobiles and Light Trucks,
 Light Volume of Medium-Weight Trucks,
 and Occasional Heavyweight Trucks)
 [6 equivalent 18-kip axle loads per day]

Flexible Pavements:

(Asphalt Concrete)

3.0 inches	Asphalt concrete
9.0 inches	Aggregate base
Over	Properly prepared fills, natural subgrade soils, and/or structural site grading fill extending to properly prepared fills and/or natural subgrade soils

Rigid Pavements:

(Non-reinforced Concrete)

6.0 inches	Portland cement concrete (non-reinforced)
5.0 inches	Aggregate base
Over	Properly prepared natural subgrade soils, and/or structural site grading fill extending to properly prepared natural subgrade soils

For dumpster pads, we recommend a pavement section consisting of 8.0 inches of Portland cement concrete, 12.0 inches of aggregate base, over properly prepared natural subgrade or site grading

structural fills. Dumpster pads should not be constructed overlying non-engineered fills under any circumstances.

These above rigid pavement sections are for non-reinforced Portland cement concrete. Concrete should be designed in accordance with the American Concrete Institute (ACI) and joint details should conform to the Portland Cement Association (PCA) guidelines. The concrete should have a minimum 28-day unconfined compressive strength of 4,000 pounds per square inch and contain 6 percent \pm 1 percent air-entrainment.

The crushed stone should conform to applicable sections of the current Utah Department of Transportation (UDOT) Standard Specifications. All asphalt material and paving operations should meet applicable specifications of the Asphalt Institute and UDOT. A GSH technician shall observe placement and perform density testing of the base course material and asphalt.

Please note that the recommended pavement section is based on estimated post-construction traffic loading. If the pavement is to be constructed and utilized by construction traffic, the above pavement section may prove insufficient for heavy truck traffic, such as concrete trucks or tractor-trailers used for construction delivery. Unexpected distress, reduced pavement life, and/or premature failure of the pavement section could result if subjected to heavy construction traffic and the owner should be made aware of this risk. If the estimated traffic loading stated herein is not correct, GSH must review actual pavement loading conditions to determine if revisions to these recommendations are warranted.

5.8 CEMENT TYPES

The laboratory tests indicate that the natural clay soils tested contain a moderate amount of water soluble sulfates. Based on our test results, concrete in contact with the on-site soil will have a moderate potential for sulfate reaction (ACI 318, Table 4.3.1). To achieve the required protection against sulfate-related corrosion, we recommend a maximum water-to-cement ratio of 0.5 (by weight, normal weight aggregate concrete) and using Type II cement in concrete to obtain a minimum compressive strength of 4,000 pounds per square inch (psi). Details can be found in the above ACI reference and in the Portland Cement Association publication, "Design and Control of Concrete Admixtures."

5.9 GEOSEISMIC SETTING

5.9.1 General

Utah municipalities have adopted the International Building Code (IBC) 2018. The IBC 2018 code refers to ASCE 7-16 Minimum Design Loads and Associated Criteria for Buildings and Other Structures (ASCE 7-16) determines the seismic hazard for a site based upon mapping of bedrock accelerations prepared by the United States Geologic Survey (USGS) and the soil site class. The USGS values are presented on maps incorporated into the IBC code and are also available based on latitude and longitude coordinates (grid points).

5.9.2 Faulting

Based on our review of available literature, no active faults pass through or immediately adjacent to the site. The nearest active mapped fault consists of the Taylorsville Fault of the West Valley Fault Zone which passes directly through the eastern portion of the site. A surface fault rupture hazard study was not included in the scope of this project.

5.9.3 Site Class

For dynamic structural analysis, the Site Class D – Default Soil Profile as defined in Chapter 20 of ASCE 7-16 (per Section 1613.3.2, Site Class Definitions, of IBC 2018) can be utilized. If a measured site class is desired based on the project structural engineer's evaluation and recommendations, additional testing and analysis can be completed by GSH to determine the measured site class. Please contact GSH for additional information.

Due to liquefiable soils being present, a site-specific response analysis may be required. Section 20.3.1 of ASCE 7-16 provides exception to this requirement under certain conditions. These options will need to be reviewed and evaluated by the project structural engineer. If needed, GSH can provide additional information and analysis, including a complete site-specific response analysis.

5.9.4 Ground Motions

The IBC 2018 code is based on USGS mapping, which provides values of short and long period accelerations for average bedrock values for the Western United States and must be corrected for local soil conditions. The following table summarizes the peak ground and short and long period accelerations for the MCE event and incorporates the appropriate soil amplification factor for a Site Class D – Default* Soil Profile. Based on the site latitude and longitude (40.7266 degrees north and 111.9549 degrees west, respectively) and Risk Category I, the values for this site are tabulated below.

Spectral Acceleration Value, T	Bedrock Boundary [mapped values] (% g)	Site Coefficient	Site Class D - Default* [adjusted for site class effects] (% g)	Design Values** (% g)
0.2 Seconds (Short Period Acceleration)	$S_S = 150.7$	$F_a = 1.200$	$S_{MS} = 180.9$	$S_{DS} = 120.6$
1.0 Second (Long Period Acceleration)	$S_1 = 52.9$	$F_v = 1.771$	$S_{M1} = 93.7$	$S_{D1} = 62.5$

- * If a measured site class in accordance with IBC 2018/ ASCE 7-16 is beneficial based on the project structural engineers review, please contact GSH for additional options for obtaining this measured site class.
- **IBC 2018/ASCE 7-16 may require a site-specific study based on the project structural engineer's evaluation and recommendations. If needed, GSH can provide additional information and analysis including a complete site-specific study in accordance with chapter 21 of ASCE 7-16.

5.9.5 Liquefaction

The site is located in an area that has been identified by the Utah Geological Survey (UGS) as being a “high” liquefaction potential zone. Liquefaction is defined as the condition when saturated, loose, granular soils lose their support capabilities because of excessive pore water pressure, which develops during a seismic event. Clayey soils, even if saturated, will generally not liquefy during a major seismic event.

Calculations were performed using the procedures described in the 2008 Soil Liquefaction During Earthquakes Monograph by Idriss and Boulanger³. Our calculations indicate the loose to medium dense, saturated sand layers encountered in Boring B-1 could liquefy during the design seismic event. Calculated settlement associated with the liquefaction of each layer within the borings was less than 1.2 inches. This magnitude of settlement must be evaluated by the structural engineer to design for life safety. Additionally, lateral spread and ground rupture are unlikely to occur.

5.10 SITE VISITS

GSH must verify that all topsoil/disturbed soils and any other unsuitable soils have been removed, that non-engineered fills have been removed and/or properly prepared, and that suitable soils have been encountered prior to placing site grading fills, footings, slabs, and pavements. Additionally, GSH must observe fill placement and verify in-place moisture content and density of fill materials placed at the site.

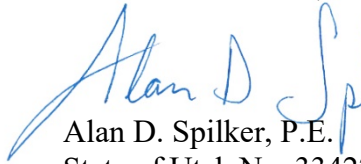
³ Idriss, I. M., and Boulanger, R. W. (2008), Soil liquefaction during earthquakes: Monograph MNO-12, Earthquake Engineering Research Institute, Oakland, CA, 261 pp.

6. CLOSURE

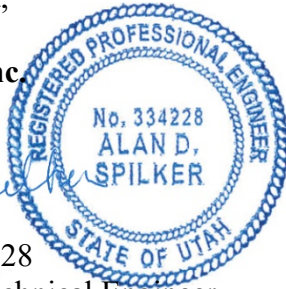
If you have any questions or would like to discuss these items further, please feel free to contact us at (801) 685-9190.

Respectfully submitted,

GSH Geotechnical, Inc.

A handwritten signature in blue ink that reads "Alan D. Spilker".

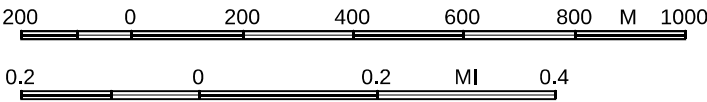
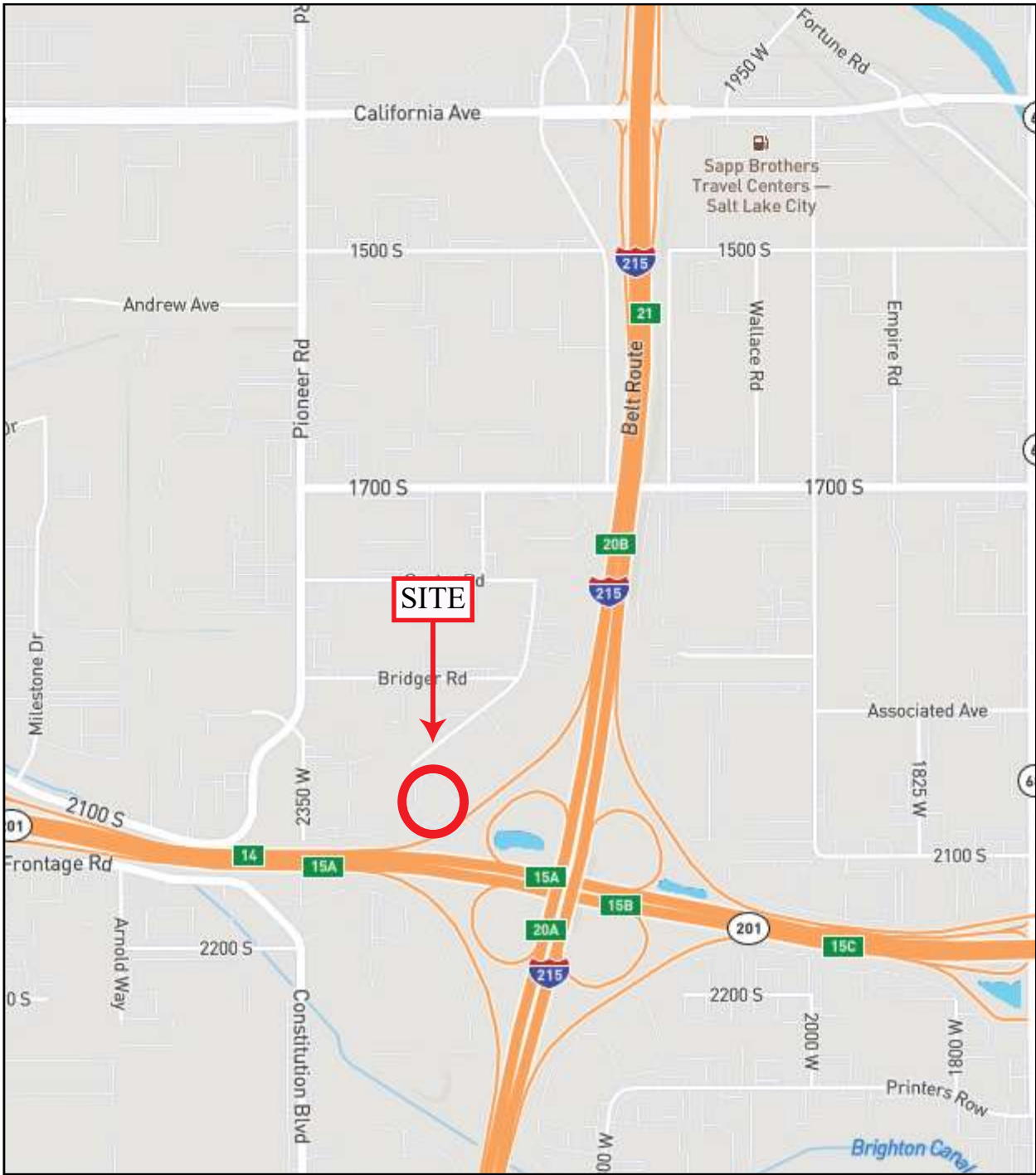
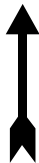
Alan D. Spilker, P.E.
State of Utah No. 334228
President/Senior Geotechnical Engineer



