State of Utah

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Department of Administrative Services
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Executive Director

Division of Facilities Construction and Management
ERIC R. THOLEN
Director

Addendum No. 1

Date: June 29, 2016

To: A/E Firms

From: Matthias Mueller – Project Manager, DFCM

Reference: Archives Storage Vault Expansion-State Archives
Division of Facilities Construction and Management
DFCM Project No. 17138310

Subject: **Addendum No. 1**

Pages	Addendum Cover Sheet	1	page
	Bid Package 2 Documents	70	pages
	Geotech Analysis	33	pages
	Total	104	pages

Note: This Addendum shall be included as part of the Contract Documents. Items in this Addendum apply to all drawings and specification sections whether referenced or not involving the portion of the work added, deleted, modified, or otherwise addressed in the Addendum. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to Disqualification.

1.1 SCHEDULE: There are no project schedule changes.

1.2 GENERAL ITEMS:

1.2.1 Question: Do the cover page, table of contents and tabs/dividers count toward the 50 page management plan and statement of qualification submittal
Answer: No

1.2.2 As-Built Documents: At this time, DFCM is unable to locate the past project's as-built documents in its archives. However, DFCM did locate the pdf documents used for bid package 2 and they are attached. The geotech analysis for the original Archives project is also attached.
NOTE: That although the bid package 2 and geotech documents are made available, they are not made part of the Addendum, Solicitation, and the DFCM Contract Documents. AEs may use this information at their own risk; DFCM does not warrant the bid package 2 and the geotech report and makes no guarantee as to their accuracy.

APPENDIX #1 – GEOTECHNICAL REPORT

REPORT
GEOTECHNICAL STUDY
PROPOSED UTAH STATE ARCHIVES BUILDING
APPROXIMATELY 375 RIO GRANDE STREET
(455 WEST)
SALT LAKE CITY, UTAH

Submitted To:

State of Utah
Division of Facilities Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114

Submitted By:

AMEC Earth & Environmental, Inc.
Salt Lake City, Utah

June 16, 2003

Job No. 3-817-004426

June 16, 2003
Job No. 3-817-004426

State of Utah
Division of Facilities Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114

Attention: Mr. Dave McKay

Gentlemen:

Re: Report
Geotechnical Study
Proposed Utah State Archives Building
Approximately 375 Rio Grande Street (455 West)
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 state archive building which is located at approximately 375 South Rio Grande Street (455 West) in Salt Lake City, Utah. The general location of the site with respect to major topographic features and existing facilities, as of 1998, is presented on Figure 1, Vicinity Map. A more detailed layout of the site showing existing and proposed facilities is presented on Figure 2, Site Plan. Site-specific topography and the locations of the borings drilled in conjunction with this study are also presented on Figure 2.

During the course of this study, many of the conclusions and recommendations summarized herein were transmitted to representatives of the design team.

1.2 OBJECTIVES AND SCOPE

The objectives and scope of our study were planned in discussions between representatives of the State of Utah Division of Facilities Construction & Management (DFCM), and Mr. Bill Gordon of AMEC Earth & Environmental, Inc. (AMEC).

AMEC Earth & Environmental. Inc.
4137 South 500 West
Salt Lake City, Utah 84123
Tel: +1 (801) 266-0720
Fax: +1 (801) 266-0727 www.amec.com

In general, the objectives of this study were to:

1. Accurately define and evaluate the subsurface soil and groundwater conditions across the site.

2. Provide appropriate foundation, earthwork, construction bracing, dewatering, and geoseismic parameters necessary for the design and construction of the proposed facility.

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

1. A field program consisting of the logging and sampling of three exploration borings.

2. A laboratory testing program.

3. An office program consisting of the correlation of available data, engineering analyses, and the preparation of this summary report.

A detailed outline of our objectives and scope was presented in our proposal dated April 24, 2003.

1.3 AUTHORIZATION

Authorization was provided verbally by Mr. Dave McKay of DFCM.

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, measured and projected groundwater conditions, and the layout and design data discussed in Section 2., Proposed Construction, of this report. If subsurface conditions other than those described in this report are encountered and/or if design and layout changes are implemented, AMEC must be informed so that our recommendations can be reviewed and amended, if necessary.

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

2. PROPOSED CONSTRUCTION

2.1 GENERAL

The overall archives building will consist of two primary components. First, will be the archive-storage area. The second will be an office and administrative area. During the course of this study, many different concepts with regard to these two components have and are still being considered. Our primary understanding of each of the two components is presented in the following paragraphs.

2.2 ARCHIVES-STORAGE STRUCTURE

The archives-storage portion of the overall facility will occupy the southern portion of the footprint as shown on Figure 2. To contain the desired amount of storage, this portion of the structure will extend approximately 10 feet below existing grade and as much as 35 to 40 feet above existing grade. Below-grade portions of this structure will be of reinforced concrete construction. Above grade, it is anticipated that the perimeter shell will basically be of light steel-frame construction with stone, brick, or metal panel veneer. Structural loads associated with the walls and roof of the structure will be transmitted down through perimeter walls to the supporting foundation system. It is anticipated that these loads will be relatively light.

Inside the archives building, three basic storage retrieval systems are being considered. One is a fully automated system which would have as many as seven tiers of storage. Each tier is defined as one level of bins. The other two systems are "man up" and "man down" semi-automated retrieval systems having maximum tier heights of four to six. A fourth storage concept utilizing standard storage shelves on three or four structural floor levels was also considered but does not appear to be a viable alternate.

Discussions with representatives of SK DAIFUKU indicate that the maximum storage load in each tier (storage bin) will be 2,200 pounds. For the fully automated system, the base of the bin will have dimensions on the order of four-feet by five-feet. Therefore, for a seven-tier concept, the equivalent uniform loading over a base floor slab area four-feet by five-feet would be $\frac{2200 \times 7}{4' \times 5'}$. This calculates out to 770 pounds per square foot of storage area. This assumes that all of the bins will be full. Both automated and semi-automated systems will have two bins back to back with an aisle on each side of the two-bin back-to-back configuration. Projecting that two-thirds of the total area will then be fully loaded and one-third essentially non-loaded, the average uniform load imposed by a seven-tier system on the supporting mat-slab would be on the order of 516 pounds per square foot. The tabulation of the average uniform loads on top of the supporting mat-slab is as follows:

Number of Tier (Bins)	Maximum Weight of Each Bin	Average Base Area of Each Bin	Maximum Imposed Uniform Pressure Under Each Bin Footprint	Average Uniform Pressure Imposed on Top of Matt-Slab
4	2,200 pounds	5' x 4' = 20ft^2	440 psf	295
5	2,200 pounds	5' x 4' = 20ft^2	550 psf	369
6	2,200 pounds	5' x 4' = 20ft^2	660 psf	442
7	2,200 pounds	5' x 4' = 20ft^2	770 psf	516

It should be noted that the base area of each bin may vary somewhat between different systems, but will be approximately four by five feet. In addition, in our calculations, we have projected that all the bins will be fully loaded, that is, 2,200 pounds. This is conservative in that some of the bins may not be fully loaded.

If the standard conventional hand loading and unloading shelving system on structural floor slabs were to be used, the overall loading imposed upon supporting foundations would be significantly higher.

2.3 OFFICE-ADMINISTRATION STRUCTURE

This portion of the overall facility could consist of a two-level above-grade structure or a two-level above and one-level below-grade structure. If the below-grade concept is utilized, it will extend to a depth of approximately ten feet with the lower level matching the level of the archives structure. Below-grade portions of the structure will be of reinforced concrete construction. Above grade, we anticipate that the structure will be of light steel construction with brick or stone perimeter walls. Structurally supported floor slabs will be of light steel truss construction with a light-weight concrete topping four inches thick.

In discussion with the project structural engineer, it was determined that for the two-level building (with the lowest level at-grade) the maximum column and wall loads would be on the order of 175 kips and 4 to 8 kips per lineal foot, respectively. For the three-level concept, including one level below grade, the maximum column and wall loads would be on the order of 300 kips and 6 to 8 kips per lineal foot, respectively. The above are real loads, that is, defined as the total of all dead plus frequently applied (reduced) live loads.

3. SITE INVESTIGATIONS

3.1 FIELD PROGRAM

In order to define and evaluate the subsurface soil and groundwater conditions at the site, 3 borings were drilled to depths ranging from 20.5 to 41.5 feet with a truck-mounted rig equipped with hollow-stem augers. Following the completion of the deepest boring, Boring 2, a shallow boring approximately 15 feet in depth was drilled approximately four feet away from the original boring in order to provide a means of monitoring possible presence of artesian water conditions. The 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, relatively undisturbed samples of the typical soil types were obtained for subsequent laboratory testing and examination. The soils were classified in the field based upon visual and textural examination. These classifications were later supplemented by subsequent inspection and testing in our laboratory. Detailed graphical representation of the subsurface conditions encountered is presented on Figures 3A through 3C, Log of Borings. Nomenclature used to describe the soil types is presented on Figure 4, Unified Soil Classification System.

Following completion of drilling operations, including the shallow boring next to Boring 2, one and one-quarter-inch diameter slotted PVC pipe was installed in order to provide a means of monitoring the groundwater fluctuations.

3.2 LABORATORY TESTING

3.2.1 General

In order to provide data necessary for our engineering analyses, a laboratory testing program was performed. The program included moisture and density tests, and consolidation tests. A description of the tests plus a summary of the test results are presented in the following sections.

3.2.2 Moisture and Density Tests

To aid in classifying the soils and to help correlate consolidation test data, moisture and density tests were performed on selected undisturbed samples. The results of these tests are presented to the left of the boring logs on Figures 3A through 3C.

3.2.3 Consolidation Test

To provide data necessary for our settlement analyses, a consolidation test was performed on each of five representative samples of the fine-grained cohesive soils encountered in the exploration borings. Results of these tests indicate that the soils to the depths of approximately ten feet are moderately over-consolidated. Below this depth, the soils are elastic and exhibit lower over-consolidation ratios. When loaded below the over-consolidation pressures, soils will exhibit relatively low to moderately low settlement characteristics. When the pre-consolidation pressures, however, are exceeded, the soils become highly compressible.

4. SITE CONDITIONS

4.1 SURFACE

The site of the proposed building is presently occupied by an asphalt concrete-paved parking lot with adjoining landscaped areas. The site is bounded on the south by the Howells building; to the north by the old Rio Grande Depot; to the east by Rio Grande Street; and to the west by an older one-level building and some concrete walkways associated with the old railroad terminal. Around portions of the north, east, and south perimeter are some landscaped areas consisting of lawns and deciduous trees.

The overall site slopes gently downward to the southeast with relief across the site being approximately two feet.

4.2 SUBSURFACE SOIL AND GROUNDWATER CONDITIONS

A subsurface sequence as defined by the borings was found to be relatively consistent. In Borings 1 and 3, asphalt concrete four and five inches thick, respectively, was encountered. Underlying the asphalt concrete in Borings 1 and 3 and then starting at the ground surface in Boring 2, fill to total depths of four and one-half to ten feet were encountered. Fills to depths of approximately four and one-half feet consist of silty sand and gravel mixtures. With depth, the fills grade to silty clays with

trace to some sands and gravels and occasional pieces of debris. The granular soils are generally brown and medium dense. While the clayey soils are brown, dark gray, and gray, and mottled dark gray and gray. The fills are considered as non-engineered fills and will exhibit variable and in some cases very poor engineering characteristics. It is projected that the fills are associated with previous site grading and backfill in subsurface portions of buildings which previously occupied the site. Being in an urban area we would not be surprised to encounter old foundations, floor slabs, or construction debris in some portions of the site in the near-surface sequence.

The fills are, in turn, underlain by a layer of silty clay. The silty clay is generally dark brown to dark gray at the surface and grades mottled brown and gray with depth. Also with depth, the silty clay contains occasional to numerous seams and thin; that is, up to one-eighth-inch thick, layers of silts and silty fine sands. The clays range from medium stiff to very soft and will exhibit moderate strength. The upper portion of the clay sequence is moderately over-consolidated. With depth, however, the over-consolidation ratio decreases. When loaded below the preconsolidation pressure, these clays will exhibit moderate compressibility characteristics. When the preconsolidation pressure is exceeded, the soils become extremely compressible. The clays at the borings extend to depths ranging from 12.5 to 17.5 feet. Underlying the clays, sequences consisting of alternating one up to six-inch layers of silty clays, clayey silts, silts, and silty fine sands were generally encountered. The cohesive soils within this sequence are generally medium stiff, while the granular soils are loose. These soils will exhibit moderate strength and compressibility characteristics. These sequences extend to depths of 20.5 feet in Borings 1 and 3, the depths penetrated, and to a depth of 21.0 feet in Boring 2. Beneath this sequence in Boring 2 and extending to a depth of 34.0 feet, a layer of soft to medium stiff silty clay with occasional seams and up to one-half inch layers of silts and silty fine sands was encountered. These soils will exhibit moderate compressibility and strength characteristics under anticipated loads. This clay sequence is, in turn, underlain by another sequence of alternating up to one-inch layers of silty clays, fine sandy silts, and silty fine sands which extended to the depths penetrated, 41.5 feet.

4.3 GROUNDWATER

Immediately following drilling operations, one and one-quarter-inch diameter slotted PVC pipe was installed in each of the three primary borings. In addition, a secondary boring, Boring 2A, was drilled approximately 4 feet from Boring 2 to a depth of 12 feet and PVC pipe installed.

During a period of approximately two and one-half weeks following drilling, the levels were measured periodically. It was during this period that Salt Lake City was experiencing extremely heavy and continuous rain. The significant fluctuations monitored are not a true indication of true groundwater fluctuations but the effects of surface runoff to the boring possibly from drywall sumps in the areas of the PVC pipe, etc. The readings on May 21, 2003 appear to be stabilized and a true representation of the static water table at this time. No indications of artesian pressures from more granular soils in the deeper borings were measured.

A tabulation of the readings is as follows:

Boring No.	Depth of Groundwater (feet) 05/05/03	05/06/03	05/07/03	05/09/03	05/12/03	05/21/03
B-1	13.5	10.1	10.4	8.0	8.0	11.1
B-2	10.4	17.1	16.8	7.25	7.25	10.3
B-2A	10+	10+	10+	0	0	8.7
B-3	13.3	7.1	7.5	10.25	10.25	10.6

5. DISCUSSIONS AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

The three geotechnical factors which will most effect design, construction and to some extent, long-term performance of the facility are:

1. The non-engineered fills where were found to range from depth from four and one-half to nine feet at the boring locations.

2. The soft compressible clays extending at the boring location to depths ranging from 12.5 to 17.5 feet.

3. A moderately high water table.

The non-engineered fills will exhibit variable and in most cases very poor engineering characteristis and therefore must be removed from an area extending out at least three feet from the perimeter of the proposed structure. Considering the amount of fill which will need to be removed and the soft compressible clays underlying the fills we strongly recommend that the entire facility both the archives-storage structure and the office-administration structure be constructed with a below-grade level.

Considering seasonal and longer-term groundwater fluctuations, we recommend that a groundwater level nine feet below existing grade be utilized as the design water table. If the top of the lower-level slab associated with subgrade levels is established no more than seven feet below existing grade, then a perimeter foundation subdrain system will not be required. However, if the top of the lower level slab and/or mat foundation is established more than seven feet below grade it is a recommendation that a subdrain system be part of the overall design. If the top of the lower level slab is established in the range of seven to nine feet below grade the subdrain system will most likely only operate periodically. However, at greater depths near continuous operation of the subdrain system must be anticipated.

Considering all of the above factors and the projected loads which will be imposed, it is our recommendation that both components of the structure be supported upon continuous mat

foundations with the top of the mat/floor slab system being established in the range of eight to ten feet below existing grade.

In the following sections, detailed discussions pertaining to the design water table, foundations, lateral resistance and pressure, floor slabs, dewatering systems, earthwork, pavements, and the geoseismic setting of the site are provided.