ADS:ea

Encl. Figure 1, Vicinity Map
Figure 2, Site Plan
Figures 3A and 3B, Boring Logs
Figure 4, Key to Boring Log (USCS)

Addressee (email)



REFERENCE:
ALL TRAILS - NATIONAL GEOGRAPHIC TERRAIN
DATED 2021

FIGURE 1
VICINITY MAP
 GSH



REFERENCE:
ADAPTED FROM DRAWING ENTITLED
“DUSTIN GRAMOLL - 1945 FREMONT”
BY AEURBIA ARCHITECTS AND ENGINEERS, DATED 6/11/2021



FIGURE 2
SITE PLAN





GSH

BORING LOG

Page: 1 of 1

BORING: B-1

CLIENT: Gramoll Construction

PROJECT NUMBER: 0898-003-21

PROJECT: Fremont Drive Building Addition

DATE STARTED: 10/5/21

DATE FINISHED: 10/5/21

LOCATION: 1945 Fremont Drive, Salt Lake City, Utah

GSH FIELD REP.: AL

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger

HAMMER: Automatic

WEIGHT: 140 lbs

DROP: 30"

GROUNDWATER DEPTH: 4.1' (10/20/21)

ELEVATION: ---

WATER LEVEL	U S C S	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
		ASPHALT 4"									
	SP/ SC FILL	FINE GRAVELLY FINE TO COARSE SAND, FILL with some clay; brown									dry loose
	SP FILL	FINE TO COARSE SAND, FILL with trace clay and occasional layers of silty clay up to 2" thick; gray		9							moist loose
	CL	SILTY CLAY with trace fine sand and occasional layers of fine to coarse sand up to 2" thick; gray	5	3							saturated soft
			10	2					35	15	very soft
			15	1							
	SM/ SC	SILTY/CLAYEY FINE TO MEDIUM SAND with occasional layers of silty clay up to 2" thick; gray	20	14		24.6		56.4			saturated medium dense
	CL	SILTY CLAY with fine sand and occasional layers of silty fine to medium sand up to 3" thick; gray	25								saturated stiff

See Subsurface Conditions section in the report for additional information.

FIGURE 3A



GSH

BORING LOG

Page: 2 of 1

BORING: B-1

CLIENT: Gramoll Construction

PROJECT NUMBER: 0898-003-21

PROJECT: Fremont Drive Building Addition

DATE STARTED: 10/5/21

DATE FINISHED: 10/5/21

WATER LEVEL	U S C S	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
			25	10							saturated medium dense
	SM/ SC	SILTY FINE TO MEDIUM SAND with some clay and layers of silty clay up to 2" thick; gray	30	23							saturated very soft
	CL	SILTY CLAY with trace fine sand and occasional layers of fine sand up to 1/4" thick; gray	35	2					37	18	saturated loose
	SM/ SC	SILTY FINE TO COARSE SAND with some clay; gray	40	9		24.6		25.9			saturated medium stiff
	CL	SILTY CLAY with some fine sand; gray	45	7							
		End of Exploration at 46.5'. Installed 1.25" diameter slotted PVC pipe to 46.5'.	50								

See Subsurface Conditions section in the report for additional information.

FIGURE 3A
(continued)



GSH

BORING LOG

Page: 1 of 1

BORING: B-2

CLIENT: Gramoll Construction

PROJECT NUMBER: 0898-003-21

PROJECT: Fremont Drive Building Addition

DATE STARTED: 10/5/21

DATE FINISHED: 10/5/21

LOCATION: 1945 Fremont Drive, Salt Lake City, Utah

GSH FIELD REP.: AL

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger

HAMMER: Automatic

WEIGHT: 140 lbs

DROP: 30"

GROUNDWATER DEPTH: 6.0' (10/20/21)

ELEVATION: ---

WATER LEVEL	U S C S	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
		ASPHALT 4"									
	SP/ SC FILL	FINE GRAVELLY FINE TO COARSE SAND, FILL with some clay; brown									dry medium dense
	CL	SILTY CLAY with some fine sand; gray		14							slightly moist stiff
		grades fine to medium sandy clay	5	8							moist medium stiff saturated
		grades silty clay with trace fine sand	10	7							
			15	10		36.9	85				stiff
		End of Exploration at 16.5'. No groundwater encountered at time of drilling. Installed 1.25" diameter slotted PVC pipe to 16.5'.									
			20								
			25								

See Subsurface Conditions section in the report for additional information.

FIGURE 3B

CLIENT: Gramoll Construction
PROJECT: Fremont Drive Building Addition
PROJECT NUMBER: 0898-003-21

KEY TO BORING LOG

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
-------------	------	-------------	-------------	------------	---------------	--------------	-------------------	---------------	------------------	------------------	---------

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

COLUMN DESCRIPTIONS

- ① **Water Level:** Depth to measured groundwater table. See symbol below.
- ② **USCS:** (Unified Soil Classification System) Description of soils encountered; typical symbols are explained below.
- ③ **Description:** Description of material encountered; may include color, moisture, grain size, density/consistency.
- ④ **Depth (ft.):** Depth in feet below the ground surface.
- ⑤ **Blow Count:** Number of blows to advance sampler 12" beyond first 6", using a 140-lb hammer with 30" drop.
- ⑥ **Sample Symbol:** Type of soil sample collected at depth interval shown; sampler symbols are explained below.
- ⑦ **Moisture (%):** Water content of soil sample measured in laboratory; expressed as percentage of dryweight of
- ⑧ **Dry Density (pcf):** The density of a soil measured in laboratory; expressed in pounds per cubic foot.
- ⑨ **% Passing 200:** Fines content of soils sample passing a No. 200 sieve; expressed as a percentage.
- ⑩ **Liquid Limit (%):** Water content at which a soil changes from plastic to liquid behavior.
- ⑪ **Plasticity Index (%):** Range of water content at which a soil exhibits plastic properties.
- ⑫ **Remarks:** Comments and observations regarding drilling or sampling made by driller or field personnel. May include other field and laboratory test results using the following abbreviations:

CEMENTATION:

Weakly: Crumbles or breaks with handling or slight finger pressure.

Moderately: Crumbles or breaks with considerable finger pressure.

Strongly: Will not crumble or break with finger pressure.

MODIFIERS:

Trace
<5%

Some
5-12%

With
> 12%

MOISTURE CONTENT (FIELD TEST):

Dry: Absence of moisture, dusty, dry to the touch.

Moist: Damp but no visible water.

Saturated: Visible water, usually soil below water table.

Descriptions and stratum lines are interpretive; field descriptions may have been modified to reflect lab test results. Descriptions on the logs apply only at the specific boring locations and at the time the borings were advanced; they are not warranted to be representative of subsurface conditions at other locations or times.

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

MAJOR DIVISIONS			USCS SYMBOLS	TYPICAL DESCRIPTIONS
COARSE-GRAINED SOILS More than 50% of material is larger than No. 200 sieve size.	GRAVELS More than 50% of coarse fraction retained on No. 4 sieve.	CLEAN GRAVELS (little or no fines)	GW	Well-Graded Gravels, Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES (appreciable amount of fines)	GP	Poorly-Graded Gravels, Gravel-Sand Mixtures, Little or No Fines
			GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS More than 50% of coarse fraction passing through No. 4 sieve.	CLEAN SANDS (little or no fines)	SW	Well-Graded Sands, Gravelly Sands, Little or No Fines
		SANDS WITH FINES (appreciable amount of fines)	SP	Poorly-Graded Sands, Gravelly Sands, Little or No Fines
			SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS More than 50% of material is smaller than No. 200 sieve size.	SILTS AND CLAYS Liquid Limit less than 50%		ML	Inorganic Silts and Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands or Clayey Silts with Slight Plasticity
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clays, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS Liquid Limit greater than 50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sand or Silty Soils
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Silts and Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Humus, Swamp Soils with High Organic Contents

STRATIFICATION:

DESCRIPTION	THICKNESS
Seam	up to 1/8"
Layer	1/8" to 12"
Occasional: One or less per 6" of thickness	
Numerous: More than one per 6" of thickness	

TYPICAL SAMPLER GRAPHIC SYMBOLS

- Bulk/Bag Sample
- Standard Penetration Split Spoon Sampler
- Rock Core
- No Recovery
- 3.25" OD, 2.42" ID D&M Sampler
- 3.0" OD, 2.42" ID D&M Sampler
- California Sampler
- Thin Wall

WATER SYMBOL

- Water Level

Note: Dual Symbols are used to indicate borderline soil classifications.

FIGURE 4



NO. XXXXX

SUBCONTRACT AGREEMENT

THIS SUBCONTRACT AGREEMENT ("Subcontract") by and between GRAMOLL CONSTRUCTION COMPANY, a Utah corporation, hereinafter referred to as "Contractor," and (SUBCONTRACTOR NAME AND ADDRESS) hereinafter referred to as "Subcontractor," is entered into and shall be effective as of the date it has been signed by both parties hereto (the "Subcontract Date"). If Subcontractor commences work prior to signing this Subcontract, the Subcontract Date shall be deemed to be the date Subcontractor commenced the Work.