5.2 DESIGN WATER TABLE

During the late part of May 2003, a fairly stable groundwater table depth ranging from 10.3 to 11.1 feet below existing grade was measured. Considering seasonal and longer-term groundwater fluctuations, we recommend that a design water table of 9 feet below existing grade be utilized. If the top of the lower level slab associated with proposed construction is established at least two feet above the design water table then a subsurface drain system will not be required. If established below seven feet, however, we do recommend that a specific subdrain system be installed. The extent of this system will be dependent upon the foundation system and the depth to which the top of the slab will be established. Considering hydrostatic pressures, long-term dewatering rates, construction, we generally recommend that the top of the lower level slab be established generally no more than ten feet below existing grade. Deeper installations however can be utilized.

5.3 FOUNDATIONS

5.3.1 General

In our analyses, we have reviewed the possibility of supporting the different components of the structure on continuous mat slabs and/or conventional spread and continuous wall foundations. Considering the loads and the compressible near-surface clays our analyses indicate that spread and continuous wall foundations should only be utilized for the two-level office-administration structure concept. That is a structure two levels in height with the lowest level established at or within a foot or two of existing grade. With this configuration, the structural loads will be moderate to moderately light. To control settlement the footings must be underlain by replacement granular fill.

For the office-administrative structure three levels in height with the lower level being established approximately eight to ten feet below grade, it is our recommendation that a continuous mat foundation be used in order to control total and differential settlements. Similarly for the archives building, considering the moderately heavy floor loads, a structural mat will be required. Because of differing elastic movements of the mats supporting the office administrative building and the archives portion of the building, we recommend a structural joint be constructed between these two structures.

In order to provide a stable working mat and to provide for an under mat/slab dewatering system, approximately two to two and one-half feet of over-excavation will be required beneath the base of the mat systems. This over-excavation would be backfilled with select coarse granular fills. Discussions and recommendations and parameters for both spread and continuous wall foundations and mat foundations are presented in the following sections.

5.4 SPREAD AND CONTINUOUS WALL FOUNDATIONS

Spread and continuous wall foundations may only be utilized to support the relatively light projected loads associated with the two-level office administration structure with the lower level being established at or within a foot or so of existing grade. Even so, the footings must be underlain by significant amounts of select granular structural fill in order to control total and differential settlements. Appropriate design parameters are as follows:

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 Pressure for Real Load Conditions	- 2,500 pounds per square foot*
Bearing Pressure Increase for Seismic Loading	- 50 percent

* This assumes that all footings will be underlain by a minimum of 18 inches of granular structural fill.

The term "net bearing pressure" refers to the 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.

5.4.1 Installation

Under no circumstances should the footings be underlain by non-engineered fills, sod, rubbish, construction debris, frozen soils, or other deleterious materials. If the granular replacement fill beneath the footings becomes loose or disturbed, it must be recompacted before the footings are poured. The width of the replacement fill should be equal to the width of the footing plus one foot for each foot of fill thickness.

5.4.2 Settlements

Settlement of foundations designed and installed in accordance with the above parameters and supporting anticipated loadings for the two-level office administration structure concept are as follows:

Footing Type	Load	Minimum Thickness of Replacement Granular fill	Ultimate Settlement in inches
Spread	100 to 125 kips	1.5	½ ±
	126 to 175 kips	2.5	½ ±
	176 to 225 kips	3.0	½ ±
Wall	4 kips/ft	1.5	¼ to ⅜
	6 kips/ft	1.5	⅜±

Settlement will occur rapidly with 50 to 60 percent of the ultimate settlement occurring during construction.

5.4.3 Continuous Mat

5.4.3.1 Design Data

As previously discussed, it is our opinion that continuous mats would be the most cost effective foundation solution to support the archives-storage and three-level off-administration structures. The base of the mat would be established upon a "working mat" of replacement granular fill. This layer of fill would be at least two feet thick with the upper portion possibly being utilized as a below-mat slab subdrain system. The primary purpose of the gravel is to provide a "working mat" since the base of the excavation will be below the water table and into soils which are very easily disturbed. In our analysis we have projected that the top of the mat systems will be established nine to ten feet below existing grade and that the mat will be approximately two and one-half feet thick. In the archives building, the top of the mat may be the top of the working floor slab. In the office-administration area building, it may be desirable to establish a four-inch concrete slab over approximately 12 inches of granular fill over the top of the mat, thus facilitating the installation of utilities. These variations do affect the loadings imposed by the mat; therefore, as soon as the concept is finalized, we do need to be provided with this information so that final check calculations can be performed.

The average uniform load imposed on top of the mat foundations due to the structural components, storage rack systems, etc. in all cases will be less then the unit weight of the soil removed from the mass excavation provided that the top of the mat slab is established at least nine feet below existing grade. Therefore, settlements associated with the loading of the mat foundations will be elastic and occur very quickly.

5.4.3.2 Installation

As previously discussed, we recommend that a minimum two foot thick layer of replacement granular fill be placed beneath the mat in order to provide a working mat and in some cases components for a below slab subdrain system.

The initial 18-inch lift of replacement fill should consist of a mixture of clean coarse gravel to cobble-sized materials having a maximum particle size generally not exceeding eight inches. the upper portion of the replacement fill should consist of three-quarter to one and one-half-inch minus clean gap-graded crushed gravel which will provide a smoother working surface for the mat and which can also act as the below-slab portion of the subdrain system. The gravel "working mat" must extend the minimum of two feet beyond the perimeter of the proposed mat foundations.

5.4.4 Settlements

Settlements of continuous mats, various configurations, sizes, and imposed pressures are tabulated below:

Mat Size	Imposed Pressure	Projected Ultimate Settlement Beneath Center of Mat (inches)
52 x 156 (1)	950 (2)	1 ¼ to 1 ⅜
52 x 156	500 (3)	¾ to ⅞
90 x 180 (4)	950 (2)	1 ⅜ to 1 ⅝

(1) Typical archives-storage mat.
(2) Maximum anticipated load.
(3) Dead load only.
(4) Combined mats (archives-storage and office-administration).

The settlement quoted above are at the center of the mat. Settlement at the edges should be on the order of 50 to 60 percent of the center settlement. Settlements 30 feet away should be approximately 20 to 25 percent of the center settlement. Therefore, at the north end of the Howell building, an areal settlement with a very low angle of distortion on the order of one-quarter to three-eighths of an inch should occur. This should not impose significant distress to the structure because of the low angle of distortion.

As can be seen approximately 50 to 60 percent of the settlement should occur during construction and is related to the dead load of the foundation and structure. Live loads should impose an additional three-eighth to five-eighths of an inch settlement.

All settlements will be elastic and should generally occur within a week or so after full application of loads.

5.4.4.1 Modular Subgrade Reaction

The clays at the base of the mat foundation have an uncorrected modulus of subgrade reaction on the order of 75 pounds per cubic inch. When correcting from the size and configuration of the mats, the design value drops to two to three pounds per cubic inch.

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 0.45 should be utilized. 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 LATERAL EARTH PRESSURES

The wall that will rotate away from fill will be in an active earth pressure state. If the walls are laterally braced before backfilling, the walls will be in an at-rest earth pressure state.

To limit lateral earth pressures on the subgrade walls, we recommend that the backfill zone four-feet wide, placed immediately behind the walls consist of a select "free-draining" crushed angular gravel. The remainder of the backfill if supporting settlement critical facilities should consist of bank-run sands and gravels.

To limit lateral earth pressures due to compaction, it is essential that this select wall backfill zone be compacted in thin lifts of six inches or less by running hand-operated flat-plate vibratory compactor over the surface continuously at least three times. Compaction of each loose lift should begin at the back of the wall and proceed away from the back of the wall. The compactor equipment pattern should be parallel to the wall.

In evaluating active and at-rest lateral earth pressure parameters, we have projected that the select backfill material behind the walls will control and have assigned that backfill material a moist unit weight of 130 pounds per cubic foot and an internal friction angle of 38 degrees. In evaluating passive lateral earth pressure parameters, we have projected that the soils controlling passive resistance will also consist of granular backfill. Accordingly, we have assigned the resisting soils a moist unit weight of 130 pounds per cubic foot and an internal friction angle of 34 degrees.

The table on the next page lists the lateral earth pressure criteria for both static and seismic conditions. The seismic lateral earth pressures are based on an accelerations equal to two-thirds of

the 2 percent in 50-year event. These horizontal coefficients include amplification for a Site Class "D" soil profile.

Load Condition	Equivalent Fluid Density (pcf) Based on Mapped USGS Acceleration Values	
	Static	IBC Event [3]
Active (free to rotate)	31	44[1]
At-Rest (restrained)	45	99[1]
Passive	607[2]	505[4]

(1) Seismic value only. In addition to static values. See following discussions.

(2) This is the ultimate passive resistance. Recommend that a factor of safety of at least 1.5 be applied. This will reduce the lateral movement required to develop the resistance

(3) Two-third of 2 percent in 50-year event.

(4) Ultimate passive resistance.

It must be reiterated that the lateral earth pressure criteria provided in the preceding tables do not include compaction induced horizontal stresses. These criteria apply only for materials meeting the requirements of this report, and which are placed and compacted as described in this section. If materials other than those described above are used as backfill immediately adjacent to the abutments or other retaining walls, or the backfill materials are placed and compacted differently than recommended herein, the above equivalent fluid densities must be modified.

It should be noted that the equivalent fluid density values provided above are based on the assumption that the backfill materials will not become saturated. The equivalent fluid density values may be decreased by 50 percent if the backfill becomes saturated. However, full hydrostatic water pressures will have to be included, and hydro-dynamic pressures may need to be considered.

In determining the lateral earth pressures acting on retaining walls, we recommend the following approaches:

Active and At-rest Conditions

1. Static active and at-rest earth pressures alone are determined using the above static equivalent fluid density value and are applied using a triangular distribution that increases with depth below top of wall. The total static active force is applied at a point located one-third of the height of the soil retained above the base of the wall.

2. Seismic active and at-rest earth pressures alone are applied using an "inverted" triangular distribution that decreases with depth below the top of the wall. The total seismic active force is applied at a point above the base of the wall equivalent to six-tenths the height of the retained soil.

3. The total active and at-rest seismic earth pressure is the summation of the static and seismic components.

Passive Condition

The passive pressure provided above may be used in sizing thrust blocks backfilled with select granular soil. If poured neat into bedrock at lateral pressure of 3,500 pounds per square foot may be used.

5.7 EARTHWORK

5.7.1 Site Preparation

Site preparation will consist of the removal of existing asphalt concrete, curbs and gutters, and landscaping, followed by the abandonment and/or relocation of subsurface utilities. In landscaping areas, the depth of topsoil is projected to be on the order of four to five inches. Asphalt thickness from the boring logs were on the order of four to five inches. Surface vegetation and other deleterious materials should be removed from the site. Topsoil, although unsuitable for utilization as structural fill, may be stockpiled for subsequent landscaping purposes. Broken-up asphalt and immediately underlying coarser suitable granular soils may be stockpiled and ultimately incorporated into the granular "working mat" required under the concrete structural mat. Following the above operations, mass excavation may be initiated.

5.7.2 Excavations

Temporary construction excavations through cohesive soils above or below the water not exceeding four feet in depth may be constructed with near-vertical sideslopes. Deeper excavations through the cohesive soils above or below the water table not exceeding eight feet can generally be constructed with sideslopes no steeper than one-half horizontal to one vertical. Deeper excavation up to approximately 10 to 12 feet in predominantly cohesive soils above or below the water table should be constructed with sideslopes no steeper than three-quarters horizontal to one vertical. If extensive zones of debris or clean granular soils, especially if saturated, are encountered, significantly flatter sideslopes will be required.

All indications are that the excavation sideslopes can be constructed unbraced and not interfere with adjoining facilities.

We do anticipate that a significant amount of non-engineered fill will be encountered in the excavations. In addition, some buried old foundations, floor slabs, or building debris must be anticipated.

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

5.7.3 Structural Fill

Structural fill will be required as the "working mat" beneath the base of the mat foundations, as replacement fill below footings, and as backfill over foundations and utilities. For the "working mat" below the structural mat foundation and/or to stabilize soft subgrade, we recommend that a mixture of clean coarse gravels and cobbles be utilized. The material should have gradation sizes ranging generally from one and one-half to possibly as much as six to eight inches. Occasional particles up to ten inches are acceptable. Overlying these coarse gravels and cobbles, either bank-run sands and gravels or clean gap-graded one to one and one-half-inch clean gap-graded angular gravels may be utilized. We recommend that the clean gravels be utilized if the fill is placed near the water table. They may be placed directly upon the underlying coarser materials and brought up to proposed foundation grade. They should be placed in lifts not exceeding 12 inches with each lift being compacted procedurally by running a flat-plate or smooth-drum vibratory compactor over the surface continuously at least three times.

Where the backfill will be placed above the water table, bank-run sands and gravels may be placed over the underlying coarse gravels and cobbles, however, the first lift of the coarse gravels and cobbles must be thoroughly worked into the voids of the underlying materials so that long-term infiltration and subsidence does occur.

In order to reduce lateral pressures on the subgrade walls, to aid in controlling ultimate surface settlements, and to act as a chimney drain for a subdrain system, we recommend that the backfill around the outside perimeter of the subgrade walls to a minimum distance of four feet consist of a clean gap-graded gravel having particle sizes anywhere from the range of three-quarter to one-half inches. The gravel should be crushed; that is, angular. Backfill beyond this zone may consist of bank-run sands and gravels having a maximum particle size of four inches and generally containing no more than 15 percent fines; that is, material passing the No. 200 sieve. Gravel and the bank-run materials should be separated with a geotextile fabric so that the finer-grained granular soils do not wash into the open graded gravels.

5.7.4 Fill Placement and Compaction

Structural fill should only be placed upon undisturbed natural soils. We strongly recommend that the mass excavations and excavation for footings and utilities be accomplished utilizing a backhoe with a smooth-lip bucket in order to reduce soil disturbance.

Coarse gravel and cobble should be end-dumped, spread to a maximum loose lift thickness of 15 inches, with each lift then being compacted by dropping a backhoe bucket uniformly over the surface continuously at least three times. "Free-draining" open graded gravels should be similarly placed and compacted. These materials should be placed in lifts not exceeding 12 inches in loose lift thickness with each lift being compacted by running a flat-plate or smooth-drum vibratory compactor over the surface continuously at least three times. Bank-run sands and gravels, if utilized, should be placed in lifts not exceeding eight inches in loose lift thickness and should be

compacted to at least 95 percent of the maximum dry density as determined by the AASHTO[1] T-180 (ASTM[2] D-1557) compaction criteria.

5.8 SUBDRAINS

If the top of the lower level slab of any of the structures will extend more than seven feet below existing grade, we recommend that a perimeter foundation system be utilized. The foundation system drain should consist of a minimum six-inch diameter slotted or perforated pipe encased in a "free-draining" granular material, such as "pea" gravel or three-quarter to one-inch minus clean gap-graded gravel. The invert of the perimeter subdrain pipe should extend at least 24 inches below the top of the lowest adjacent slab. The gravel around the pipe should extend two inches laterally and below and continuous upward at least six inches above the top of the lowest adjacent slab. The gravel should be separated from the natural soils and/or backfill with a geotextile fabric, such as Mirafi 140N or equivalent. The slope of the subdrain should be at least 0.25 to a sump located preferably outside the perimeter of the building. The sump should have dual chambers and alternating pumps.

Extending up from the top of the perimeter subdrain to within two feet of final drain should be a chimney drain. The four-foot width of "free-draining" gravels as previously discussed will satisfy this requirement. Considering the utilization of the below-grade levels, we strongly recommend that the outside subgrade wall and the top of the foundations extending out to the edge be waterproofed before the subdrain system is installed.

To reduce the moisture infiltration of groundwater up through the mat foundation, we strongly recommend that the mat be continuously underlain by at least six inches of "free-draining" gravels. The gravel should be continuous and slope out towards the outside perimeter of the foundation system. Gravels can then connect to the perimeter foundation subdrain system. In this case, the perimeter foundation subdrain system will have to be established more than two feet below the top of the lowest adjacent slab in order to collect waters within the gravels underlying the mat system.

At this time we anticipate that the volume of water flow into the sump system if the top of the mat established approximately nine feet should not be excessive, will be on the order of five to ten gallons per minute. This quantity, however, can be readily checked during excavation operations. More specifically, the pumping rates to keep the base of the mass excavation dry during the deeper excavation should be monitored to see how it matches the projected dewatering system rates.

5.9 PAVEMENTS

Pavements around the perimeter of the structure will be subjected to traffic ranging from a light volume of automobiles and occasional light-weight trucks in parking areas to roadways where the traffic will be moderately light consisting of automobiles to occasional medium- to heavy-weight

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1 American Association of State Highway and Transportation Officials
2 American Society for Testing and Materials

trucks. With this anticipated traffic and projected subgrade conditions, we recommend the following pavement sections:

Parking Areas

(Light Volume of Automobiles and Light Trucks,
Occasional Medium-Weight Trucks,
and No Heavy-Weight Trucks)

2.5 inches	Asphalt concrete
7.0 inches	Granular base
Over	Properly prepared subgrade

Roadway Areas

(Moderately Light Volume of Automobiles and Light Trucks,
Light Volume of Medium-Weight Trucks,
and Occasional Heavy-Weight Trucks)

3.0 inches	Asphalt concrete
8.0 inches	Granular base
Over	Properly prepared subgrade

Subgrade in this case can consist of granular structural fill and/or properly prepared existing fills. Preparation of existing fill should consist of proofrolling the surface continuously at least three times. If any soft or otherwise unsuitable soil zones are encountered, they must be removed and replaced with compacted granular fill to a maximum depth of two feet.

In loading/unloading dock areas and areas of dumpster, we recommend that a minimum six and one-half-inch non-reinforced Portland cement concrete slab over four inches of base coarse material over properly prepared subgrade be utilized. Construction of the rigid pavement should be in sections 10 to 12 feet in width with construction or expansion joints or one-quarter depth saw-cuts on no more than 12-foot centers. Saw-cuts must be completed within 24 hours of the "initial set" of the concrete and should be performed under the direction of the concrete paving contractor. The concrete should have a minimum 28-day unconfined compressive strength of 4,000 pounds per square inch and contain 6 percent ±1 percent air-entrainment.

5.10 GEOSEISMIC SETTING

5.10.1 General

In early 2002, Utah adopted the International Building Code (IBC) 2000. The IBC 2000 code determines the seismic hazard for a site based upon regional mapping of bedrock accelerations prepared by the United States Geologic Survey (USGS) and the soil site class (formerly soil profile type). The USGS values are presented on maps incorporated into the IBC code and are also available based on latitude and longitude coordinates (grid points). In comparison, the former UBC (Uniform Building Code) generally placed the entire Wasatch front into a single seismic zone (Seismic Zone 3).

The structure must be designed in accordance with the procedure presented in Chapter 16 of the IBC 2000 edition.

5.10.2 Faulting

Based on our review of available literature, no active faults pass through or immediately adjacent to the site. The nearest known active fault is the north-south running Warm Springs fault. The nearest inferred projection is 2,600 feet to the east.

5.10.3 Liquefaction

The predominant soils to a depth of 41.5 feet are fine-grained and not susceptible to liquefaction, even during a major seismic event. Some of the thin (up to six-inch) layers of saturated sand could liquefy. Because of their confinement and limited thickness, the supporting foundations should not be significantly affected.

5.10.4 Soil Class

For dynamic structural analysis, the Site Class "D" as defined in Table 1615.1.1, Site Class Definition of the 2000 IBC can be utilized.

5.10.5 Ground Motion

The United States Geologic Survey (USGS), through the National Earthquake Hazards Reduction Program (NEHRP, 1997), has evaluated and mapped the general seismic characteristics of the conterminous United States, particularly the western United States. The NEHRP ground motion data are probabilistic peak horizontal ground accelerations associated with points mapped on a grid system. The ground motion data for a site can be determined based on the latitude and longitude coordinates of the site. The acceleration values apply to the dense soil to rock boundary between Site Classes "B" and "C" (Site Class B-C Boundary), as defined by NEHRP 1997.

The coordinates of the site are 40.762 degrees north latitude and 111.904 degrees west (negative) longitude. The ground motion values for the USGS grid point closest to the site location are

summarized in the following table. The ground motion values in the table incorporate soil amplification factors for a Site Class "D" soil profile.

Acceleration Criteria	Probabilistic Peak Horizontal Ground Accelerations (percent g) Mapped USGS Values With Soil Amplification 2% in 50 yr Event (2475-yr return period)
PGA* (g)	0.699
0.2 sec SA** (g)	1.747
1.0 sec SA** (g)	1.142

* PGA - Peak Ground Acceleration (horizontal)

** SA - Spectral Acceleration (for response spectrum)

IBC 2000 designs are based upon two-third of the volume presented above for the 2 percent in 50-year event.

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

Respectfully submitted,

AMEC Earth & Environmental, Inc.

William J. Gordon, State of Utah No. 146417
Professional Engineer

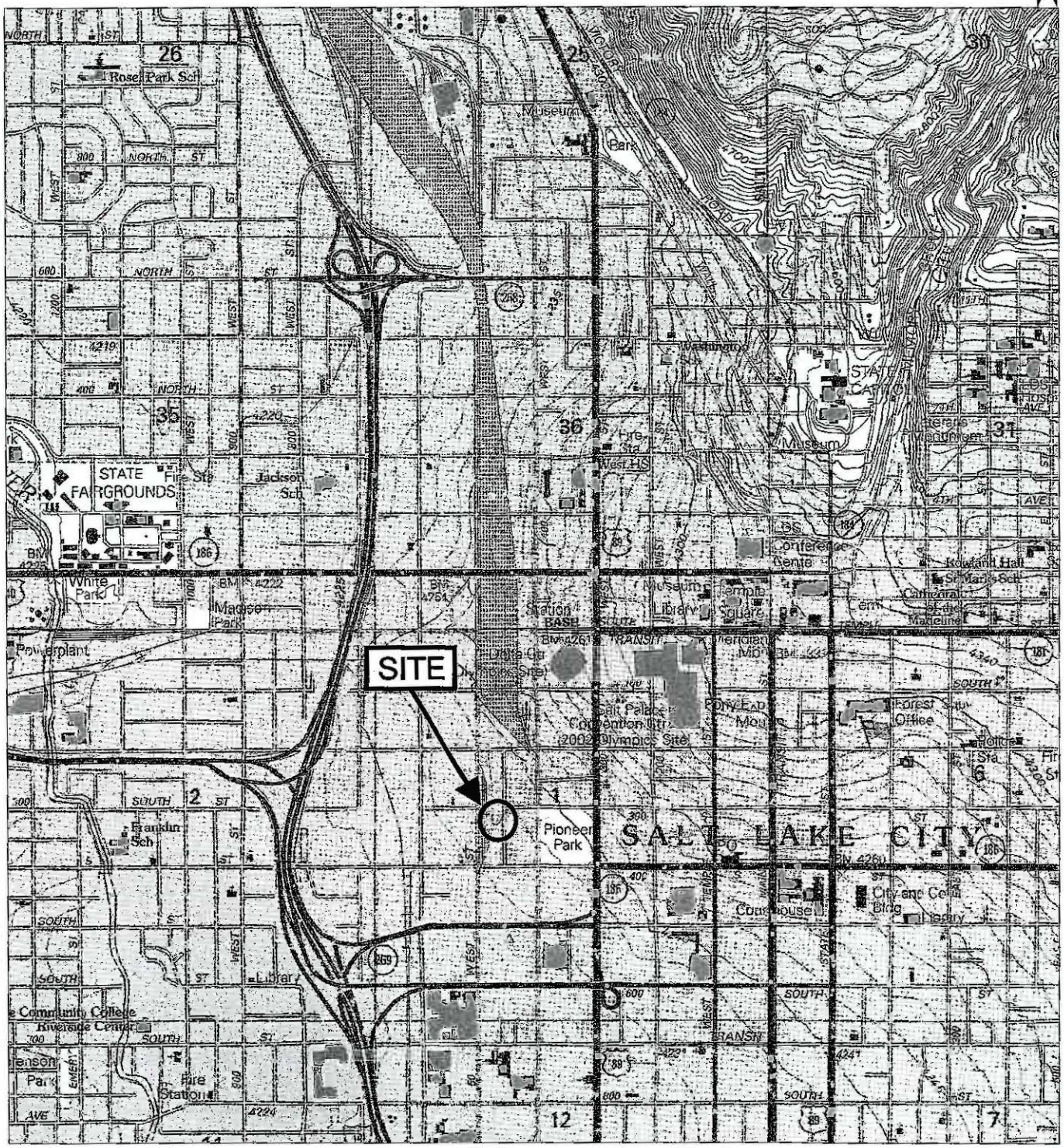
WJG:ka/sn

Encl. Figure 1, Vicinity Map
Figure 2, Site Plan
Figures 3A through 3C, Log of Borings
Figure 4, Unified Soil Classification System

Addressee (3)
c: Mr. Allen Roberts (2)
Cooper – Roberts – Simonsen Architects
700 North 200 West
Salt Lake City, Utah 84103

Mr. Steve Judd (1)
ABS Consulting
310 South Main Street, Suite 300
Salt Lake City, Utah 84101

STATE OF UTAH
JOB NO. 3-817-004426



SCALE IN FEET

1000 0 1000 2000

FIGURE 1
VICINITY MAP

REFERENCE:
USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE MAP
TITLED "SALT LAKE CITY NORTH, UTAH"
DATED 1998

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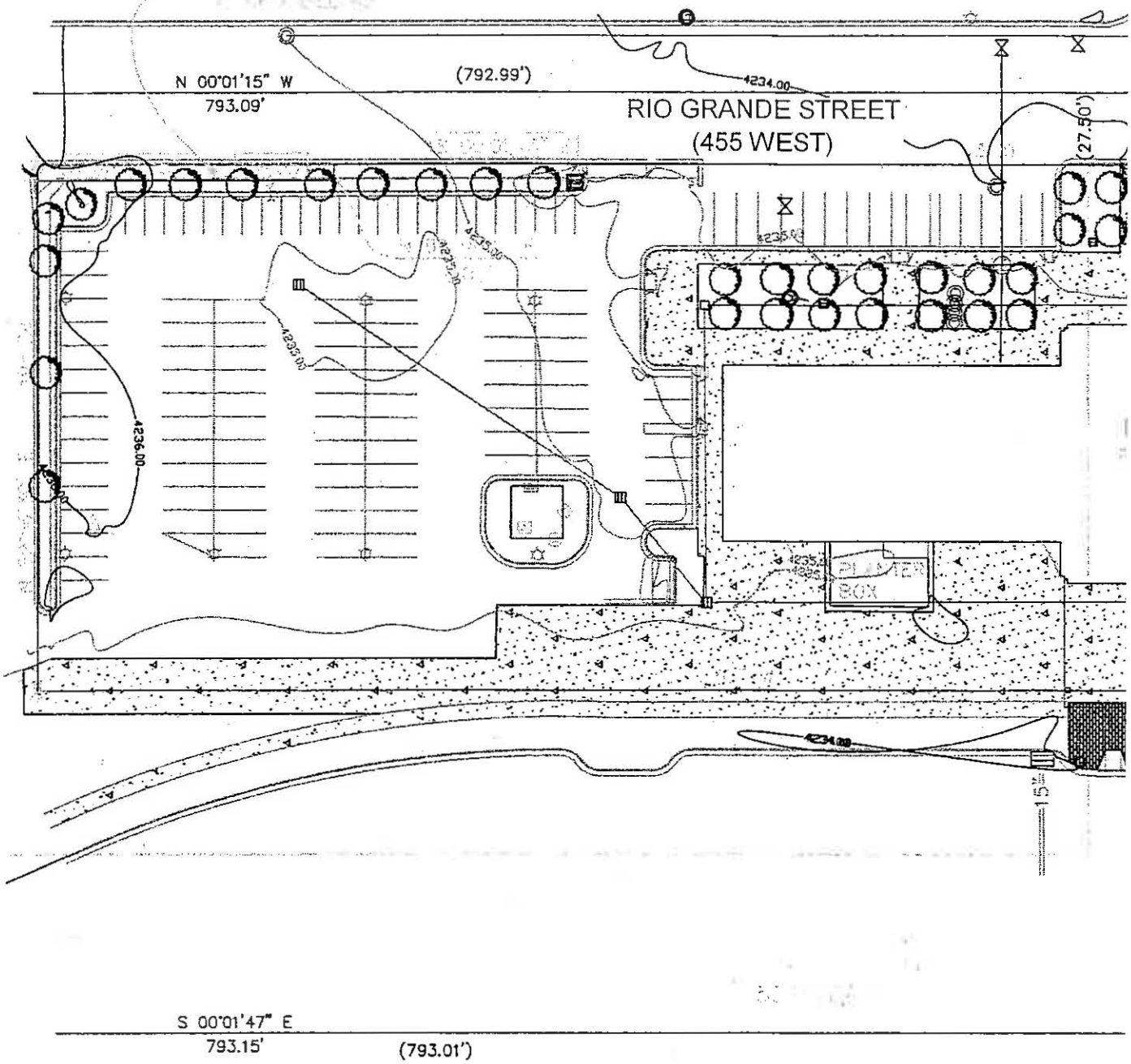
STATE OF UTAH
JOB NO. 3-817-004426



REFERENCE:
ADAPTED FROM DRAWING PROVIDED BY CLIENT

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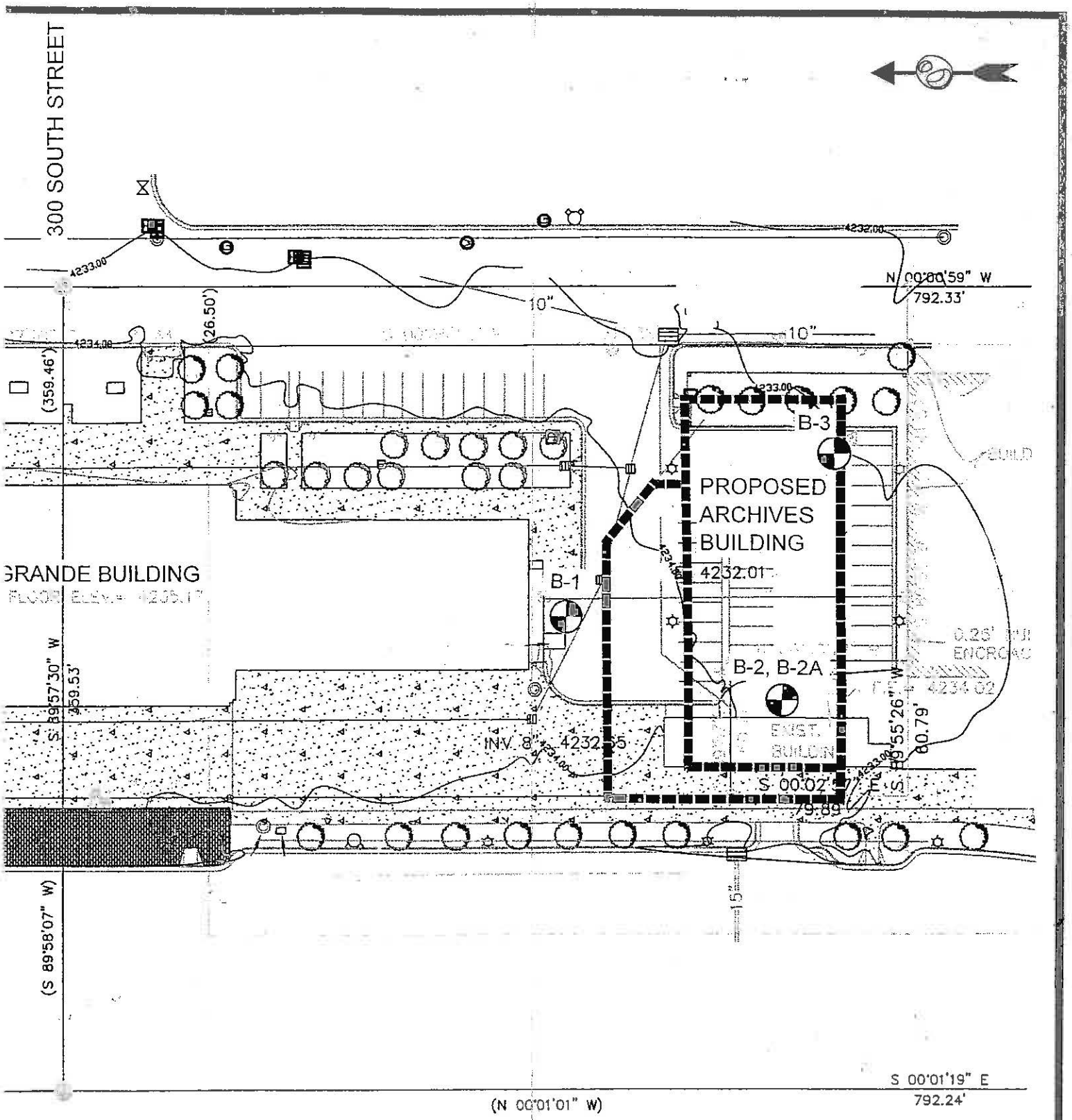