RECITALS

1. Contractor has entered into a contract with [PROJECT OWNER] for the construction, performance and completion of a certain project known as [PROJECT TITLE] said contract being hereinafter referred to as the "General Contract".

2. Subcontractor desires to furnish, and Contractor desires to have Subcontractor furnish a portion of the work for Contractor. Contractor and Subcontractor desire to establish the terms and conditions that govern the relationship between them when Subcontractor furnishes such labor, materials, and equipment pursuant to this Subcontract.

ARTICLE I

1.1 **Scope of Work.** Subcontractor shall furnish all labor, materials, permits, tools, machinery, equipment, facilities, supplies and services, pay all applicable taxes, and comply with any and all additional requirements imposed by the jurisdiction in which the work is performed, and to do all things necessary to complete the following items of work under the General Contract (the "Work"):

Furnish all labor, materials, equipment and supervision required to complete all [LABOR TYPE] work required, as described in specifications sections [SECTION NUMBER AND DESCRIPTION] and as shown on the drawings in [BID PACKAGE] and comply with all other sections of the specifications and the drawings dated [DATE], for [PROJECT NAME] prepared by [ARCHITECT], as related to such work.

Addenda:

Alternates:

Includes:

Excludes: SALES TAX

Hereinafter, all such documents, plus this Subcontract and the General Contract are collectively referred to as the "Subcontract Documents." All Subcontract Documents other than this Subcontract are incorporated herein by reference and hereby adopted and made a part of this Subcontract as fully as if it were set forth in full herein, subject to the limitations set forth in Article I hereof. All General, Supplemental General, and Special Conditions of the specifications and all terms and conditions of the General Contract shall apply to this Subcontract, except where ambiguous or inconsistent with this Subcontract, in which case the provisions of this Subcontract shall control. Subcontractor acknowledges that the Work to be performed by Subcontractor is not confined to any particular portion of the drawings or section of the specifications but may be scattered throughout those documents. In the performance of this Subcontract, Subcontractor binds itself to Contractor to comply fully with all undertakings and obligations of the Contractor to the extent that they apply to the scope of the Work.

ARTICLE II

2.1 **Subcontract Price.** Contractor shall pay Subcontractor for completion of the Work in accordance with the Subcontract Documents the lump sum of [Subcontract Price] (the "Subcontract Price.") The Subcontract Price includes all costs and expenses to perform the Work, and associated with the performance of the Work, including, without limitation, (1) all applicable transportation charges, costs and expenses, and (2) all applicable taxes including, without limitation, applicable taxes under any law now existing, or which may hereafter be

adopted by federal, state, local or other governmental authorities, taxing the labor, materials, or equipment furnished, or any other tax levied as a result of performance of the Work. The Subcontract Price may be adjusted only as provided for in Article V.

ARTICLE III

3.1 Independent Contractor. The relationship of Subcontractor to Contractor during the term of this Subcontract shall be that of an independent contractor. Subcontractor shall take any and all actions necessary to maintain that independent contractor relationship throughout the term of the Subcontract, and neither Subcontractor nor its employees shall be considered employees of Contractor. Subcontractor shall exercise exclusive control for the means, methods, techniques, and procedures in performance of the Work.

3.2 Examination of Subcontract Documents/ Site. Subcontractor has examined the Subcontract Documents and the applicable Laws and Regulations, as that term is defined below, and has examined the site of the work and satisfied itself as to all conditions to be encountered in the performance of the Work. Subcontractor enters this Subcontract on the basis of its own examination, investigation and evaluation of all such matters, and not in reliance on the opinions or representations of Contractor or Owner. If there are any inconsistencies between the Subcontract Documents or ambiguities in any Subcontract Document, Subcontractor shall bring such inconsistencies or ambiguities to the attention of Contractor before the execution of this Subcontract; otherwise, Subcontractor shall be bound by Contractor's resolution of such inconsistencies or ambiguities.

In the event of any discrepancy (1) in the Subcontract Documents, or (2) between the Subcontract Documents and the Laws and Regulations, those which are more stringent, provide persons and property with greater protection, or provide for a better product shall govern. In the event of any discrepancy in the Subcontract Documents between dimensions and measurements for the Work based on scaling, the Work shall comply with the dimensions for such Work. Subcontractor shall promptly notify Contractor in writing of any such discrepancy. To the extent that the Subcontract Documents include plans, specifications or other documents that depict, refer or relate to mechanical, plumbing, electrical or fire protection systems, such documents are diagrammatic only, and are not intended to show the precise alignment, physical locations, or configurations of such Work. The Subcontract Price includes all costs and expenses for such systems to be installed such that they clear all obstructions, permit proper clearances for the Work of other trades, and present an orderly appearance.

Before commencing Work, Subcontractor will satisfy itself as to the location of all utilities that may affect or interfere with Subcontractor's Work. Subcontractor will fully protect all utilities, and keep them operating at all times, unless otherwise provided in the Subcontract Documents. Subcontractor shall take such field measurements as are necessary for the proper execution of its work. It shall be assumed that the Subcontractor has fully accepted the work of others as being satisfactory and he shall be fully responsible thereafter for the satisfactory performance of the work covered by this Agreement, regardless of the defective work of others.

3.3 Lines, Levels, Dimensions and Measurements. Subcontractor assumes full responsibility for the proper interpretation and interpolation of all lines, levels, dimensions, and measurements and their relation to benchmarks, property lines, reference lines and the work of Contractor and other trades. In all cases where dimensions are governed by conditions already established, the responsibility for correct knowledge of the condition's rests entirely on Subcontractor. The Work shall comply with the dimensions provided in the Subcontract Documents and shall not be performed based on scales indicated in those documents. No variations from specified lines, levels or dimensions shall be made except on prior written approval of Contractor clearly setting forth the variation.

3.4 Shop Drawings/ Submittals. Shop drawings and submittals shall be provided in a minimum of one (1) digital copy to Contractor's office in North Salt Lake. Additional copies shall be provided if required by the Subcontract Documents. Shop drawings and/ or submittals and/ or samples are due within fourteen (14) days of Subcontract's date of issuance. At the time of submission, Subcontractor shall clearly identify in writing any deviation in its shop drawings/ submittals/ samples from the requirements of the Subcontract Documents and must receive from Contractor specific written approval for any deviation.

3.5 Warranty. Subcontractor warrants that:

- 3.5.1 all materials and equipment furnished under this Subcontract will be of good quality and new, unless otherwise required or permitted by the Subcontract Documents.
- 3.5.2 the materials and equipment provided as part of the Work will be suitable for the purposes intended in the Subcontract Documents.
- 3.5.3 the Work will be performed in a good and workmanlike manner.
- 3.5.4 the Work will conform to the requirements of the Subcontract Documents; and
- 3.5.5 the Work will be free from defects.

Work not conforming to these requirements including, without limitation, substitutions not properly approved and authorized, shall be considered defective (all such work, "Defective Work"). Subcontractor shall (1) execute any special guarantees, and (2) assign to Contractor all warranties, as required by the Subcontract Documents.

3.6 Correction and Replacement of Defective Work. During performance of the Work, Subcontractor shall promptly correct or replace Defective Work. Contractor shall determine whether Work is defective and whether work performed by Subcontractor to correct or replace Defective Work complies with Subcontractor's warranty obligations.

- 3.6.1 If, within the greater of (1) the period established in the Subcontract Documents, or (2) one year after the Completion Date, (hereinafter the "Warranty Period"), any of Subcontractor's Work is found to be defective, Subcontractor shall correct or replace it promptly after receipt of written notice of the Defective Work. If Contractor prefers to accept, rather than correct or repair Defective Work, Contractor may, in its sole discretion, accept the work subject to its right of reimbursement, as set forth below.
- 3.6.2 Subcontractor shall pay all costs to correct or replace Defective Work without any adjustment to the Subcontract Price or Subcontract Time. If Subcontractor fails to correct Defective Work within the time allowed by Contractor, or if no time is specified, a reasonable time after receipt of notice of such defects, Contractor may correct or replace the Defective Work. Subcontractor shall reimburse Contractor for (1) the costs to correct or replace defective Work, including, without limitation, the costs of additional sampling, testing and inspections, if any, made necessary by Defective Work, corrections or replacements, (2) all Losses that Contractor incurs that arise out of or result from Defective Work, (3) any amounts assessed and collected by Owner from Contractor for acceptance of Defective Work, and (4) any other amounts for which Subcontractor is responsible at law or in equity.

3.7 Safety. Subcontractor shall initiate, maintain and supervise all safety precautions and programs in connection with the Work including, without limitation, such precautions and programs as necessary to comply with the Gramoll Project Safety Rules and Regulations that are expressly made a part of the Subcontract Documents. Subcontractor shall take all necessary precautions to prevent damage, injury or loss to (a) all persons performing the Work or who may be affected by the Work; and (b) all Work, whether stored on or off the Project site. Subcontractor shall promptly report to Contractor all accidents incidental to the Work which result in death or injury to persons or in damage to property. Subcontractor shall provide to Contractor any reasonable documentation requested by Contractor related to any such death, injury, damages.

3.8 Compliance with Laws and Regulations. Subcontractor shall comply with and give all notices required by all federal, state, local, and municipal laws, regulations, codes, ordinances, and orders that directly or indirectly bear on the Work and/or the performance of the Work including, without limitation:

- 3.8.1 building codes and ordinances.
- 3.8.2 worker's compensation laws and regulations.
- 3.8.3 safety laws, codes, regulations and orders, including, without limitation, the Occupational Safety & Health Act of 1970, as enacted and amended, and regulations issued under that act.

- 3.8.4 environmental laws including, without limitation, the Comprehensive Environmental Response, Compensation and Liability Act, the Clean Water Act, the Clean Air Act, and the Resources Conservation and Recovery Act, as enacted and amended, regulations issued under those acts, and counterpart state laws;
- 3.8.5 wage, hour, labor, and anti-discrimination laws, including, without limitation, the Equal Employment Opportunity (EEO) Executive Order 11246, Title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act of 1967, the Equal Pay Act of 1963, the Family and Medical Leave Act, the Americans with Disabilities Act, the National Labor Relations Act, the Fair Labor Standards Act; Sections 503 and 504 of the Rehabilitation Act of 1973, Section 402 of the Vietnam Era Veterans Readjustment Assistance Act of 1974, the Immigration Reform Control Act of 1986, as enacted and amended, and all regulations issued under those acts; and
- 3.8.6 tax laws and regulations; all as enacted and amended, and all regulations issued under such acts

Collectively, these are referred to in this Subcontract as the "Laws and Regulations."