FIGURE 2
SITE PLAN

60 30 0 60

SCALE IN FEET

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PROJECT Utah State Archive Building
Aprox. 375 South Rio Grande St., SLC, UT

LOG OF TEST BORING NO. B-1

JOB NO. 3-817-004426 DATE 05-05-03

RIG TYPE CME 550
BORING TYPE 3-3/4" ID Hollow-Stem Auger
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0										4" ASPHALT CONCRETE
								SM FILL	moist medium dense	SILTY FINE TO COARSE SAND with some fine gravel; brown, FILL
				D	10	88	29.8	CL FILL	very moist medium stiff	SILTY CLAY with some fine to coarse sand with trace fine and coarse gravel; dark brown with occasional brown mottles, FILL
5				D	6	80	36.4	CL	very moist medium stiff	SILTY CLAY; dark brown
				D	6	87	28.6			grades mottled brown and gray and with occasional seams of silt and silty fine sand
10										
									saturated soft	
				D	4	80	42.1			
15										
								CL/ ML/ SM	saturated loose, medium stiff	ALTERNATING UP TO 1" LAYERS OF SILTY CLAY, CLAYEY SILT, SILT, AND SILTY FINE SAND; gray
				D	10					
20										
										Stopped drilling at 19.0'.
										Stopped sampling at 20.5'.
										Installed 1-1/4" diameter slotted PVC pipe to 20.0'.
25										* Not stabilized.

GROUNDWATER

	DEPTH	HOUR	DATE
▽	13.5	*	05-05-03
▼	11.1		05-21-03

SAMPLE TYPE

A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
C - California Split Spoon Sample

FIGURE 3A

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PROJECT Utah State Archive Building
Aprox. 375 South Rio Grande St., SLC, UT

LOG OF TEST BORING NO. B-1

JOB NO. 3-817-004426 DATE 05-05-03

RIG TYPE CME 550
BORING TYPE 3-3/4" ID Hollow-Stem Auger
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration 3Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
25										The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary to a proper understanding of the nature of the subsurface materials.
30										
35										
40										
45										
50										

GROUNDWATER

	DEPTH	HOUR	DATE
▽	13.5	*	05-05-03
▼	11.1		05-21-03

SAMPLE TYPE

A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
C - California Split Spoon Sample

FIGURE 3A
(con't)

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PROJECT Utah State Archive Building
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LOG OF TEST BORING NO. B-2

JOB NO. 3-817-004426 DATE 05-05-03

RIG TYPE CME 550
BORING TYPE 3-3/4" ID Hollow-Stem Auger
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration 3Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SM/ GM FILL	moist medium dense	**SILTY FINE TO COARSE SAND AND FINE TO COARSE GRAVEL**; dark brown, FILL
				D	3			SM/ CL FILL	moist very loose, soft	**SILTY FINE SAND/SILTY CLAY** with some sand and trace fine gravel; mottled dark gray and gray, FILL
5				D	4			CL	very moist soft	**SILTY CLAY**; dark gray
										grades mottled brown and gray and with occasional seams of silt and silty fine sand
10				D	5	93	31.9		saturated medium stiff	
								CL/ ML SM	saturated loose, medium stiff	**ALTERNATING UP TO 6" LAYERS OF SILTY CLAY, CLAYEY SILT, SILT, AND SILTY FINE SAND**; grayish-brown
15				D	5					
20				D	6					
								CL	saturated soft	**SILTY CLAY** with occasional seams and up to 1/2" layers of silt and silty fine sand; gray
25										

GROUNDWATER

	DEPTH	HOUR	DATE
▽	10.4	*	05-05-03
▼	10.3		05-21-03

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
C - California Split Spoon Sample

FIGURE 3B

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PROJECT Utah State Archive Building
Aprox. 375 South Rio Grande St., SLC, UT

LOG OF TEST BORING NO. B-2

JOB NO. 3-817-004426 DATE 05-05-03

RIG TYPE CME 550
BORING TYPE 3-3/4" ID Hollow-Stem Auger
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration 3Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
25				D	3	83	37.8			
30				D	9				medium stiff	grades gray in color
35				D	12			CL/ ML/ SM	saturated medium stiff, loose	**ALTERNATING UP TO 1" LAYERS OF SILTY CLAY, FINE SANDY SILT, AND SILTY FINE SAND**; gray to brown and gray
40				D	5					
45										Stopped drilling at 40.0'. Stopped sampling at 41.5'. Installed 1-1/4" diameter slotted PVC pipe to 17.0'. Offset boring 10.0' and installed 1-1/4" diameter slotted PVC pipe to 10.0'. * Not stabilized.
50										

GROUNDWATER

	DEPTH	HOUR	DATE
▽	10.4	*	05-05-03
▼	10.3		05-21-03

SAMPLE TYPE

A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
C - California Split Spoon Sample

FIGURE 3B
(con't)

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PROJECT Utah State Archive Building
Aprox. 375 South Rio Grande St., SLC, UT

LOG OF TEST BORING NO. B-2

JOB NO. 3-817-004426 DATE 05-05-03

RIG TYPE CME 550
BORING TYPE 3-3/4" ID Hollow-Stem Auger
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration 3Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
50										The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary to a proper understanding of the nature of the subsurface materials.
55										
60										
65										
70										
75										

GROUNDWATER

	DEPTH	HOUR	DATE
▽	10.4	*	05-05-03
▼	10.3		05-21-03

SAMPLE TYPE

A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
C - California Split Spoon Sample

FIGURE 3B
(con't)

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PROJECT Utah State Archive Building
Aprox. 375 South Rio Grande St., SLC, UT

LOG OF TEST BORING NO. B-3

JOB NO. 3-817-004426 DATE 05-05-03

RIG TYPE CME 550
BORING TYPE 3-3/4" ID Hollow-Stem Auger
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0										5" ASPHALT CONCRETE
								SM/GM FILL	moist medium dense	SILTY FINE TO COARSE SAND AND FINE GRAVEL; brown, FILL
								SM/ GM		6" CONCRETE SLAB
				D	6			FILL	moist very loose	SILTY FINE TO COARSE SAND AND FINE GRAVEL; brown, FILL
5								CL FILL		FINE TO MEDIUM SANDY CLAY with some fine gravel; brown, FILL
				D	pushed	102	18.7			
								CL FILL	very moist soft	SILTY CLAY with some fine to coarse sand and fine gravel; dark gray and gray, FILL
				D	4					
10								CL	saturated very soft	SILTY CLAY with occasional seams and up to 1/8" layers of silt and fine sand; grayish-brown
				D	3	76	44.4			
15										
								ML/ SM	saturated loose	ALTERNATING UP TO 3" LAYERS OF FINE SANDY SILT AND SILTY FINE SAND; gray
				D	9					
20										
										Stopped drilling at 19.0'.
										Stopped sampling at 20.5'.
										Installed 1-1/4" diameter slotted PVC pipe to 16.0'.
										* Not stabilized.
25										

GROUNDWATER

	DEPTH	HOUR	DATE
▽	13.3	*	05-05-03
▼	10.6		05-21-03

SAMPLE TYPE

A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
C - California Split Spoon Sample

FIGURE 3C

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PROJECT Utah State Archive Building
Aprox. 375 South Rio Grande St., SLC, UT

LOG OF TEST BORING NO. B-3

JOB NO. 3-817-004426 DATE 05-05-03

RIG TYPE CME 550
BORING TYPE 3-3/4" ID Hollow-Stem Auger
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration 3Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
25										The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary to a proper understanding of the nature of the subsurface materials.
30										
35										
40										
45										
50										

GROUNDWATER

	DEPTH	HOUR	DATE
▽	13.3	*	05-05-03
▼	10.6		05-21-03

SAMPLE TYPE

A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
C - California Split Spoon Sample

FIGURE 3C
(con't)

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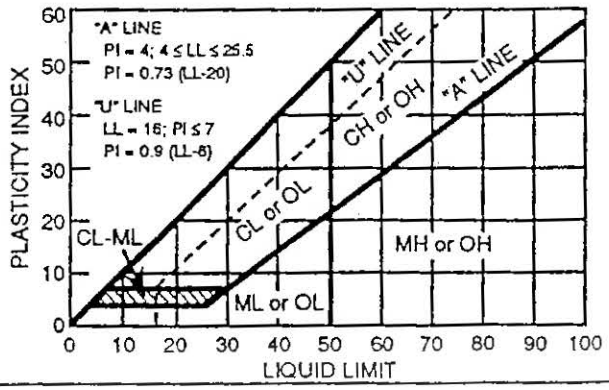
UNIFIED SOIL CLASSIFICATION SYSTEM

Soils are visually classified for engineering purposes by the Unified Soil Classification System. Grain-size analyses and Atterberg Limits tests often are performed on selected samples to aid in classification. The classification system is briefly outlined on this chart. Graphic symbols are used on boring logs presented in this report. For a more detailed description of the system, see "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)" ASTM Designation: 2488-84 and "Standard Test Method for Classification of Soils for Engineering Purposes" ASTM Designation: 2487-85.

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

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

PLASTICITY CHART



DEFINITION OF SOIL FRACTIONS

SOIL COMPONENT	PARTICLE SIZE RANGE
Boulders	Above 12 in.
Cobbles	12 in. to 3 in.
Gravel	3 in. to No. 4 sieve
Coarse gravel	3 in. to 3/4 in.
Fine gravel	3/4 in. to No. 4 sieve
Sand	No. 4 to No. 200 sieve
Coarse sand	No. 4 to No. 10 sieve
Medium sand	No. 10 to No. 40 sieve
Fine sand	No. 40 to No. 200 sieve
Fines (silt and clay)	Less than No. 200 sieve

FIGURE 4

amec

NOTES

ARCHIVES BUILDING

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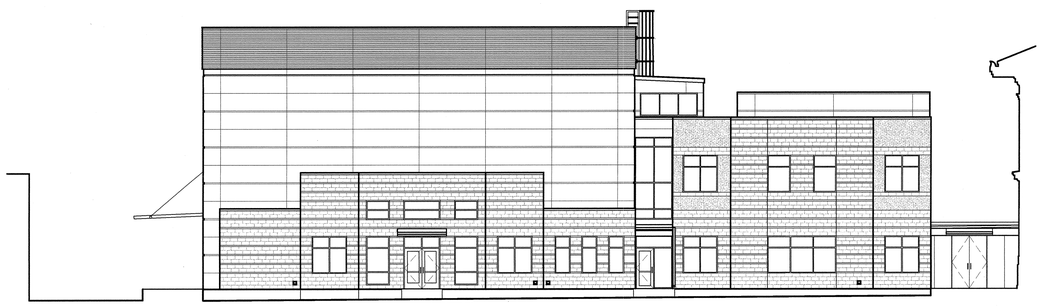

SHEET INDEX

SHEET	DESCRIPTION
	GENERAL
GI001	COVER SHEET & SHEET INDEX
GI002	BUILDING ANALYSIS PLAN
GI003	BUILDING ANALYSIS PLAN
	SITE
AS101	SITE PLAN
	STRUCTURAL
SE001	STRUCTURAL GENERAL NOTES & DETAILS
SB101	FOOTING AND FOUNDATION DETAIL
SF101	SECOND FLOOR AND LOW ROOF FRAMING PLAN
SF102	INTERMEDIATE ROOF FRAMING PLAN
SF103	HIGH ROOF FRAMING PLAN
SE401	SCHEMATIC X-BRACE ELEVATIONS
SE501	STRUCTURAL DETAILS
SE502	STRUCTURAL DETAILS
SE503	STRUCTURAL DETAILS
	ARCHITECTURAL
AE101	FIRST FLOOR PLAN
AE102	FIRST FLOOR WALL FRAMING PLAN
AE103	FIRST FLOOR REFLECTED CEILING PLAN
AE104	SECOND FLOOR PLAN
AE105	SECOND FLOOR WALL FRAMING PLAN
AE106	SECOND FLOOR REFLECTED CEILING PLAN
AE107	ROOF PLAN
AE201	EXTERIOR ELEVATIONS
AE202	EXTERIOR ELEVATIONS
AE301	BUILDING SECTIONS
AE302	BUILDING SECTIONS
AE303	BUILDING SECTIONS
AE304	WALL SECTIONS
AE305	WALL SECTIONS
AE306	WALL SECTIONS
AE401	ENLARGED PLANS & INTERIOR ELEVATIONS
AE402	ENLARGED STAIR PLAN AND SECTION
AE403	ENLARGED STAIR PLAN AND SECTION
AE404	ENLARGED VESTIBULE PLAN AND SECTIONS
AE501	WALL TYPES AND DETAILS
AE502	TYPICAL DETAILS
AE503	TYPICAL DETAILS
AE504	TYPICAL DETAILS
AE505	TYPICAL DETAILS
AE601	DOOR SCHEDULE
AE602	WINDOW SCHEDULE
	MECHANICAL
MI4001	MECHANICAL LEGEND AND ABBREVIATIONS
MI4101	FIRST FLOOR MECHANICAL PLAN
MI4102	SECOND FLOOR MECHANICAL PLAN
MI4103	MECHANICAL ROOF PLAN
MI4201	FLOW / CONTROL DIAGRAMS
MI4401	ENLARGED BOILER ROOM PLAN
MI4501	MECHANICAL DETAILS
MI4502	MECHANICAL DETAILS
MI4601	MECHANICAL SCHEDULE
	PLUMBING
PL101	FIRST FLOOR PLUMBING PLAN
PL102	SECOND FLOOR PLUMBING PLAN
PL401	ENLARGED PLUMBING PLANS
	ELECTRICAL
EE001	SYMBOL SCHEDULE / SHEET INDEX
EE101	TYPICAL MOUNTING HEIGHT DETAILS
ES101	ELECTRICAL SITE PLAN
EP101	MAIN FLOOR POWER PLAN
EP102	SECOND FLOOR POWER PLAN
EP501	POWER DETAILS
EP601	ONE-LINE DIAGRAM
EP602	GROUNDING / TELEPHONE RISER DIAGRAMS
EP603	MECHANICAL / LABORATORY EQUIPMENT SCHEDULES
EP604	PANEL SCHEDULES
EL101	MAIN FLOOR LIGHTING PLAN
EL102	SECOND FLOOR LIGHTING PLAN
EL501	LIGHTING DETAILS
EL601	LIGHTING FIXTURE SCHEDULE
EY101	MAIN FLOOR FIRE ALARM PLAN
EY102	SECOND FLOOR FIRE ALARM PLAN
EY103	MAIN FLOOR SECURITY / AUXILIARY PLAN
EY104	SECOND FLOOR SECURITY / AUXILIARY PLAN
EY601	FIRE ALARM RISER / SECURITY RISER DIAGRAMS

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

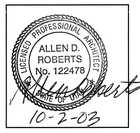
STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net



ARCHITECT

COOPER ROBERTS SIMONSEN ARCHITECTS
700 NORTH 200 WEST
SALT LAKE CITY, UT 84103
PHONE (801) 355-5915
FAX (801) 355-9885
www.crsachitects.com
ericp@crsarchitects.com

STRUCTURAL ENGINEER

ABSG CONSULTING, INC.
310 SOUTH MAIN, STE 300
SALT LAKE CITY, UT 84131
PHONE (801) 333-7676
FAX (801) 333-7677
mmainridge@absconsulting.com

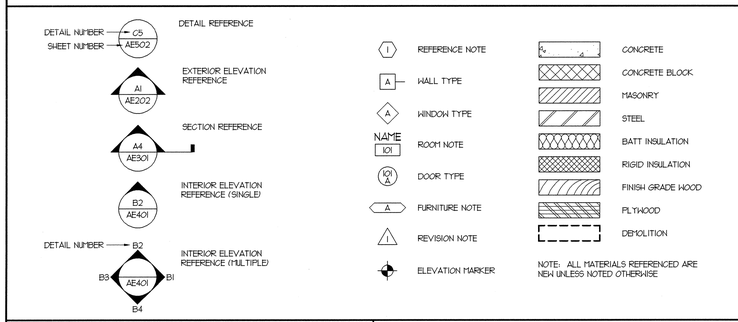
MECHANICAL ENGINEER

COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
PHONE (801) 322-2400
FAX (801) 322-2416
tcolvin @cea-ut.com

ELECTRICAL ENGINEER

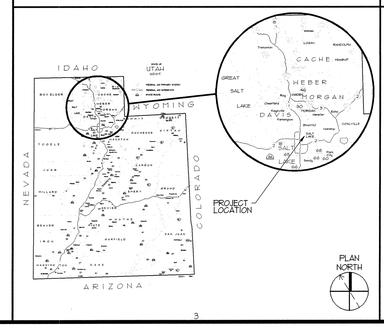
SPECTRUM
175 SOUTH MAIN, STE 300
SALT LAKE CITY, UT 84111
PHONE (801) 401-8491
FAX (801) 401-9471
www.spdesign,com

SYMBOLS LEGEND

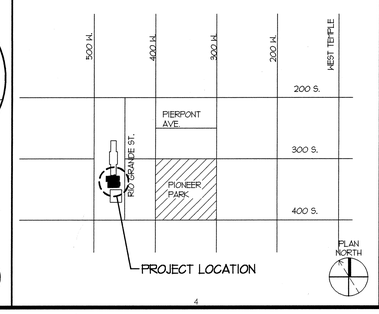


NOTE: ALL MATERIALS REFERENCED ARE NEW UNLESS NOTED OTHERWISE

VICINITY MAP



LOCAL MAP



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COVER SHEET & SHEET INDEX

GI001

#

FIRE ALARM INPUT/OUTPUT MATRIX

	ZONE	GENERAL ALARM	ELEVATOR RECALL MAIN LEVEL	ELEVATOR RECALL ALTERNATE LEVEL	FAN SHUTDOWN	FIRE DAMPER	ELEVATOR SHUNT-TRIP	SUPERVISORY	NOTES
		OUTPUT DEVICES							
INITIATING DEVICES 1	MAIN FLOW	•			•	•			
2	MAIN TAMPER							•	
3	MAIN LEVEL INITIATING LOOP	•			•	•			
4	MAIN LEVEL ELEVATOR DETECTOR	•		•	•	•			
5	MAIN LEVEL DUCT DETECTOR	•			•	•			
6	2ND LEVEL INITIATING LOOP	•			•	•			
7	2ND LEVEL ELEVATOR DETECTOR	•	•		•	•			
8	2ND LEVEL DUCT DETECTOR	•			•	•			
9	ELEVATOR SPRINKLER HEAT DETECTORS	•					•		
10									
11									
12									
13									

WIRING SCHEDULE

FUNCTION	< 500'	< 1000'	1000'-3000'	> 3000'
ADDRESSABLE LOOP	#18 TSP	#18 TSP	#16 TSP	#14 TSP
POWER LOOP	#14 THWN	#14 THWN	#12 THWN	#10 THWN
SPARE LOOP	#14 THWN	#14 THWN	#12 THWN	#10 THWN
STROBE HORNS	#14 THWN	#14 THWN	#12 THWN	#10 THWN

NOTIFICATION SCHEDULE

SYMBOL	STROBE SIZE	COVERAGE	AVERAGE CURRENT	MAXIMUM PER CIRCUIT ALONE
15	15 CD	20'x20'	.085A	17
30	30 CD	30'x30'	.135A	11
75	75 CD	40'x40'	.200A	7
110	110 CD	50'x50'	.225A	6

ADDRESSABLE LOOP LEGEND

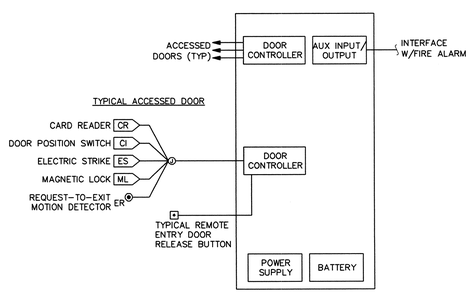
INITIATING LOOP	DESCRIPTION
FA-1.1	MAIN LEVEL ADDRESSABLE LOOP
FA-2.1	2ND LEVEL ADDRESSABLE LOOP

INDICATING LOOP LEGEND

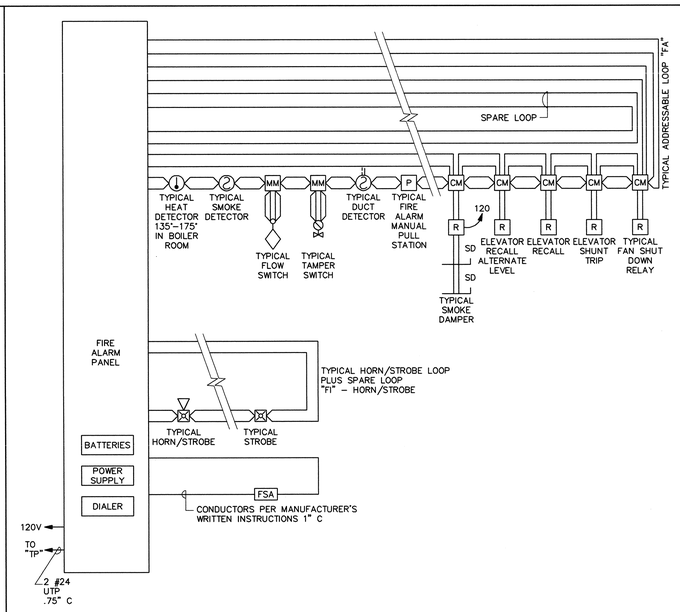
INDICATING LOOP	DESCRIPTION
FI-1.1	LOBBY INDICATING LOOP
FI-1.2	ADMINISTRATION INDICATING LOOP
FI-1.3	ASRS INDICATING LOOP
FI-1.4	CAMERA AREA INDICATING LOOP
FI-1.5	LAB INDICATING LOOP
FI-1.6	EXTERIOR INDICATING LOOP
FI-2.1	RECORDS PROCESSING INDICATING LOOP
FI-2.2	MEZZANINE INDICATING LOOP
FI-2.3	RECORDS ANALYSIS INDICATING LOOP

GENERAL SHEET NOTES

1. PLANS ARE BASED UPON 99 MONITOR AND CONTROL DEVICES PER ADDRESSABLE LOOP. OTHER CONFIGURATIONS ARE ACCEPTABLE SUBJECT TO CONTRACTOR ALLOWING FOR INCREASED WIRING REQUIREMENTS AND SUBMITTAL DRAWINGS SHOWING NEW WIRING CONFIGURATION. MAXIMUM INITIAL DEVICES PER LOOP SHALL NOT EXCEED 75% MAXIMUM ALLOWABLE.
2. PLANS ARE BASED UPON THE WIRING SCHEDULE SHOWN. WHERE MANUFACTURER'S REQUIREMENTS EXCEED REQUIREMENTS SHOWN, INCLUDE ADDITIONAL ASSOCIATED COSTS AND SUBMITTAL DRAWINGS INDICATING NEW WIRING CONFIGURATION.
3. PLANS ARE BASED UPON 2 AMPS AT 24 VDC, NOT TO EXCEED 75% (1.50 AMPS AVAILABLE). POWER SUPPLY CAPACITY PER NOTIFICATION CIRCUIT. NOTIFICATION DEVICE LOADS ARE BASED UPON NOTIFICATION DEVICE SCHEDULE SHOWN. INCLUDE ADDITIONAL ASSOCIATED COSTS FOR INCREASED WIRING AND POWER SUPPLY CAPACITY IF LOADS OF ACTUAL DEVICES PROVIDED EXCEED CIRCUIT CAPACITY, OR IF LOAD OUTPUT OF ACTUAL POWER SUPPLIES PROVIDED IS SIZED DIFFERENTLY. PROVIDE SUBMITTAL DRAWINGS SHOWING NEW WIRING CONFIGURATION.
4. FLOW AND TAMPER CONFIGURATION BASED UPON FIRE SPRINKLER DESIGN CONCEPT. FIELD VERIFY ACTUAL REQUIREMENTS. INCLUDE ANY ADDITIONAL MONITOR MODULES REQUIRED BY ACTUAL DESIGN REQUIREMENTS.
5. HEAT DETECTORS WHEN INSTALLED IN ELEVATOR SHAFTS OR MECHANICAL ROOMS FOR ELEVATOR SHUT DOWN SHALL HAVE HEAT DETECTOR WITH LOWER RESPONSE TIME INDEX THAN SPRINKLER HEAD.
6. ALL OUTPUT DEVICES ARE DESIGNED ON SYSTEMS WITH 2 AMP POWER SUPPLY.
7. HORN/STROBE BASED ON 120 MILLIAMPS, DOOR HOLDERS BASED ON 70 MILLIAMPS.
8. BATTERY CAPACITY TO BE ADEQUATE TO OPERATE 15 MINUTES AFTER 24 HOURS PLUS 25% SPARE CAPACITY.
9. VFD REQUIRES TWO RELAYS, ONE FOR SMOKE CONTROL, ONE SPARE.
10. RUN SPARE LOOPS IN SAME CONDUIT.
11. PROVIDE DUCT DETECTOR AT EACH FLOOR, PRIOR TO CONNECTION TO A COMMON RETURN AND PRIOR TO RECIRCULATING OR FRESH AIR INLET IN AIR RETURN SYSTEMS OVER 15,000 CFM CAPACITY AND SERVING MORE THAN ONE STORY.
12. PROVIDE MANUAL PULL STATIONS IN BOILER ROOMS AND KITCHENS.
13. PROVIDE ONE YEAR OFF SITE MONITORING INCLUDING ALL INTERFACE DEVICES AND MONITORING CHARGES. COORDINATE WITH BUILDING OWNER'S OFF SITE MONITORING COMPANY.
14. INSTALL DUCT DETECTORS PER NFPA 72 REQUIREMENTS AND PROVIDE ADDITIONAL DUCT DETECTORS DEPENDING UPON FINAL DUCT ARRANGEMENT.
15. LOCATE SMOKE DETECTORS MINIMUM 3' FROM AIR SUPPLY LOUVERS.
16. PROVIDE SYNCHRONIZED STROBES THROUGHOUT FACILITY. PROVIDE SYNCHRONIZATION MODULES PER MANUFACTURER'S REQUIREMENTS. INCLUDE ADDITIONAL WIRING, IF REQUIRED.



A2 ACCESS CONTROL SYSTEM RISER DIAGRAM
NTS



A4 FIRE ALARM RISER
NO SCALE

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8471 FAX (801) 401-9471
WWW.SPECTRUM-ENGINEERS.COM

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
WWW.STANTEC.COM

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
BMA@MAILSNARE.NET

LICENSED PROFESSIONAL ENGINEER No. 374857 BRAD R. MORREST STATE OF UTAH

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FIRE ALARM RISER/ ACCESS CONTROL RISER DIAGRAMS

EY601

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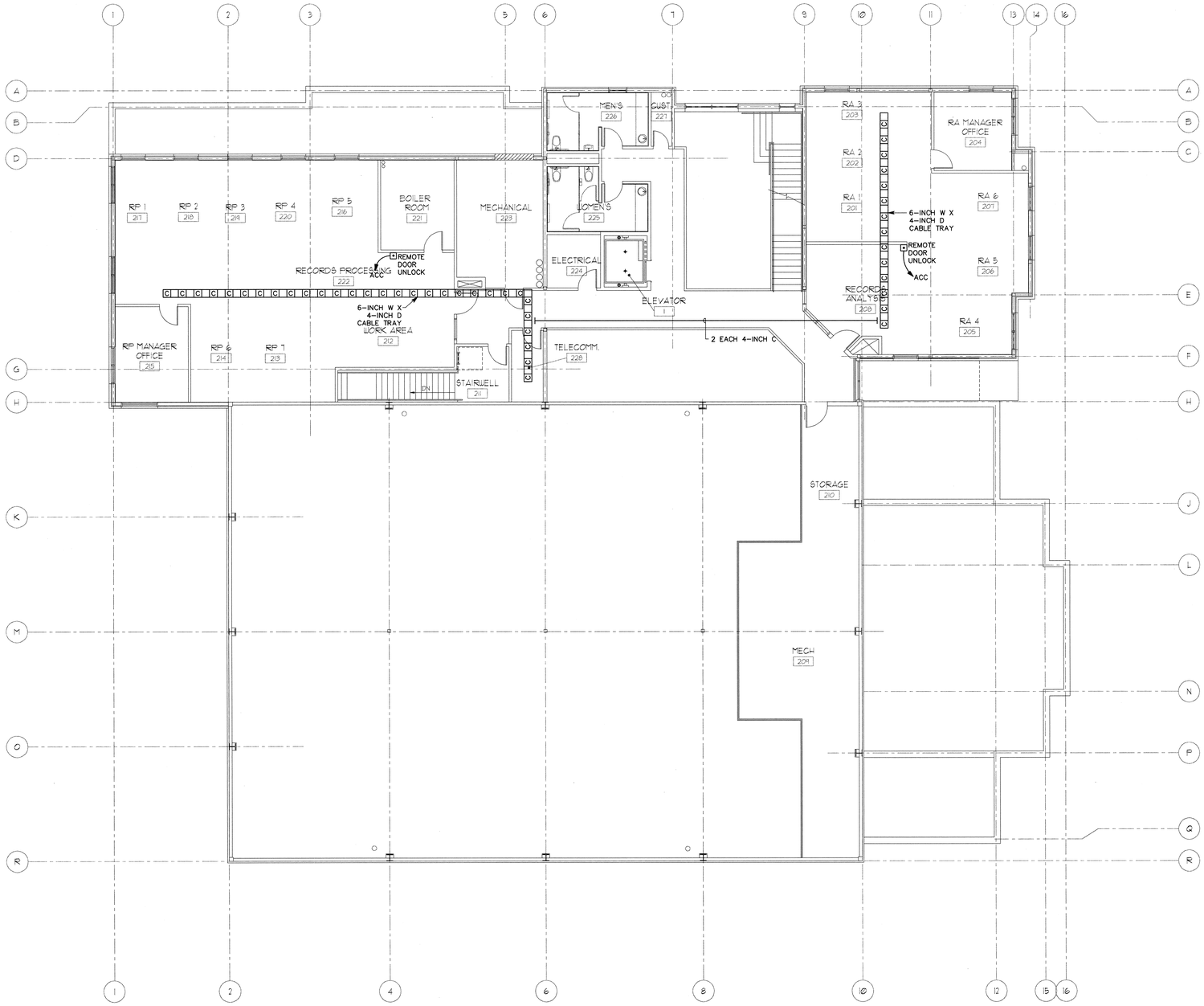

A1 SECOND FLOOR ACCESS CONTROL/AUXILIARY PLAN

SCALE: 1/8"=1'-0"