3.9 Subcontractors. Subcontractor shall not assign this contract, in part or in whole, without Contractor's prior written consent, nor shall Subcontractor assign any monies due or to become due to it hereunder, without Contractor's prior written consent. Subcontractor shall, upon request from Contractor at the inception of this Subcontract, provide to Contractor or supplier a written list of sub-subcontractors or suppliers that Subcontractor intends to use in connection with the performance of its obligations under this Subcontract where the dollar amount individually or in the aggregate with the same sub-subcontractor will exceed 5% of the Subcontract Price. Subcontractor shall require all of its sub-subcontractors to comply with the Subcontract Documents to the extent that they apply to the scope of work of such sub-subcontractor. Subcontractor shall not change sub-subcontractors without prior written approval of Contractor.

Upon Contractor's request, Subcontractor agrees to provide documentation evidencing full payment of all sub-subcontractors and/or suppliers engaged by Subcontractor with respect to its performance of this Subcontract.

If this Subcontract is terminated, each of Subcontractor's contracts for performance of the Work shall be assigned to Contractor, provided that Contractor accepts such assignment in writing and assumes all rights and obligations of Subcontractor pursuant to each such contract.

3.10 Cleanup. Subcontractor will continuously clean, and remove from the jobsite, its debris and excess materials and at the end of each day will leave its working areas in broom-clean condition. Also, he shall clean up to the satisfaction of the inspectors, all dirt, grease marks, etc., from walls, ceilings, floors, fixtures, etc., deposited or placed thereon as a result of the execution of this Subcontract. If Subcontractor fails to do so, Contractor may perform the cleanup and backcharge Subcontractor for the cost of performing such clean-up.

3.11 Supervision. Subcontractor shall have available on the project, at all times, a qualified superintendent, who is acceptable to Contractor, to coordinate the Subcontractor's work with that of the Contractor and of the other subcontractors, and any instruction given by the Contractor to said representative on the project shall have the same force and effect as if given to the Subcontractor either at the project or at the Subcontractor's office away from the project site.

ARTICLE IV

4.1 Subcontract Time. Subcontractor shall commence and complete the Work in accordance with the most current schedule prepared by Contractor, as may be revised from time to time during the course of the Project (the "Project Schedule"). Subcontractor shall commence and complete all activities in compliance with the time periods expressly provided for such activities in the Project Schedule. The periods of time provided in the Project Schedule for commencement and final completion of all activities that comprise the Work shall constitute the "Subcontract Time." Except as otherwise expressly noted, as used herein and in the Project Schedule, the term "day" shall refer to a calendar day. The date on which all the work performed by Contractor and its subcontractors is completed and accepted by the Owner shall be referred to hereinafter as the "Completion Date."

Subcontractor's commencement, prosecution, and completion of the Work in the Subcontract Time and in compliance with the Project Schedule is of the essence of this Subcontract.

Subcontractor acknowledges that the precise time periods scheduled for its performance are estimates only. Subcontractor shall cooperate with Contractor in scheduling and performing its work to avoid conflict or interference with the work of Contractor or other trades. Contractor reserves the right, in its sole discretion, to extend or to delay the scheduling of Subcontractor's work if such extension or delay becomes necessary in the opinion of Contractor. Each Subcontractor shall review the schedule of all items of work other than his own, to anticipate completion of specific items of its Work as it affects other trades, to be certain that work following Subcontractor's Work is not delayed. In the event of any conflicts in the Project Schedule between the work of Subcontractor and Contractor or another trade, Contractor shall determine, in its sole discretion, which work shall have precedence and how the parties will coordinate their respective work. All other work not specifically scheduled shall be coordinated as necessary to avoid delaying Work as scheduled. Subcontractor shall not be entitled to an adjustment in the Subcontract Price or the Subcontract Time based on the coordination of such activities with Contractor or any determination by Contractor concerning coordination of the work.

If Contractor determines, in its sole discretion, that Subcontractor has failed to diligently prosecute the Work in accordance with the Project Schedule, or that Subcontractor will not complete the Work within the Subcontract Time, Contractor may, in its sole discretion, (1) require Subcontractor to work overtime and/or use such additional labor and equipment as necessary to accelerate the Work and bring Subcontractor's performance into compliance with the Project Schedule, (2) supplement Subcontractor's work by furnishing additional labor and equipment to the Project as necessary to accelerate the Work and bring Subcontractor's performance into compliance with the Project Schedule, (3) require Subcontractor to provide reasonable assurances of timely performance in accordance with the Project Schedule, (4) terminate this Subcontract pursuant to Article X, and/ or (5) exercise all other rights and remedies available under this Subcontract. Subcontractor shall not be entitled to an adjustment in the Subcontract Price or the Subcontract Time as a result of any such action by Contractor.

ARTICLE V

5.1 Changes and Modifications to Subcontract. Without invalidating the Subcontract and without notice to any surety, Contractor may, at any time or from time to time, order additions, deletions or revisions in the Work or acceleration of the Work. Any such additions, deletions, revisions, or acceleration shall be binding upon Contractor and Subcontractor exclusively when made in writing executed by James Gramoll. Upon receipt of such an order, Subcontractor shall promptly proceed with the Work involved, which shall be performed under the applicable conditions of this Subcontract and the Subcontract Documents, except as otherwise specifically provided. Subcontractor shall not proceed to perform changes in the Work without prior written authorization from Contractor as provided herein. Subcontractor shall not be entitled to an adjustment in the Subcontract Price or the Subcontract Time for any work performed without such prior written authorization. Except as provided in this Article V or Section 12.1, the terms and conditions of this Subcontract are not otherwise subject to addition, modification, or change.

5.2 Claims. The Subcontract Price and the Subcontract Time may be changed only by a written directive by Contractor, change order, or written Amendment to this Subcontract signed by James Gramoll. Within seven (7) working days of an occurrence or event giving rise to a claim for a adjustment in the Subcontract Price or Subcontract Time, Subcontractor shall provide to Contractor written notice (hereinafter, a "Claim") stating the nature of the Claim and the adjustment in Subcontract Price and Subcontract Time requested, accompanied by supporting documentation. All Claims shall include and/ or be accompanied by the following supporting information and/ or documents: (a) the specific amount of the requested adjustment in the Subcontract Price, if any, (b) the specific number of days' adjustment in the Subcontract Time requested, if any, (c) the reasons justifying the request for an adjustment in the Subcontract Price and the Subcontract Time, including a CPM analysis demonstrating a critical path delay for any requested adjustment in the Subcontract Time, if any, (d) the party or parties whose orders, decisions, acts or omissions give rise to the requested adjustment in the Subcontract Price and/ or the Subcontract Time, and (e) a revised schedule based on the requested adjustments in the Subcontract Time, if any.

A Claim shall be deemed to include all adjustments in Subcontract Price and/ or Subcontract Time to which the claimant is entitled as a result of the occurrence or events giving rise to the Claim. No Claim by Subcontractor for an adjustment of the Subcontract Price or Subcontract Time will be valid if not delivered to the Contractor within the seven (7) working day period prescribed above. Subject to Contractor's right to terminate Subcontractor's rights under this Subcontract, Subcontractor shall continue performance of its

obligations under this Subcontract notwithstanding any dispute between Contractor and Subcontractor concerning a Claim asserted by either party.

Subcontractor's sole and exclusive right to an adjustment in the Subcontract Price and/ or the Subcontract Time shall be the adjustment in the contract price and/ or the contract time to the General Contract actually received by Contractor from Owner on behalf of Subcontractor as a result of any such Claim. Subcontractor shall not be entitled to any adjustment in the Subcontract Price or the Subcontract Time or any other remedy under this Subcontract or remedy for breach thereof as a result of any event, occurrence, or act or omission of Contractor or Owner beyond such adjustment in the contract price and/or the contract time to the General Contract received by Contractor from Owner. Receipt by Contractor of a fully-executed written change order from Owner is a condition precedent to Subcontractor's right, if any, to an adjustment in the Subcontract Price and/ or the Subcontract Time, a remedy under this Subcontract, or remedy for breach of this Subcontract. Subcontractor's right to recover for such change, remedy, or breach shall be limited to the adjustment in contract price and/ or contract time received by Contractor from Owner for such change, remedy, or breach.

5.3 Delays If events, occurrences, acts, or omissions beyond the control of Subcontractor including, without limitation, the work of other trades or contractors, fire, earthquake, acts of God, terrorist acts, riots, war, strikes or other force majeure events delay Subcontractor's Work, the Subcontract Time and/ or the Subcontract Price will be adjusted to the extent of any adjustment in the contract price and/ or the contract time in the General Contract received by Contractor from Owner on behalf of Subcontractor. Subcontractor may make a Claim for an adjustment in the Subcontract Time and/ or the Subcontract Price if, and only if, Subcontractor timely presents to Contractor a Claim in compliance with Section 5.2. Any such adjustment in the contract price and/ or the contract time under the General Contract received by Contractor from Owner shall be Subcontractor's sole and exclusive remedy for such delays, if any, to Subcontractor's Work on the Project. Receipt by Contractor of a fully executed written change order from Owner is a condition precedent to Subcontractor's right, if any, to an adjustment in the Subcontract Price and/ or the Subcontract Time for delays of any kind or nature.

The Subcontract Time and the Subcontract Price shall not be adjusted and Subcontractor shall not be entitled to any remedy under this Subcontract, or for breach of this Subcontract for (a) delays caused concurrently by Subcontractor and Contractor, Owner or any other person, or (b) any other delays to Subcontractor's Work on the Project for any other events, occurrences, acts or omissions of any person or entity or of any other kind or nature other than that for which an adjustment in the Subcontract Price and/ or the Subcontract Time are expressly authorized in this Section.

5.4 Subcontractor-Caused Delays. Subcontractor recognizes and acknowledges that Contractor will suffer substantial Losses if Subcontractor fails to perform the Work in compliance with the Project Schedule. Subcontractor shall indemnify and hold Contractor harmless from and against any and all Losses and liquidated damages that are attributable to or caused by Subcontractor's failure to perform the Work in compliance with the Project Schedule. In addition to liquidated damages, such Losses may include, without limitation, direct jobsite overhead costs such as costs for project management and supervision, quality control, utilities, and other costs such as home office overhead, attorneys' and other professional fees, and other usual and customary mark-ups. If Contractor incurs Losses and/ or is assessed liquidated damages as a result of delays caused concurrently by Subcontractor and other trades or contractors, such Losses and/ or liquidated damages shall be pro rated by Contractor, in its sole discretion, between Subcontractor and all other responsible parties. Contractor's allowing Subcontractor to proceed with Work beyond the time specified for Subcontractor's performance of that Work shall not constitute a waiver of any rights by Contractor to recover damages for Subcontractor's delay.