PLAN NORTH

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8471 FAX (801) 401-9471
WWW.SPECTRUM-ENGINEERS.COM

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
WWW.STANTEC.COM

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
BMA@MAILSNARE.NET

LICENSED PROFESSIONAL ENGINEER
No. 174852
CHAD B. FORREST
STATE OF UTAH

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
SALT LAKE CITY UTAH

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SECOND FLOOR ACCESS CONTROL/ AUXILIARY PLAN

EY104

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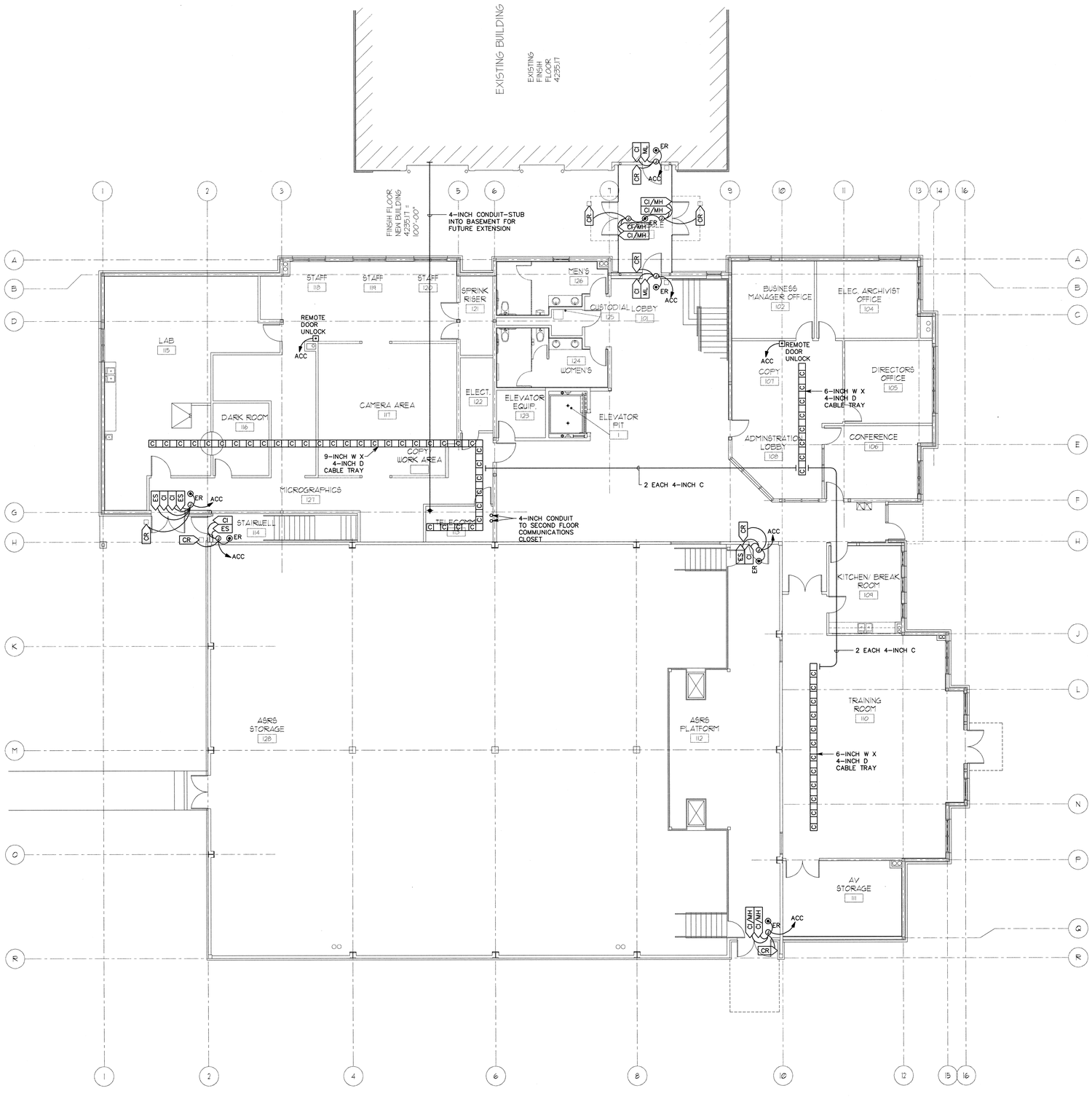

A1 MAIN FLOOR ACCESS CONTROL/AUXILIARY PLAN

SCALE: 1/8"=1'-0"

PLAN NORTH

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8471 FAX (801) 401-9471
WWW.SPECTRUM-ENGINEERS.COM

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
WWW.STANTEC.COM

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
BMA@MAILSNARE.NET

LICENSED PROFESSIONAL ENGINEER No. 374652 CRAIG B. FORREST STATE OF UTAH

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
SALT LAKE CITY UTAH

STATE OF UTAH DIVISION OF FACILITIES AND CONSTRUCTION

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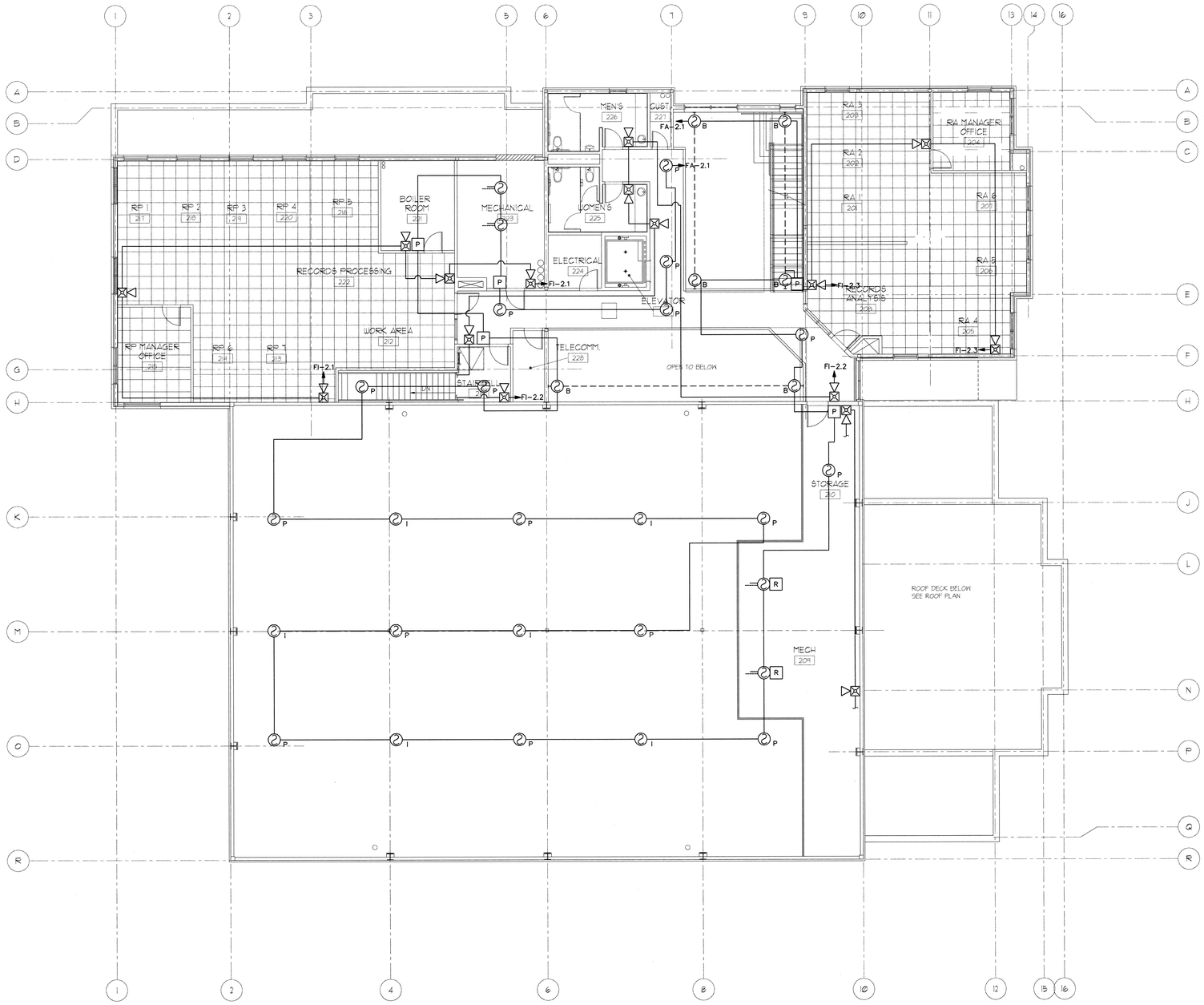
MAIN FLOOR ACCESS CONTROL/ AUXILIARY PLAN

EY103



A1 SECOND FLOOR FIRE ALARM PLAN

SCALE: 1/8"=1'-0"

PLAN NORTH

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-9471 FAX (801) 401-9471
WWW.SPECTRUM-ENGINEERS.COM

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
WWW.STANTEC.COM

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
BMA@MAILSNARE.NET

LICENSED PROFESSIONAL ENGINEER No. 374552 ROAD D. FORREST STATE OF UTAH

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
SALT LAKE CITY UTAH

STATE OF UTAH DIVISION OF FACILITIES AND CONSTRUCTION

4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

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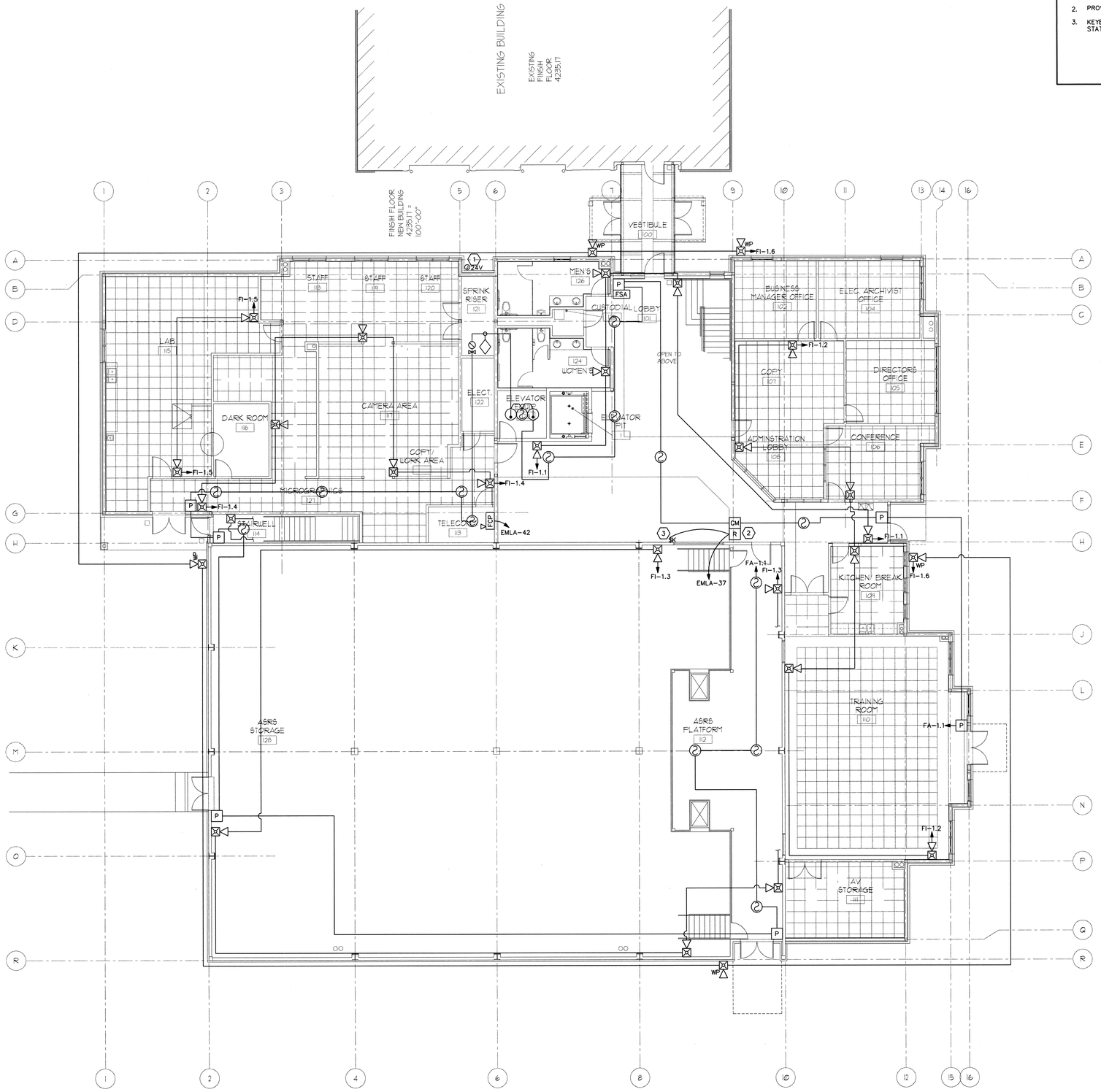
PROJECT NO: 20030420.CF
CAD DWG FILE: 20EY102.dwg
DRAWN BY: PSS
CHECKED BY: CBF

SECOND FLOOR FIRE ALARM PLAN

EY102

SHEET KEYNOTES

1. PROVIDE POWER SUPPLY CONNECTION TO EXTERIOR FIRE SPRINKLER BELL AT THIS LOCATION. CONNECT TO FIRE ALARM 24V POWER CIRCUIT.
2. PROVIDE CONNECTION TO FIRE BARRIER FOR WINDOW OPENING.
3. KEYED SWITCH OVERRIDE FOR FIRE DOOR TO RESET TO ORIGINAL STATE.



A1 MAIN FLOOR FIRE ALARM PLAN
SCALE: 1/8"=1'-0"

PLAN NORTH

COOPER ROBERTS SIMONSEN ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8471 FAX (801) 401-9471
WWW.SPECTRUM-ENGINEERS.COM

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
WWW.STANTEC.COM

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
BMA@MAILSNARE.NET

LICENSED PROFESSIONAL ENGINEER No. 374057 GRAD B. FORREST STATE OF UTAH

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
SALT LAKE CITY UTAH

STATE OF UTAH DIVISION OF FACILITIES AND CONSTRUCTION

4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

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PROJECT NO: 20030420.CF
CAD DWG FILE: 20EY101.dwg
DRAWN BY: PSS
CHECKED BY: CBF

MAIN FLOOR FIRE ALARM PLAN

EY101

File name: P:\2003\20030420\1Drawings\Sheet\20EY101.dwg Last Plotted: 10/01/2003 @ 09:23 By: PSS

LIGHTING FIXTURE SCHEDULE

NOTE TO BIDDERS: COMPLY WITH SECTIONS 16511, 16521, AND 16570 OF THE SPECIFICATIONS.
REFER TO SPECIFICATIONS FOR IMPORTANT TECHNICAL REQUIREMENTS FOR LIGHTING FIXTURES, BALLASTS, AND LAMPS. THE CATALOG NUMBERS LISTED BELOW HAVE BEEN CAREFULLY PREPARED TO ASSIST BIDDERS IN SELECTING PRODUCTS TO ACHIEVE THE DESIGN CONCEPT, HOWEVER, PRIOR TO BIDDING, EACH MANUFACTURER SHALL COMPARE THE CATALOG NUMBERS SHOWN WITH THE DESCRIPTION AND REQUIREMENTS ON THE DRAWINGS, AND SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES. SPECIFICALLY INCLUDED IN THIS EVALUATION SHALL BE THE VERIFYING OF PROPER MOUNTING KITS OR ACCESSORIES TO FACILITATE INSTALLATION AS SHOWN AT EACH LOCATION ON THE DRAWINGS. NO ALLOWANCE OR REDRESS WILL BE ALLOWED FOR DISCREPANCIES THAT WERE NOT REPORTED TO THE ARCHITECT/ENGINEER IN TIME FOR CORRECTION OR CLARIFICATION BEFORE THE BID. THE REPORTING OF ANY AMBIGUITY IS THE RESPONSIBILITY OF THE BIDDER. PROVIDE UNIT PRICES AND FIXTURE BRAND SELECTED FOR ADD/DELETE CHANGES FOR EACH FIXTURE TYPES SHOWN WITHIN 48 BUSINESS HOURS OF THE BID DATE. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY DISQUALIFY THE PRODUCTS AND EMPOWER THE ENGINEER TO DETERMINE FAIR VALUE FOR FIXTURE AND INSTALLATION CHANGES, WITHOUT FURTHER INPUT FROM THE CONTRACTOR OR INSTALLER. SUBMITTAL PACKAGE SHALL INCLUDE LAMP MANUFACTURER AND CATALOG NUMBER ON EACH FIXTURE SHEET. ON ALL PENDANT MOUNTED FIXTURES, PROVIDE A SECOND SET OF PENDANTS, OF A DIFFERENT LENGTH, AS DIRECTED BY THE ARCHITECT/ENGINEER, PROVIDED AND INSTALLED AT NO ADDITIONAL CHARGE. ALL FIXTURES SHALL BE APPROVED BY UL OR ANOTHER ACCEPTABLE TESTING LAB FOR THE PURPOSE INTENDED AND WITH THE LAMP AND BALLAST PROPOSED. CONTRACTOR ALLOWANCE PRICES ARE ACCURATE WHEN THIS JOB WAS SPECIFIED. CONTRACTOR AND ELECTRICAL DISTRIBUTOR SHALL VERIFY THIS ALLOWANCE AND REPORT ANY PROBLEMS TO THE ENGINEER BEFORE THE BID. ALLOWANCE PRICE MAY OR MAY NOT INCLUDE LAMP(S) OR FREIGHT AS NOTED, AND DO NOT INCLUDE ANY TAXES. UNIVERSAL VOLTAGE (120/277) BALLASTS REQUIRED UNLESS NOTED OTHERWISE.

SYMBOL	MARK	FIXTURE CHARACTERISTICS BODY / AIR / MOUNTING / DOOR LENS/LOUVER/REFLECTOR/OTHER	LAMP	WATTS	VOLTS	MANUFACTURER	CATALOG NUMBER	NOTES
	AS	INDIRECT LIGHT: ASYMMETRIC OPTICS, ALUMINUM REFLECTOR; WHITE PAINTED FINISH; MOUNTING AS SHOWN; REMOTE BALLASTS (FLUORESCENT – PROGRAMMED RAPID START ELECTRONIC, METAL HALIDE – PULSE START HPF MAGNETIC), UNLESS INDICATED INTEGRAL BALLAST (IB); ONE BALLAST PER FIXTURE WHERE POSSIBLE.						
(AS-5)	AS-5	2' PULSE START METAL HALIDE, WALL MOUNT.	200W PSMH	260W	277/120V	INSIGHT	TS922-00-1-X-VS HPF-200PSMH	
						ELLIPTIPAR	N/A	
						RAMBUSCH	PAL-XL-200PSMH-SC-IY-RB-120/277V	
						SPI	EDR 3603 WHT 200PSMH	
						LAM	ZAA14-WL-I-200PSMH-SGW-V-DT	
						WINONA	P1-LS-M200-120/277V-LS1-SGW-SB-STD	
	CM	STEEL LINEAR FIXTURES: LENGTHS AND CONFIGURATIONS SHOWN ON THE DRAWINGS; LAMPS FOUR FOOT WHERE POSSIBLE; PROGRAM START ELECTRONIC BALLASTS; T8 LAMPS; INTERNAL CONCEALED FASTENERS; COLOR AS NOTED AND/OR APPROVED BY ARCHITECT; ORIENT FIXTURE ACCORDING TO ARCHITECTS/ ENGINEER'S INSTRUCTIONS. SWIVEL STEM MOUNT UNLESS NOTED OTHERWISE. INSTALL LEVEL AND STRAIGHT WITH INVISIBLE SPLICES. PROVIDE ALL REQUIRED HANGERS, SPLICERS, END CAPS, JOINTS, FEEDS, ETC., FOR A COMPLETE INSTALLATION.						
(CM-4)	CM-4	6"X 6 1/2" PROFILE, WALL MOUNT, OPEN UPLIGHT, LOUVERED DOWNLIGHT, DIRECT/INDIRECT, 4' MODULE.	2-F32T8 RE835	60W/4'	277/120V	LITECONTROL	W-ID-66N24T8-PBSS-CWM-PST8-120/277	
						MARK	66W-DI-232T8-ET8PRS-UNIV-PLSS-MW-4'	
						NEORAY	88/2T8-S72-4-120/277PSEB	
						PRUDENTIAL	P 60 D5 M5 2 04 T8 PROG START BLA UNIVOLT	
						PMC	S66-DIA-W-2/OCT-4-PBL-WHT-EBSPEC-12/27	
						NATIONAL	S66-ID/D-232OCT-CB-W-UEB-CBA	
(CM-5)	CM-5	MODULAR, INDIRECT ONLY, ADJUSTABLE AIRCRAFT CABLE, NON PERFORATED, NOMINAL 9" X 3" OBROUND PROFILE, 4, 8 OR 12' MODULES AS SHOWN.	2-F32T8 RE835	60W/4'	277/120V	FINELITE	S1-X-2T8-SC-EP-EBSPEC-12/27-FAXX	
						CORELITE	AI-WN-2T8-1C-120/277-AC48-XX-X	
						NATIONAL	CPB-ID-232/OCT-SOLID-UEB	
						PEERLESS	PRM1-232-XX-UNIVOLT-PROG START	
						LIGHTOLIER	LP-1-A-2T8-X-UPRS	
						ALERA	IDC-2T8-S-CM-XX-PS8120/277-MW-4	
	DF	FLUORESCENT DOWNLIGHT; THERMALLY PROTECTED HOUSING: TO ACCOMMODATE MULTIPLE TRIMS AND REFLECTOR ASSEMBLIES FOR LAMPS AS LISTED BELOW; ELECTRONIC BALLASTS; LOW IRIDESCENT REFLECTOR FINISH (EVEN IF NOT SHOWN IN CATALOG #); SELF FLANGING TRIM UNLESS NOTED.						
(DF-17)	DF-17	RECESSED DOWNLIGHT; VERTICAL, 6" APERTURE, 32W CF-AMALGAM LAMP, CLEAR.	1-CF-A32 RE835	50W	277/120V	PORTFOLIO	C6032E-6051LI	
						HUBBELL	D232-120/277-A6ARW	
						LIGHTOLIER	8021CCLW/6132BU	
						LITHONIA	AFV 32TRT 6AR MVOLT	
						OMEGA	OM6-32PLT-CS-120/277	
						PRESCOLITE	CFT632EB-STF602	
						KIRLIN	RR80601-97	
	DL	LOW VOLTAGE DOWNLIGHTS, RECESSED, THERMALLY PROTECTED HOUSING, TO ACCOMMODATE MULTIPLE TRIMS AND REFLECTOR ASSEMBLIES FOR LOW VOLTAGE LAMPS AS LISTED BELOW, 4" APERTURE FOR MR16'S AND 6" NOMINAL FOR PAR36'S, MAX 7 1/2" DEEP.PROVIDE SAFETY GLASS LENS AS STANDARD, AND ACCESSORIES WHEN NOTED. PROVIDE EXZ LAMP (MR16) UNLESS INSTRUCTED OTHERWISE AT SUBMITTAL REVIEW. MAGNETIC DIMMABLE TRANSFORMERS, UNLESS NOTED OTHERWISE.						
(DL-99)	DL-99	LOW VOLTAGE ADJUSTABLE, SEMI-RECESSED MOUNT, MR16 LAMP, WHITE ALUMINUM TRIM, INTEGRAL 12V TRANSFORMER. SMALL CAN, 9 ½" X 5" X 7" H MAX. 3" NOMINAL APERTURE, 4 1/4" TRIM, CHROME TRIM	50W/MR16 12V	80W	277V	PRESCOLITE	N/A	
						REGGIANI	3760-10/71TW-277V-CHROME	
						CAPRI	N/A	
						HUBBELL	N/A	
						RSA	MLV3070/SH2A/RT50277-CHROME	
						LIGHTOLIER	300MR/313CM/7997(277)	
						LITHONIA	LV3 277 3VDW1W-CHROME	
	E10	EXIT SIGN: METAL HOUSING; CEILING MOUNT, SEE DRAWINGS; ARROWS PER PLANS; LED LAMPS; EDGE LIGHTED CLEAR LENS; GREEN LETTERS ON CLEAR BACKGROUND. MUST MEET NFPA ILLUMINATION STANDARDS. UNITS SHOWN ARE CEILING MOUNT MODELS. CONTRACTOR TO PROVIDE MATCHING LOW LEVEL WALL MOUNTED UNITS WHERE REQUIRED.						
(E10-1)	E10-1	SINGLE FACE:	LED	20W	120/277V	DUAL-LITE	LECSGWA	
						MCPHILBEN	45VL-1-GC-XX	
						HUBBELL	X3DL-X-1-GW-X-NO	
						LITHONIA	LRP W 1 GC XX 120/277	
						ISOLITE	EDGL-S-S-G-BK (BLACK HOUSING)	
						CHLORIDE	STDLX-X-1-GC-X	
						LIGHTOLIER	LEAC1GCX	
(E10-2)	E10-2	DUAL FACE:	LED	20W	120/277V	DUAL-LITE	LECDGWA	
						MCPHILBEN	45VL-2-GM-XX	
						HUBBELL	X3DL-X-2-GW-X-NO	
						LITHONIA	LRP W 2 GMR XX 120/277	
						ISOLITE	EDGL-D-S-G-BK (BLACK HOUSING)	
						CHLORIDE	STDLX-X-2-GC-X	
						LIGHTOLIER	LEAC2GC7	
	E13	AREA OF REFUGE SIGN: CAST ALUMINUM HOUSING, UNIVERSAL MOUNTING; LED, DIFFUSE LENS PANEL; GREEN LETTERS ON WHITE BACKGROUND. MUST MEET NFPA ILLUMINATION STANDARDS.						
(E13-1)	E13-1	SINGLE FACE:	LED	1W	120/277V	CHLORIDE	RLA1GW-SW-ARA	
						LITHONIA	LE P W 1 G 120/277 AREA OF REFUGE	
						ISOLITE	LPXSNBBAWHGDUAL AREA OF REFUGE EXT.AL.	
						MCPHILBEN	30VL-1-P-W-GW-AREA OF REFUGE	
						LIGHTOLIER	LDA1GW-REFUGE	
						PRESCOLITE	XD-1-G-AC-W-SP AREA OF REFUGE	
	G	INDIRECT TROFFERS: RECESSED FOR LAY-IN GRID; HINGED FLUSH STEEL DOOR WITH LATCH; EARTHQUAKE CLIPS, PROGRAM START ELECTRONIC BALLASTS; LONG COMPACT FLUORESCENT LAMPS; ONE BALLAST PER FIXTURE, 100-10% DIMMING BALLAST WHERE SHOWN.						
(G-6UV)	G-6UV	2X4, 4-LAMP. DIMMING BALLAST (.5%). PROVIDE UV FILTERING MEDIA FOR ENTIRE LENGTH OF PERFORATED LENS. FILTER/FIXTURE COMBINED UV OUTPUT SHALL NOT EXCEED 1Ø NW/LUMEN. (PROVIDE SAMPLE FOR TESTING PRIOR TO ORDERING AND ACCEPTANCE OF FIXTURES. TESTING SHALL BE PERFORMED BY RANDY SILVERMAN – UNIVERSITY OF UTAH PRESERVATION LIBRARIAN)	4-F40BX RE841	120W	277V	FOCAL POINT	FBX-24-B-4BX40-SP-277-G-PS-WH-DIM	
						PRUDENTIAL	CL6038-24-440BX-X1-DIM-277	
						PMC	SS24-RDI-T-4BX40-4-PERF-WHT-277-DIM	
						VISTA	S971120-4 40BX 2X4 DIM 277V RS	
						MIDWEST	2LLGS440BXDIMMRPW 277	
						LITHONIA	T2AVG 2CF40 MDR 277 DIM	
						LIGHTOLIER	QVL2GPFSS4FT-277-PB	
	GM	PRISMATIC: SURFACE MOUNT; HINGED AND LATCHED DOOR; ACRYLIC PRISMATIC LENS, MINIMUM 1/8"; PROGRAM START ELECTRONIC BALLASTS; T8 LAMPS; ONE BALLAST PER FIXTURE WHERE POSSIBLE UNLESS TWO LEVEL SWITCHING IS SHOWN ON THE PLANS; SPECIFICATION GRADE.						
(GM-1)	GM-1	1X4, 2-LAMP, 5" DEEP MAX., FLUSH STEEL DOOR.	2-F32T8 RE835	65W	277/120V	LITHONIA	M 232 A12125 MVOLT TUBRHP	
						HUBBELL	SSC2CA02UPSE	
						METALUX	MC-232A125-UNV-EB81-PROGRAM START	
						DAYBRITE	1SM232-FS21-UNV-1/2EB-SPEC	
						COLUMBIA	SM14-232-FSA12-EB8-PROG	
						LIGHTOLIER	SXT1SVI232-U-SOP	
	GS	TROFFERS: RECESSED FOR LAY-IN GRID; STATIC; HINGED AND LATCHED STEEL DOOR; .125 ACRYLIC PRISMATIC LENS, MINIMUN 1/8"; EARTHQUAKE CLIPS; MAX 5" DEEP; SPECIFICATION GRADE; PROGRAM START ELECTRONIC BALLASTS, T8 LAMPS; ONE BALLAST PER FIXTURE WHERE POSSIBLE, UNLESS TWO LEVEL SWITCHING IS SHOWN ON THE PLANS.						
(GS-4)	GS-4	2X4, 3 LAMP.	3-F32T8 RE835	95W	277/120V	LITHONIA	2 SP8G 332 A12125 1/3 MVOLT TUBRHP	
						METALUX	2GP-332A125-UNV-EB81-PROGRAM START	
						DAYBRITE	2DPG332-FS21-UNV-1/3EB-SPEC	
						COLUMBIA	4PS24-332G-FSA12.125-3EB8-PROG	
						LIGHTOLIER	XT2GVI332-UNV-03P	
						HUBBELL	RS3GNA02UPSE	
	HB	HIGH BAY INDUSTRIAL HID FIXTURES: CAST ALUMINUM BALLAST HOUSING; HIGH POWER FACTOR BALLAST; ADJUSTABLE SPUN ALUMINUM REFLECTOR; MANUFACTURER SHALL RECOMMEND SETTINGS FOR EACH SPACE AND/OR REFLECTOR SIZE WHERE MORE THAN ONE IS OFFERED TO ACHIEVE ACTUAL S/MH REQUIREMENTS; FUSED. PROVIDE MULTI-TAP BALLASTS (120,208,240,277 VOLT) UNLESS SPECIFIED OTHERWISE. USE LAMP APPROVED FOR USE IN OPEN FIXTURES IF FIXTURE USED IS OPEN, OTHERWISE USE ENCLOSED FIXTURE. PROVIDE CAST POWER HOOK WITH RECEPTACLE, POWER CORD WITH PLUG, AND SAFETY CABLE FOR SUSPENDING FIXTURES FLUSH WITH THE BOTTOM OF THE TRUSSES, UNLESS OTHERWISE INDICTED. RATED FOR 55 DEGREES C. PROVIDE WIREGUARDS FOR OPEN FIXTURES, AND HINGED LENSES/COVERS FOR ENCLOSED FIXTURES.						
(HB-6)	HB-6	200W PSMH, OPEN WITH WIREGUARD. USE OPEN FIXTURE RATED LAMP.	200PSMH	250W	MTB	G.E.	GHBB20P0A511V6FJ-RHBTF-H2000NE-SFC5-B	
						LUMARK	MPHB-SA18-M-200-F1-MT-WG18-SCF-TPPH-F/PHC/FL-1	
						DAYBRITE	HBO-200P-MT-OR-A16-WGN16-SF-PBCH-BSC3	
						HUBBELL	BL-200W8-BI/BL-SOF/BL-TLRX/PHEXXX/RG14	
						LITHONIA	THS 200MP A16 TB WGA16 PPH/LCPP/SCK SF SCWA	
						EXCELINE	BYH14200PMA-WG-K717X-8-F-723CP	
(HB-19)	HB-19	400W HPS, AISLE LIGHT OPTICS. WIREGUARD.	400HPS	470W	MTB	DAYBRITE	HBO-400S-MT-AA16-SF-PBCH-BSC3	
						HUBBELL	BL-400S8-AL/BL-SOF/BL-TLRX/PHEXXX	
						G.E.	GHBW40S0A5V6FJ-RHBTF-SFC5-B	
						LUMARK	HPAB-SDA-OB1-400-MT-F1-SCF-TPPH-F/PHC/FL-1	
						LITHONIA	THV 400S A14 TB SF-PPH/LCPP/SCK	
						EXCELINE	BYA19400LX-WG-K717X-8-F-723CP	
	HC	HID CYLINDER DOWNLIGHTS; CEILING, PENDANT OR WALL BRACKET MOUNTING AS INDICATED WHERE CEILING IS SLOPED PROVIDE SWIVEL ADAPTER; HIGH POWER FACTOR BALLASTS; FUSED; PROVIDE TEMPERED GLASS SHIELDS FOR METAL HALIDE AND OTHER LAMPS REQUIRING END OF LIFE PROTECTION; FINISH AS SPECIFIED BY ARCHITECT.						
(HC-1)	HC-1	CEILING MOUNT 8-11" DIA. CYLINDER, ALUMINUM HOUSING.	100PSMH COATED	130W	277/120V	LIGHTOLIER	DL7ACL/CS8V10HF(100PSMH)	
						PRESCOLITE	HD10C13-X-120/277-FSD/FA	
						LITHONIA	CC11-100M-AR-120-SF-SCWA	
						HUBBELL	LC727652GW-F-DTB	
						PORTFOLIO	M8000-X-746-F-44000C-120/277	
						OMEGA	OM10-100ED17(PS)-SC-CS-120/277	
						KIRLIN	SR50727-97-F	
	ID	DARKROOM LIGHTS; MOUNTING AS NOTED; VERIFY FILTER COLORS OR VERBAGE WITH ARCHITECT PRIOR TO ORDERING.						
(ID-1)	ID-1	RECESSED DARKROOM LIGHT WITH COLORED FILTERS.	25W/100W	125W	120V	COLE	PH-810-2PB	
						LIGHTECH	38102	
						MARK	DR-RG-2-MB-SSD-73-X-X	
						MORLITE	F-548-2DR	
						ALKCO	R2058-2	
						INFINITY	DRM2-X	
(ID-2)	ID-2	ROOM "IN USE" LIGHT; WALL MOUNTED, TEXT AS NOTED.	LAMPS INCLUDED	100W	120V	MCPHILBEN	30VI-1P-12-WG-ROOM IN USE	
						LIGHTECH	L-9153	
						COLE	S193- ROOM IN USE	
						MORLITE	S-225-SIGN ?IN USE?	
						EMERGI-LITE	WATP-1-X-120-X-?ROOM IN USE?	
	P3	PARABOLIC LOUVER FIXTURES WITH 3" LOUVERS IN PLASTIC PROTECTORS AND FULL DEPTH REFLECTOR; SIZE AS NOTED; PROGRAM START ELECTRONIC BALLASTS PER SPECS; T8 LAMPS; ONE BALLAST PER FIXTURE UNLESS NOTED FOR SWITCHING; STATIC OR AIR RETURN AND HEAT REMOVAL; EARTHQUAKE CLIPS INSTALLED ON ON GRID FIXTURES; HINGED AND LATCHED DOOR; LOW IRIDESCENT LOUVER FINISH, VERTICAL GRAIN DIE STAMPED LOUVERS; TWO FORMED BALLAST COVERS; MAX 1300 CD/M2 ABOVE 45 DEGREES.						
(P3-6)	P3-6	2X4, 18 CELL LAY-IN; SEMI-SPECULAR SILVER, 3-LAMP. STATIC.	3-F32T8 RE835	95W	277/120V	LITHONIA	2PM3NGB-332-18LD-MVOLT-1/3TUBRHP-2R	
						DAYBRITE	2P3GS332-36SL-UNV-1/3-EB-SPEC	
						METALUX	2EP3GX-332S36I-UNV-PROGRAM START-2BC	
						COLUMBIA	P424-332G-LD36-S-3EB8120/277 PROG	
						HUBBELL	RD3GSZAFUPSE	
						LIGHTOLIER	DPS2G18LP332-U-03P	
(P3-6D)	P3-6D	2X4, 18 CELL LAY-IN; SEMI-SPECULAR SILVER, 3-LAMP. STATIC. 1% DIMMABLE BALLAST.	3-F32T8 RE835	95W	277/120V	LITHONIA	2PM3NGB-332-18LD-MVOLT-1/3TUBRHP-2R-DIM	
						DAYBRITE	2P3GS332-36SL-UNV-1/3-EB-SPEC-DIM	
						METALUX	2EP3GX-332S36I-UNV-PROGRAM START-2BC-DIM	
						COLUMBIA	P424-332G-LD36-S-3EB8120/277 PROG-DIM	
						HUBBELL	RD3GSZAFUPSE-DIM	
						LIGHTOLIER	DPS2G18LP332-U-03P-DIM	
	SA	GENERAL PURPOSE INDUSTRIAL: WHITE ENAMEL, APERTURED REFLECTOR; PROGRAM START ELECTRONIC BALLASTS; T8 LAMPS; ONE BALLAST PER FIXTURE WHERE POSSIBLE; UNLESS TWO LEVEL SWITCHING IS SHOWN ON THE PLANS; STEM MOUNTED WITH TONG HANGERS.						
(SA-1)	SA-1	4', 2-LAMP.	2-F32T8 RE835	65W	277/120V	LITHONIA	EJA232-MVOLT-TUBRHP-THUN	
						LIGHTOLIER	KWA232-U-SOP	
						METALUX	IA-232-UNV-PROGRAM START	
						HUBBELL	IG142R-PP10-UPS	
						COLUMBIA	CSR4-232U-EB8120/277 PROG-CSTH	
						DAYBRITE	IA232-UNV-1/2-EB-SPEC	
(SA-2)	SA-2	8', 4-LAMP.	4-F32T8 RE835	120W	277/120V	LITHONIA	TEJA232-MVOLT-1/4TUBRHP-THUN	
						LIGHTOLIER	KWA232-8-U-SOP	
						METALUX	8TIA-232-UNV-PROGRAM START	
						HUBBELL	IG184R-PP10-UPS	
						COLUMBIA	CSR8-232U-4EB8120/277 PROG-CSTH	
						DAYBRITE	TIA232-UNV-1/4-EB-SPEC	
	TH	TRACK AND TRACK LIGHTS: LENGTH OF TRACK AND NUMBER OF FIXTURES AND ACCESSORIES AS SHOWN ON DRAWINGS. TRACK FEEDENDS, DEADENDS, TURNS, HANGING DEVICES, ETC., ARE AS REQUIRED TO INSTALL TRACKS AS SHOWN ON DRAWINGS AND/OR SPECIFIED, IN COMPLIANCE WITH NEC 410-104. INSTALLERS ARE CAUTIONED TO ENSURE TRACK HEADS AND TRACK ARE COMPATIBLE (I.E., ADAPTER FOR TWO CIRCUIT TRACK WHERE REQUIRED).						
(TH-1)	TH-1	SINGLE CIRCUIT TRACK, SURFACE MOUNT, WHITE.		180VA	/2'	HALO	L65X-P SERIES	
						PRESCOLITE	TS-WH SERIES	
						LIGHTOLIER	9100WH SERIES	
						CAPRI	CT/W SERIES	
						HUBBELL	HTTRAXXWH SERIES	
						STAFF	58041-WH SERIES	
						LITHONIA	LT WH SERIES	
(TH-19)	TH-19	TRACKLIGHT; LOW VOLTAGE GIMBAL RING LAMPHOLDER,SOLID STATE TRANSFORMER; WHITE.	MR16 EXZ	80W	120V	HALO	L2716P/L2001	
						PRESCOLITE	TV343/TV75	
						STAFF	9051 WH	
						CAPRI	CR6117	
						LIGHTOLIER	6296	
						HUBBELL	HTA216WH	
						LITHONIA	LTC GMBR MR16 WH	
	TX	SPECIAL FIXTURES AS INDICATED. MEET ALL REQUIREMENTS OF SPECIFICATIONS AND FIXTURE SCHEDULE. VISUAL AND FINISH APPROVAL REQUIRED.						
(TX-1)	TX-1	DECORATIVE EXTERIOR SCONCE	LAMPS	WATTS	VOLTS	MANUF	TO BE SELECTED BY ARCHITECT. CONTRACTOR ALLOWANCE: $500.00 EACH – INCLUDING LAMPS, FREIGHT & DISTRIBUTOR MARKUP	
(TX-2)	TX-2	DECORATIVE CEILING FAN	N/A	300W	120V	MATTHEWS	GERBAR VENT-BETTINA	
(TX-3)	TX-3	DECORATIVE FLUORSCENT STRIP LIGHT	RE835	40W	120V	METALUX	SM-1-28T5-120-EBT5-1/ SM-RP-2IN-ASY	
(TX-4)	TX-4	DECORATIVE INTERIOR WALL SCONCE	LAMPS	WATTS	VOLTS	MANUF	TO BE SELECTED BY ARCHITECT. CONTRACTOR ALLOWANCE: $500.00 EACH – INCLUDING LAMPS, FREIGHT & DISTRIBUTOR MARKUP	
(TX-5)	TX-5	DECORATIVE FLOODLIGHT	150WT3/T4	200W	120V	ERCO	34100.023	
(TX-6)	TX-6	ARTWORK FLOODLIGHT	LAMPS	WATTS	VOLTS	MANUF	TO BE SELECTED BY ARCHITECT. CONTRACTOR ALLOWANCE: $500.00 EACH – INCLUDING LAMPS, FREIGHT & DISTRIBUTOR MARKUP	
	UC	UNDERCABINET LIGHT: LOW PROFILE X 5 1/4"DEEP X LENGTH AS NOTED; ACRYLIC DIFFUSER.						
(UC-9)	UC-9	24 1/8" LONG, WHITE.	F17T8	15W	120V	NULITE	112 17 ELB10	
						FSC	3124-T8-EL	
						LIGHTOLIER	TCU17WS0120	
						CREATIVE	UC-117-T8	
						DURAY	HUC 117 PSEB120	
						HUBBELL	UL117B	
(UC-10)	UC-10	48 1/8" LONG, WHITE.	F32T8	40W	120V	NULITE	112 32 ELB10	
						FSC	3148-T8-EL	
						LIGHTOLIER	TCU32WS0120	
						CREATIVE	UC-132-T8	
						DURAY	HUC 132 PSEB120	
						HUBBELL	UL132B	
	WB	WALL MOUNTED FLUORESCENT LOCATED ABOVE WALL ELEMENT (MIRROR/WHITEBOARD, ETC.): AS INDICATED ON DRAWINGS; WITH ACRYLIC INJECTION MOLDED; PROGRAM START ELECTRONIC BALLASTS; T8 LAMPS; ONE BALLAST PER FIXTURE WHERE POSSIBLE, UNLESS TWO LEVEL SWITCHING IS SHOWN ON THE PLANS.						
(WB-6)	WB-6	2-LAMP, WALL MOUNT, 48", WRAPAROUND; ACRYLIC INJECTION MOLDED PRISMATIC DIFFUSER.	2-F32T8 RE835	65W	277/120V	DAYBRITE	WB232-CP-UNV-EB-SPEC	
						LITHONIA	WC 232 A12 MVOLT-TUBPHP	
						WELLMADE	182-P-248T8-U-P	
						METALUX	BC-232-UNV-PROGRAM START	
						LIGHTWAY	VL232NL-120/277-PS	
						DURAY	WQ-6232-A-EBPS120/277	