ARTICLE VI

6.1 Payment. Contractor shall pay Subcontractor in monthly payments of 95% percent of the work performed in any preceding month, in accordance with estimates prepared by Subcontractor. All such pay estimates shall be made on the sample form provided, entitled "Subcontractor's Application for Payment." Contractor has the unfettered right, at its discretion, to adjust Subcontractor's statements to reflect any overestimation of the percent of work complete made by Subcontractor in a pay estimate.

6.2 Pay-If-Paid. When such pay estimates are approved by Contractor and/ or the Owner, Contractor will pay Subcontractor as payments are received by Contractor from the Owner covering the monthly pay estimates of the Contractor, including the approved portion of Subcontractor's monthly pay estimate.

All payments to Subcontractor will be made only from a special fund, namely, from payments made by Owner to Contractor in respect of work performed by Subcontractor. No payments will be made to Subcontractor unless that fund comes into existence. Owner's payment to Contractor for Subcontractor's Work is an express condition precedent to Contractor's obligation to make any payment to Subcontractor.

6.3 Delayed Pay Estimate/ Retainage. If the Subcontractor fails to submit a timely request for payment in an amount approved by Contractor, Subcontractor's payment may be delayed. Contractor shall have the right to withhold from any payment the percentage of retention set forth in the General Contract between Contractor and the Owner, but in no case less than five percent of all amounts due Subcontractor until the project is fully completed and accepted by the architect or Owner, and Contractor has received final payment from the Owner.

6.4 Payroll Summaries/ Prevailing Wages. Subcontractor agrees to furnish to Contractor one copy of each weekly payroll summary within seven days after the date of payment. Subcontractor agrees to comply with any and all provisions in the General Contract relating to labor standards, minimum wages and other wage and hour provisions to the same extent as they are binding upon Contractor. In the event the Owner requires Contractor to furnish payroll affidavits, subcontractor agrees to furnish similar affidavits to the Contractor.

6.5 Withholding. Contractor may withhold payment to Subcontractor in whole or in part to the extent necessary, in Contractor's sole discretion, to protect Contractor against Losses for which Subcontractor is responsible as a result of any Default, as that term is defined below.

If, at any time prior to final payment, Contractor determines, in its sole discretion, that it is insecure regarding Subcontractor's ability, willingness, or intent to fulfill its warranty obligations under the Subcontract Documents, Contractor may, at its option, withhold final payment during the entire Warranty Period. Subcontractor waives any right to recover interest on the amount withheld during that time. Contractor shall make final payment for Subcontractor's Work within ten (10) days of (1) expiration of the Warranty Period, or (2) Contractor's receipt of adequate assurances from Subcontractor of its ability, willingness and intent to perform the warranty work, subject to receipt of by Contractor of final payment from Owner as provided in Section 6.2.

6.6 Backcharges. Where feasible, Contractor shall use reasonable efforts to give Subcontractor notice before any costs are incurred which will be offset against the Subcontract Price. If Subcontractor disagrees with the nature or amount of costs to be incurred, it shall advise Contractor promptly in writing, and in no event later than three (3) days after its receipt of notice from Contractor. Such notification shall include reasons for Subcontractor's dispute and shall propose a reasonable and acceptable alternative along with an estimate of the cost of the alternative, where applicable.

If Contractor receives no protest to a proposed backcharge or Subcontractor protests and does not provide an alternative to Contractor's proposed action, Contractor may proceed to incur the costs and offset them against the Subcontract Price. Costs so offset shall be deemed to be reasonable and beyond dispute by Subcontractor. If Subcontractor timely protests and proposes a reasonable alternative that Contractor rejects, the disputed costs incurred shall be subject to the dispute resolution procedure outlined in Article XI, if Subcontractor gives Contractor written notice within ten (10) days of such rejection.

6.7 Lien Waivers. Subcontractor shall present to Contractor lien waivers for all labor, materials and equipment furnished by others in connection with this Subcontract prior to receiving each payment hereunder. Contractor may require such lien waivers as a condition of progress or final payment.

6.8 Liens. Subcontractor shall timely pay all claims for labor, materials, and equipment incurred in the performance of the Work and shall (1) keep the property on which the Project is situated (the "Property") free from mechanic's liens or attachments, and (2) prevent the filing of any claim or stop notice against funds or the payment of funds owed to Contractor, by any person or entity performing a portion of the Work. If any mechanic's lien, attachment, claim against funds, or stop notice is filed against the Property or funds owed to Contractor arising out of or related to performance of the Work, Subcontractor shall, within ten (10) days after written demand by Contractor, take all reasonable steps necessary to cause the effect of such lien, attachment, claim, or stop notice to be released. Upon request by Contractor, Subcontractor shall obtain a lien release or discharge bond or other bond satisfactory to Contractor in the amount of 150% all liens, attachments, claims, or stop notices so recorded or served.

6.9 Acceptance of, or payment for, Subcontractor's defective or late work shall not constitute a waiver of any claim or offset that Contractor may have under the terms of this Subcontract.

ARTICLE VII

7.1 Indemnification. To the fullest extent allowed by law, Subcontractor shall indemnify and hold harmless Contractor, Owner, the project architects and engineers, and all of their respective agents and employees (the "Indemnitees") from and against all claims, damages, losses and expenses including, without limitation, attorney's fees ("Losses"), arising out of or resulting from (1) any Default, or failure by Subcontractor to comply with any express duty, warranty, representation, acknowledgment or covenant in this Subcontract, (2) any charges, claims, or liquidated damages assessed and collected by the Owner against Contractor as a result of and to the extent caused by any act or omission of Subcontractor or its sub-subcontractors, guests or invitees; (3) personal or bodily injury to or death of any person, including, without limitation, any agent, employee, guest or invitee of Subcontractor or its sub-subcontractors, other contractors, Contractor, or Owner, to the extent caused by any act or omission of Subcontractor or its sub-subcontractors, guests or invitees, (4) damage to or loss of property to the extent caused by any act or omission of Subcontractor or its sub-subcontractors, guests or invitees, (5) any use of Contractor's equipment, tools, rigging, blocking, hoists, or scaffolding, (6) liens, attachments, claims, or stop notices against funds or payments owed to Contractor, recorded or served by any of Subcontractor's sub-subcontractors, or (7) infringement of any patent or copyright by Subcontractor. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this paragraph.

The indemnity agreement shall be covered by Subcontractor's comprehensive general liability insurance policy. The indemnity obligations set forth in this Subcontract shall not be limited by (1) the Subcontract Price, or (2) the amount or type of proceeds, compensation, or benefits available to Subcontractor under any insurance policy including, without limitation, any self-insurance or similar program or policy maintained by Subcontractor.

At the request of an Indemnatee, Subcontractor shall defend any claim for Losses against an Indemnatee. The Indemnatee shall be entitled to approve the legal counsel to be paid for by Subcontractor for the purpose of defending such claims for Losses. No claim for Losses shall be settled or discontinued, nor shall judgment be permitted to be entered without the written consent of the Indemnatee, which consent shall not be unreasonably withheld.

ARTICLE VIII

8.1 Insurance. Unless otherwise specified in the Subcontract Documents indicating that insurance shall be provided pursuant to an owner-controlled or contractor-controlled insurance program, Subcontractor shall purchase and maintain the following insurance coverages for itself and the Additional Insureds during the course of the Work and during the Warranty Period, and shall maintain completed operations coverage for itself and the Additional Insureds for the length of time necessary to cover any manifestation date within the applicable statutes of limitations and/ or repose which pertain to the Work. If additional insurance coverage or greater limits of liability are required by the General Contract Documents, such provisions shall control.

8.1.1 Commercial General Liability coverage on an occurrence basis with a deductible not to exceed \$1,000 per occurrence that includes coverage for liability assumed under any oral or written contract relating to the conduct of Subcontractors' business, including this Subcontract, and also including (1) broad form property damage liability coverage; (2) premises-operations coverage; (3) explosion and collapse hazard coverage; (4) underground hazard; (5) products and completed operations hazard coverage, and (6) independent contractor coverage. The limit of liability shall be not less than \$1,000,000 each occurrence, \$2,000,000 general aggregate (subject to a per project general aggregate provision applicable to the project per ISO form CG 2503 or its equivalent), \$2,000,000 products/completed operations aggregate and \$1,000,000 personal and advertising injury.

Claims Made/Self-Insurance Provisions. Subcontractor shall not provide general liability insurance under any Claims-Made General Liability form without express prior written consent of Contractor. Any self-insurance program providing coverage in excess of \$25,000 per occurrence requires the prior written consent of the contractor.

8.1.2 Automobile Liability coverage in comprehensive form affording coverage for owned, hired, and non-owned vehicles. The limit of liability shall not be less than \$1,000,000 for bodily injury and property damage combined, \$1,000,000 for each accident. (No aggregate on automobile

insurance). The General Contractor, Owner and all other parties required of the General Contractor, shall be included as insureds on the auto policy.

- 8.1.3 **Workers Compensation and Employers Liability** coverage with Workers Compensation limits complying with statutory requirements, and Employers Liability Insurance limits of at least \$1,000,000 each accident, \$1,000,000 for bodily injury by accident, and \$1,000,000 each employee for injury by disease. Workers' compensation insurance shall comply with the statutory form.
- 8.1.4 **Commercial Umbrella** coverage with limits of at least \$1,000,000. Umbrella coverage must include as insureds all entities that are additional insureds on the CGL. Umbrella coverage for such additional insureds shall apply as primary before any other insurance or self-insurance, including any deductible, maintained by, or provided to, the additional insured other than the CGL, Auto Liability and Employers Liability coverages maintained by the Subcontractor.
- 8.1.5 **Hazardous Materials** If Subcontractor and/or its subcontractors or suppliers, regardless of tier, perform remediation of hazardous material, or if their operations create an exposure to hazardous materials as those terms are defined in federal, state, or local law, Subcontractor and its subcontractors and suppliers must obtain a "Contractor's Pollution Liability" policy with limits not less than \$1,000,000 per occurrence and \$2,000,000 aggregate for Bodily Injury, Personal Injury, and Property Damage, naming Contractor and Owner as additional insured. If Subcontractor or its subcontractors or suppliers haul hazardous material (including, without limitation, waste), they must carry Auto Liability insurance with a \$1,000,000 Combined Single Limit for Bodily Injury and Property Damage applicable to all hazardous waste hauling vehicles, and include MCS 90 and CA9948.
- 8.1.6 **Professional Liability Coverage** Any subcontractor performing work that includes design/build work or services shall obtain a Professional Liability Insurance Policy. Design/build work includes, without limitation, design/build work with respect to mechanical, structural, plumbing, and fire sprinkler systems. Coverage must allow for a minimum of two years following the completion of the project. If Owner or Contractor elects to purchase a project design policy, Subcontractor's policy shall be endorsed to provide excess coverage only.

The liability insurance policies, including commercial general liability, automobile liability and excess liability, shall be endorsed to provide: (1) that Contractor and Owner are additional insureds (the "Additional Insureds") per ISO form CG 20 10 07 04 and CG 20 37 07 04 or their equivalent, (2) that the insurance afforded by the policies shall apply to Contractor as though a separate policy had been issued to Contractor, and (3) that the coverage afforded to Contractor is primary and any other insurance in force for Contractor will be excess and will not contribute to the primary policies. All required insurance shall be provided by insurance companies with a rating of A- VII or better by A.M. Best Company.

Prior to performing any Work, Subcontractor shall provide Contractor with a certificate of insurance demonstrating that Subcontractor has obtained all of the insurance coverages required by this Section. An additional insured endorsement shall be attached to such certificate of insurance. The certificate of insurance and the insurance policies effectuating coverages required by this Section shall contain a provision that coverage afforded under the policies will not be canceled or allowed to expire until at least 30 days prior written notice has been given to Contractor.

8.2 Subcontractor waives all rights against Contractor, Owner and Architect and their respective agents, officers, directors and employees for recovery of damages to the extent these damages are covered by commercial general liability, commercial umbrella liability, business auto liability or workers compensation or employers liability insurance.

8.3 Subcontractor will protect the job site, the work of Contractor and subcontractors, and its own work until completion and acceptance of the entire project. Contractor and Subcontractor waive all rights against each other and against all other subcontractors and Owner for loss or damage to the extent reimbursed by Builder's Risk or any other property or equipment insurance applicable to the work, except such rights as they may have to the proceeds of such insurance. If the Subcontractors policies of insurance referred to in this Section require an endorsement or consent of the insurance company to provide for continued coverage where there is a waiver of subrogation, the owners of such policies will cause them to be so endorsed or obtain such consent.

Upon written request of the Subcontractor, Contractor shall provide Subcontractor with a copy of the Builder's Risk policy of insurance or any other property or equipment coverage in force for the project and procured by Contractor. Subcontractor shall satisfy himself as to the existence and extent of such coverage prior to commencement of Subcontractor's work.

If Builder's Risk insurance purchased by Owner or Contractor provides coverage for Subcontractor for loss or damage to Subcontractor's work, Subcontractor shall be responsible for the insurance policy deductible amount applicable to damage to the Subcontractor's work and/or damage to other work caused by Subcontractor. If not covered under the Builder's Risk policy of insurance or any other property or equipment insurance required by the Contract Documents, Subcontractor shall procure and maintain at his own expense property and equipment insurance for portions of Subcontractor's work stored off the site or in transit.

If Owner or Contractor has not purchased Builder's Risk or equivalent insurance including the full insurable value of Subcontractor's work, then Subcontractor may procure such insurance at his own expense as will protect the interests of Subcontractor, and his subcontractors in the work. Such insurance shall also apply to any of the Owner's or Contractor's property in the care, custody, or control of Subcontractor.

8.4 Health Insurance Certification. Subcontractor hereby certifies that the Subcontractor and all applicable subcontractors and suppliers at any tier that is subject to UCA 63A-5-205 and Utah Administrative Code Rule R23-23, has and will maintain for the duration of this contract, an offer of qualified health insurance coverage for their employees; all in accordance with UCA 63A-5-205, and Utah Administrative Code Rule R23-23.

ARTICLE IX

9.1 Default. The following acts or omissions by Subcontractor shall constitute events of default ("Default") under this Subcontract and shall give rise to all rights and remedies for material breach of this Subcontract, including, without limitation, termination of this Subcontract:

- (a) failure to perform the Work in strict compliance with this Subcontract and the Subcontract Documents.
- (b) failure to promptly and diligently correct or replace Defective Work.
- (c) failure to diligently perform the Work in compliance with the Project Schedule including, without limitation, failure to supply sufficient skilled laborers, materials, or equipment.
- (d) failure to provide reasonable assurances of timely performance.
- (e) failure to provide timely submittal information for review and approval as provided in the Subcontract Documents.
- (f) failure or evidence of failure to timely pay workers, subcontractors, or health, welfare, pension or other benefit funds for labor, materials or equipment furnished as part of the Work.
- (g) failure to keep the Property free from mechanic's liens.
- (h) third party claims or evidence indicating, in Contractor's sole discretion, probable filing of such claims unless Subcontractor provides security against such claims in a form acceptable to Contractor.
- (i) failure to pay prevailing wages, if required.
- (j) assignment or subcontracting the majority of the Work without prior written authorization from Contractor.
- (k) failure to perform the Work in strict compliance with the Laws and Regulations or the Safety Rules and Regulations.

- (l) evidence that the Work can not be completed for the unpaid balance of the Subcontract Price, as determined by Contractor in its sole discretion.
- (m) evidence that the Work will not be completed within the Subcontract Time, and/ or that the unpaid balance will not be adequate to cover actual or liquidated damages for the anticipated delay, as determined by Contractor in its sole discretion.
- (n) damage to the work of Contractor or others on the Project.
- (o) insolvency, inability to pay its current obligations, filing of any action seeking the protection of a bankruptcy court where this Subcontract is rejected by the trustee or the Subcontractor is unable to satisfy the requirements for assuming this Subcontract under the applicable provisions of the bankruptcy code, seeking to effect reorganization or workout with its creditors, filing in bankruptcy court by its creditors seeking to compel Subcontractor to reorganize or liquidate assets, appointment of a receiver or trustee related to any insolvency of Subcontractor, and garnishment of any amounts owed by Contractor to Subcontractor;
- (p) any other material breach of this Subcontract or the Subcontract Documents; and
- (q) any act, occurrence or event that places Subcontractor in default under any agreement between Contractor and Subcontractor other than this Subcontract.

9.2 **Notice of Default.** Upon written notice of Default, Subcontractor shall, within forty-eight (48) hours of receipt of such notice, take all actions requested by Contractor and such other actions as may be necessary to cure such Default. Subcontractor shall not be entitled to any adjustment in the Subcontract Price or the Subcontract Time as a result of any efforts to cure such Default.

9.3 If Subcontractor fails to cure any Default within forty-eight (48) hours after receipt of written notice of Default, Contractor may cure or remedy any Default by Subcontractor. Subcontractor shall reimburse Contractor and/or Contractor may backcharge Subcontractor for, any and all Losses it incurs, plus a reasonable allowance for profit, to cure or remedy any Default, or as a result of any other failure of Subcontractor to comply with the terms and conditions of this Subcontract or the Subcontract Documents. Contractor may offset against the Subcontract Price any Losses incurred as a result of a Default or any amounts owed to Contractor pursuant to this Section.

ARTICLE X

10.1 **Termination for Cause.** If (1) Subcontractor fails to cure any Default within forty-eight (48) hours after receipt of written notification of such Default, or (2) a Default threatens to cause immediate personal or bodily injury or death, Contractor may terminate Subcontractor's rights under this Subcontract in its entirety and Contractor shall have all the rights and remedies available under this Subcontract and at law or in equity including, without limitation, those remedies specified below.

If Contractor terminates this Subcontract for cause as provided herein, Contractor may, without prejudice to any other of its rights or remedies, perform and complete the Work and in connection therewith, Contractor may do any or all of the following:

- 10.1.1 exclude Subcontractor from the Project.
- 10.1.2 take possession of all materials, equipment, and tools intended for performance of the Work including materials and equipment at the Project site, stored materials and equipment, and materials and equipment in the course of preparation wherever located (without liability to Subcontractor for trespass or conversion),
- 10.1.3 accept assignment of Subcontractor's rights under all of Subcontractor's contracts with sub-subcontractors for performance of the Work, pursuant to Section 3.9 and/ or
- 10.1.4 otherwise obtain materials and equipment and employ persons which, in Contractor's sole discretion, are necessary to complete the Work.

Upon termination for cause as provided herein, Subcontractor shall not be entitled to receive any further payment until completion of all of the Work and acceptance of the entire Project. Subcontractor shall reimburse Contractor for all Losses it incurs to complete Subcontractor's Work, plus a reasonable allowance for overhead and profit. If the unpaid balance of the Subcontract Price exceeds the Contractor's Losses, plus allowance for overhead and profit, Contractor shall pay such excess to Subcontractor. If such Losses, overhead, and profit exceed the unpaid balance of the Subcontract Price, the Subcontractor shall pay the difference to Contractor. In addition, Contractor shall be entitled to such other and further remedies available at law or in equity.

10.2 Suspension for Convenience. Contractor may, without cause, suspend, delay or interrupt the Work in whole or in part for such period of time as the Contractor may determine and/ or as provided in the Subcontract Documents. Subject to the requirements and limitations of Article V, the Subcontract Price and Subcontract Time may be adjusted for increases in the cost and time to complete the Work caused by such suspension. No adjustment shall be made, however, to the extent that (a) performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Subcontractor is responsible, (b) an adjustment is made or denied under another provision of this Subcontract, or (c) Contractor is not entitled to a adjustment in the contract price and/ or the contract time under the General Contract on behalf of Subcontractor as a result of such suspension.

10.3 Termination for Convenience. The Contractor may, at any time, terminate this Subcontract for the convenience of Contractor and without cause. Subcontractor's sole and exclusive right to compensation for Losses resulting from such termination shall be the compensation actually received by Contractor from Owner on behalf of Subcontractor as a result of any such termination. Subcontractor shall not be entitled to any compensation for Losses or any other remedy under this Subcontract or for breach thereof as a result of such termination beyond such adjustment in the contract price and/ or the contract price to the Prime Contract received by Contractor from Owner on behalf of Subcontractor. Receipt by Contractor of such compensation is a condition precedent to Subcontractor's right, if any, to compensation for Losses resulting from such termination. Subcontractor's right to recover for such termination shall be limited to the compensation received by Contractor from Owner for such termination on behalf of Subcontractor.

ARTICLE XI

11.1 Dispute Resolution. Disputes, if any, between Subcontractor and Contractor arising out of or relating to this Subcontract or the Work shall be resolved as provided in this Article.

11.2 Disputes Involving the Owner or the Architect. Any disputes in which the Owner or the Architect is a party shall be governed by the dispute resolution procedures in the Subcontract Documents other than this Subcontract. If those Subcontract Documents contain no dispute resolution procedures, such disputes shall be resolved as provided in Section 11.3 below.

11.3 Disputes Not Involving the Owner or the Architect. At the sole and exclusive discretion of Contractor, all disputes in which neither the Owner nor the Architect is a party shall be resolved in (1) binding arbitration, or (2) litigation in a state or federal court of competent jurisdiction situated in the state of the location of the Project. If Contractor determines to resolve disputes under this Subcontract by binding arbitration, the following rules shall apply.

11.3.1 Binding Arbitration shall be pursuant to the current Construction Industry Arbitration Rules of the American Arbitration Association unless the parties mutually agree otherwise. A written demand for arbitration shall be filed with the American Arbitration Association and the other party within a reasonable time after the dispute or claim has arisen, but in no event after the applicable statute of limitations for a legal or equitable proceeding would have run.

11.3.2 Any Arbitration pursuant to this Subcontract may be joined or consolidated with any arbitration involving (1) any other person or entity necessary to resolve the claim, dispute or controversy, (2) the same transaction or series of related transactions as those in the Arbitration, or (3) a common issue of law or fact with those in the Arbitration creating the possibility of conflicting rulings by more than one arbitrator or panel of arbitrators. The location of the arbitration proceedings shall be in the state of the location of the Project. The arbitration award shall be final.

11.3.3 Arbitration pursuant to this Section shall be governed by the applicable version of the Uniform Arbitration Act in enacted by the state of the location of the Project. The arbitrator, in

determining an award, shall be without jurisdiction to enter any award not in conformity with the laws determined by the parties to be controlling pursuant to Section 12.4. The arbitrator shall have all authority necessary to enforce all the terms and conditions of this Subcontract and provide for all remedies available hereunder including, without limitation, interim relief, if appropriate. The arbitrator shall prepare a (1) reasoned award, or (2) findings of fact and conclusions of law, applying the governing laws to the facts of the case.

11.3.4 Notwithstanding the foregoing, the arbitrator shall be deemed to have exceeded the authority granted under this Subcontract if, and to the extent, an award does not comply with the requirements of this Subcontract. The Parties consent to the jurisdiction of the state and federal courts of the state in which the Project is located for the purposes of (1) enforcing the parties' obligation to arbitrate disputes, claims and controversies under this Subcontract, (2) determining the scope of the matters that are subject to arbitration, (3) requiring the joinder and/ or consolidation of matters subject to arbitration, and (4) enforcing and entering judgment upon the arbitration award entered by the arbitrator. Each Party waives any objection that it may now have or hereafter have to venue in such courts.

11.3.5 If any action or proceeding is brought in connection with this Subcontract, the prevailing party shall be entitled to recover its costs and reasonable expert and attorneys' fees.

ARTICLE XII

12.1 This Subcontract and the Subcontract Documents constitute the final, complete, and exclusive statement of the agreement between the parties, and supersedes and replaces in their entirety all prior oral or written agreements, including but not limited to, bids and bid acceptances. This Subcontract may not be altered, amended or extended, except by written agreement of the parties hereto executed by James Gramoll on behalf of Contractor.

12.2 This Subcontract shall inure to the benefit of and be binding upon the parties hereto, their successors and permitted assigns.

12.3 Delay by Contractor in enforcing any rights or remedies in the event of Default or a breach of any term or condition of this Subcontract or any other contract between Contractor or Subcontractor, shall not be construed as a waiver of such Default or breach. Payment by Contractor of progress payments or final payment shall not be construed as acceptance of any work for which payment is made or waiver of any Claims, rights, or remedies under this Subcontract.

12.4 This Subcontract shall be construed and interpreted as a whole in accordance with its fair meaning and in accordance with the laws of the state of the location of the Project. Under no circumstances, however, shall such laws be interpreted to apply conflict of laws principles to require the laws of another state to determine the interpretation or construction of this Subcontract.

12.5 **Performance Guaranty.** If Subcontractor operates as a corporation, limited liability company, partnership or a business entity other than as an individual or sole proprietor, this Subcontract will be signed by the President and Secretary of the corporation, the managing member(s), partners, or other authorized principals of Subcontractor's company, and the officers, managing member(s), partners, and/ or other principals signing this Subcontract on behalf of the corporation, limited liability company, partnership or other business entity do jointly and severally, guarantee to the Contractor the full and faithful performance of this Subcontract by Subcontractor, and do further agree, jointly and severally, that they shall be personally liable to Contractor for the full and faithful performance of Subcontractor's obligations under this Subcontract. Failure of Contractor to request a performance bond from Subcontractor shall not affect the obligation assumed by the officers, managing members, partners or other principals signing this Subcontract on behalf of Subcontractor.

IN WITNESS WHEREOF, this Subcontract has been executed by the Contractor and Subcontractor as of the day and the year below.

SUBCONTRACTOR: (SUBCONTRACTOR NAME)

By _____

Print _____

Its _____

Date: _____

CONTRACTOR: GRAMOLL CONSTRUCTION COMPANY

Auth _____

Print James C. Gramoll, President

Date: _____



LOT 27
AMENDING AND EXTENDING LOT 27 PIONEER
SQUARE INDUSTRIAL PARK – PLAT "B"
E#3128907, B: 78-6, P: 178

EXISTING BUILDING
AREA = 34,511 SQ. FT.
F.F.E.=4236.30

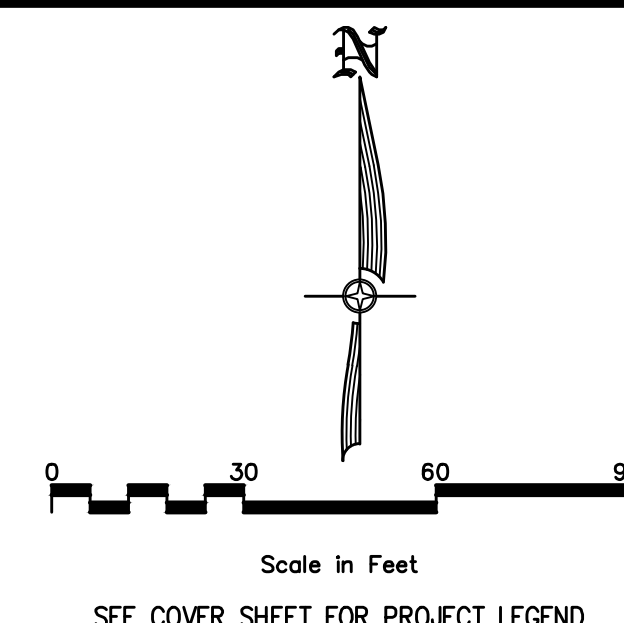
INSTALL 8" PVC SDR-35 SEWER PIPE
L=35.0'± S=0.40%

PROPOSED ADDITION
AREA = 10,701 SQ. FT.
F.F.E.=4236.30

STA 4+98.38
Structure - (8)
INSTALL 4' SSMH
TOL=4235.47
I.E. IN (8"E)= 4232.28
I.E. OUT (8"N)= 4232.18

INTERSTATE 215
SB TO U-201 WB RAMP
(Public Right-of-Way)

INTERSTATE 215
SB TO U-201 WB RAMP
(Public Right-of-Way)



SENSAPURE ADDITION
1945 SOUTH FREMONT DRIVE, SALT LAKE CITY, UTAH
UTILITY PLAN

**CIVIL ENGINEERING
+SURVEYING**

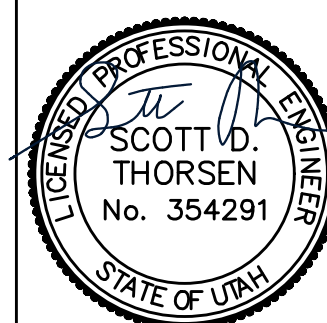
CIR

10718 S BECKSTEAD LANE, SUITE 102
South Jordan, Utah • 801-949-6296

[illegible]

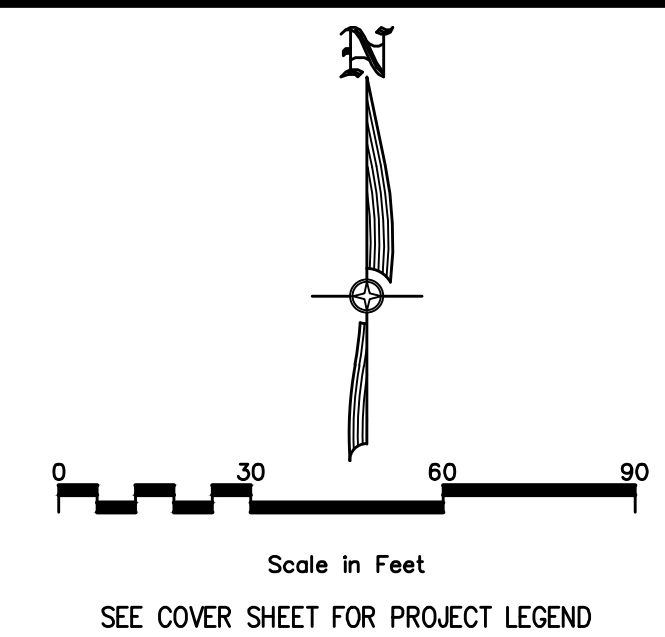
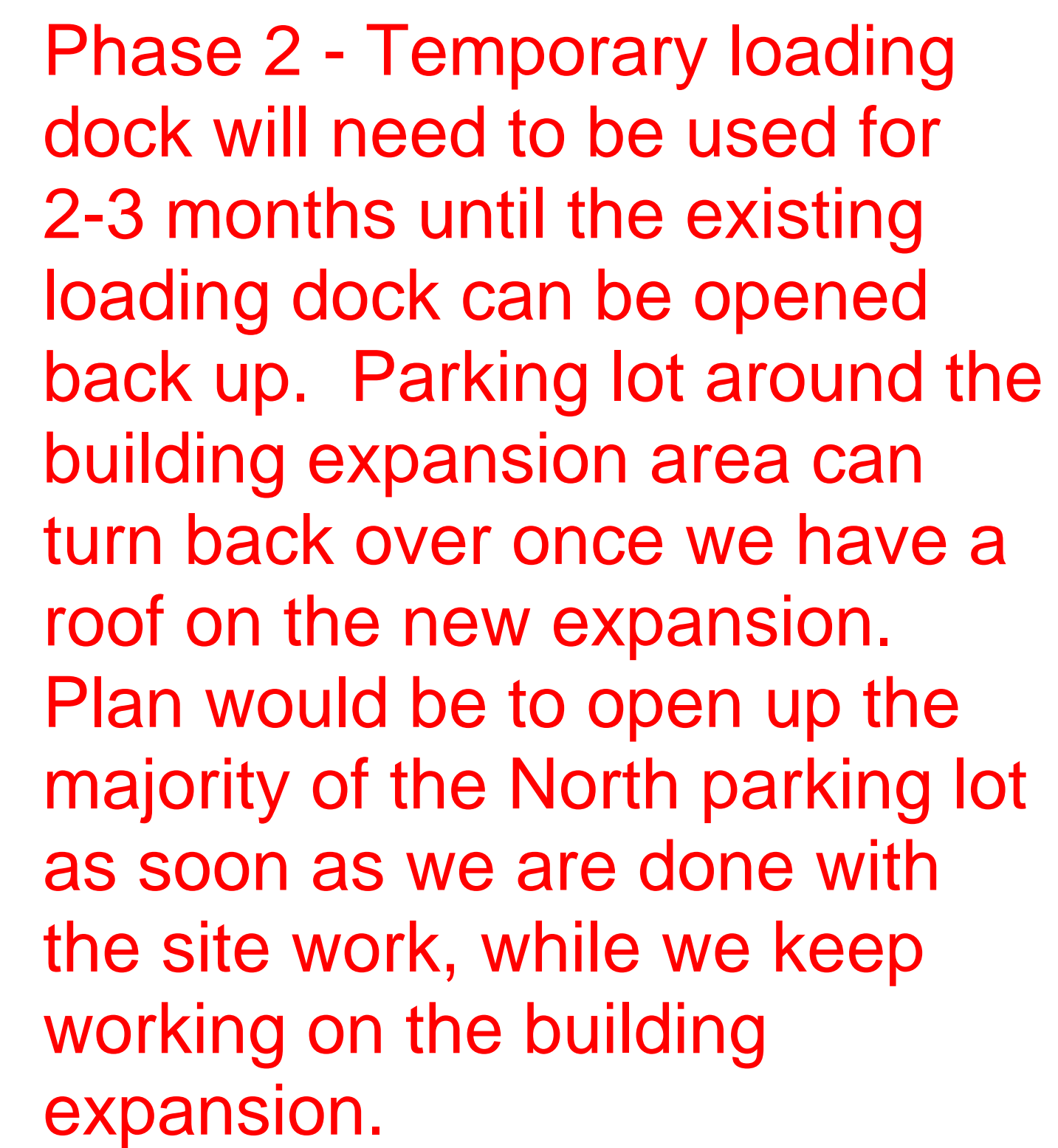
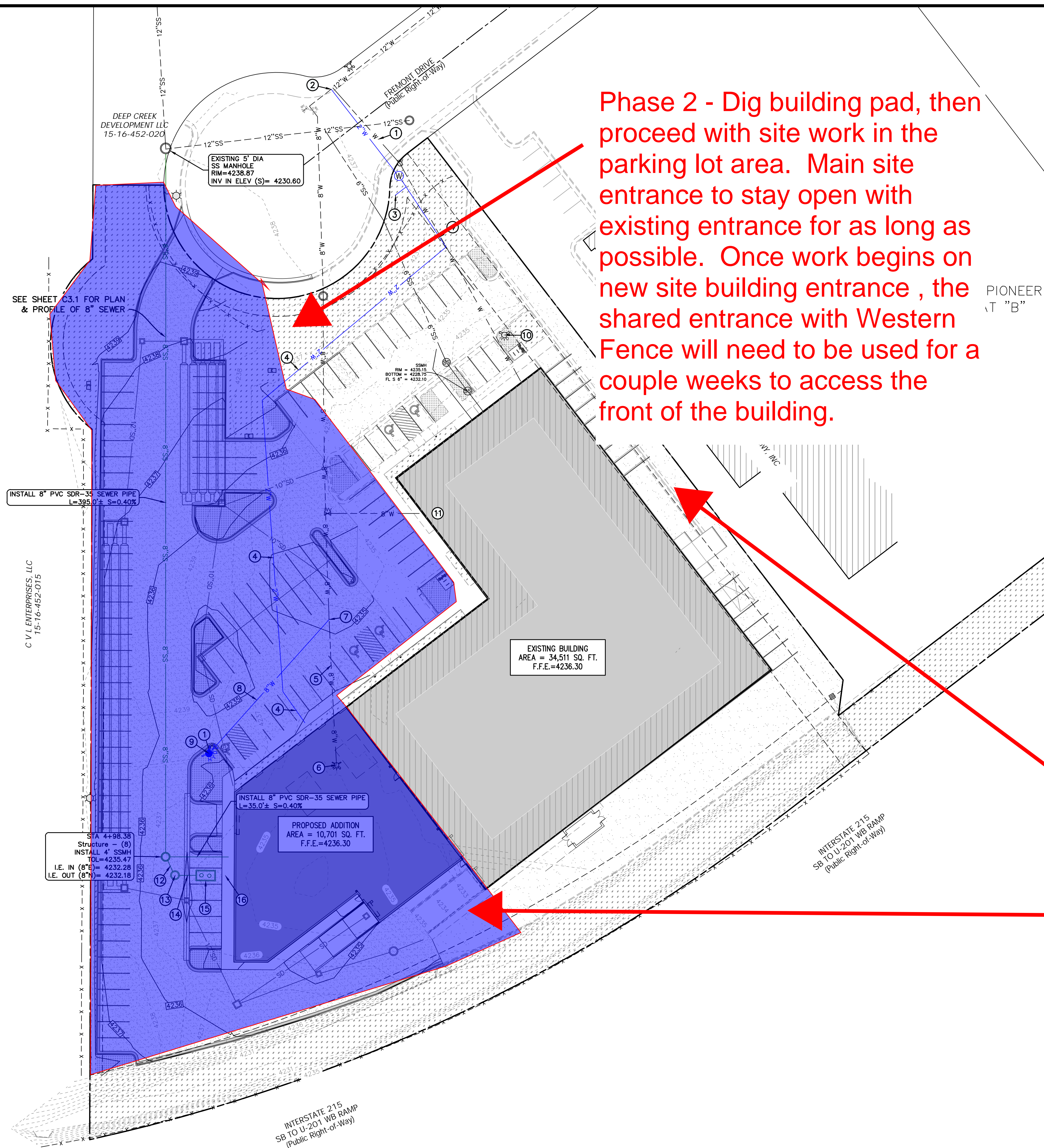
UTILITY SHEET NOTES:

- ① EXISTING CULINARY WATER LINE TO BE KILLED AT THE MAIN.
- ② TAP PROPOSED 2" CULINARY WATER LINE OFF OF EXISTING 12" WATER MAIN
- ③ INSTALL 1-1/2" IRRIGATION LATERAL. SEE IRRIGATION PLANS FOR CONTINUATION TO STOP & WASTE AND BACK FLOW PREVENTER.
- ④ INSTALL 2" POLY PIPE WATER LINE W/BENDS. END 5' FROM BUILDING AND SEE MECHANICAL PLANS FOR CONTINUATION TO BUILDING.
- ⑤ EXISTING 8" WATER LINE TO BE DEMOLISHED
- ⑥ EXISTING FIRE HYDRANT TO BE REMOVED
- ⑦ INSTALL 8" 45° BEND W/THRUST BLOCK
- ⑧ INSTALL 8" PVC C-900 WATER LINE W/ TRACER WIRE
- ⑨ INSTALL FIRE HYDRANT ASSEMBLY W/GATE VALVE PER SALT LAKE CITY STANDARDS
- ⑩ EXISTING FIRE HYDRANT TO REMAIN
- ⑪ EXISTING FIRE RISER ROOM. SEE MECHANICAL PLANS FOR CONTINUATION OF EXISTING SPRINKLER SYSTEM INTO PROPOSED BUILDING ADDITION
- ⑫ INSTALL 7± OF 8" PVC SEWER PIPE, S=0.4%.
- ⑬ INSTALL 4' DIAMETER SAMPLING MANHOLE PER SALT LAKE CITY STANDARDS. TOL=MATCH TOP OF PROPOSED ASPHALT, I.E.=4232.31. SEE SHEET C5 FOR DETAILS.
- ⑭ INSTALL 9± OF 8" PVC SEWER PIPE, S=0.4%.
- ⑮ INSTALL SAND/OIL SEPARATOR PER SALT LAKE CITY STANDARDS STANDARDS AND SPECIFICATIONS. TOL=MATCH TOP OF PROPOSED ASPHALT. I.E.=4232.34
- ⑯ INSTALL 7± OF 8" PVC SEWER PIPE, S=0.4% END PIPE 5' FROM BUILDING, I.E.=4232.37. SEE MECHANICAL PLANS FOR CONTINUATION TO BUILDING.



SHEET NO. C3.0	
PROJECT ID A-1000	DATE: 02/9/22
FILE NAME: PRJ-SSL	SCALE: 1"=30'



[illegible]

CIR | **CIVIL ENGINEERING
+ SURVEYING**

10718 S BECKSTEAD LANE, SUITE 102
South Jordan, Utah • 801-949-6296

SENSAPURE ADDITION
1945 SOUTH FREMONT DRIVE, SALT LAKE CITY, UTAH
UTILITY PLAN

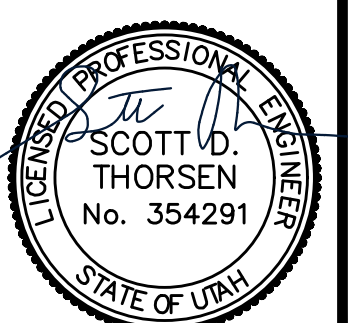
TER MAIN
CONTINUATION TO
BIG AND SEE

CITY STANDARDS

CONCLUSION

STANDARDS.
C5 FOR DETAILS.

STANDARDS AND
2.34
BUILDING,
BUILDING



SHEET NO. C3.0	
PROJECT ID A-1000	DATE: 02/9/22
FILE NAME: PRJ-SSL	SCALE: 1"=30'