RELAY PANEL "RP" SCHEDULE

RLY NO	AMP	POLE	VOLT	CIRCUITS	CONTROL GROUP	DESCRIPTION	LOW VOLTAGE SECTION	DESCRIPTION	CONTROL GROUP	CIRCUITS	VOLT	POLE	AMP	RLY NO
1	20	1	277	2HA-5	A,1,2,3,4	ASRS PLATFORM		MAIN LVL LOBBY DOWNLIGHTS	B,1,2,3,4	2HA-13	277	1	20	2
3	20	1	277	2HA-5	A,1,2,3,4	ASRS STORAGE		2ND LVL LOBBY DOWNLIGHTS	B,1,2,3,4	2HA-13	277	1	20	4
5	20	1	277	2HA-7	A,1,2,3,4	ASRS SOUTH HIGH BAY		2ND LVL LOBBY PENDANTS	B,1,2,3,4	2HA-13	277	1	20	6
7	20	1	277	2HA-9	A,1,2,3,4	ASRS NORTH HIGH BAY		LOBBY CEILING FANS	B,1,2,3,4	2MA-25	120	1	20	8
9	20	1	277	2HA-11	A,1,2,3,4	ASRS MEZZANINE		STAIRWELL UPLIGHTS	B,1,2,3,4	2HA-19	277	1	20	10
11	20	1	277			SPARE RELAY		ARTWORK LIGHTING	B,1,2,3,4	2HA-15	277	1	20	12
13	20	1	277			SPARE RELAY		CLEAR STORY UPLIGHTS	B,1,2,3,4	2HA-17	277	1	20	14
15	20	1	277			SPARE RELAY		FUTURE LANDSCAPE LTG	1,2,3,4		277	1	20	16
17	20	1	277			SPARE RELAY		FUTURE LANDSCAPE LTG	1,2,3,4		277	1	20	18
19	20	1	277			SPARE RELAY		FUTURE LANDSCAPE LTG	1,2,3,4		277	1	20	20
21	20	1	277			SPARE RELAY		FUTURE LANDSCAPE LTG	1,2,3,4		277	1	20	22

RELAY PANEL–AUTOMATIC CONTROL GROUP LEGEND

CONTROL GROUP	CONTROL METHOD
A	TIMECLOCK ON/ TIMECLOCK OFF (ZONE #1)
B	TIMECLOCK ON/ TIMECLOCK OFF (ZONE #2)
C	PHOTOCELL ON/ PHOTOCELL OFF
D	SPARE GROUP
E	SPARE GROUP
F	SPARE GROUP
G	SPARE GROUP
H	SPARE GROUP

RELAY PANEL–OVERRIDE CONTROL GROUP LEGEND

CONTROL GROUP	CONTROL METHOD
1	LOBBY AREA CONTROL STATIONS
2	ASRS CONTROL STATIONS
3	ALL LIGHTING ON
4	ALL LIGHTING OFF
5	SPARE GROUP
6	SPARE GROUP

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
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STRUCTURAL ENGINEER
EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

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SPECTRUM ENGINEERS
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SALT LAKE CITY, UT
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SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
WWW.STANTEC.COM

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
BMA@MAILSNARE.NET

LICENSED PROFESSIONAL ENGINEER No. 374952 CHAD B. FORREST STATE OF UTAH

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LIGHTING FIXTURE SCHEDULE

EL601

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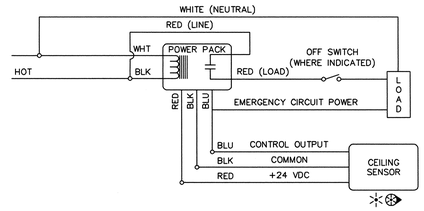
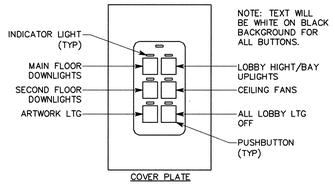


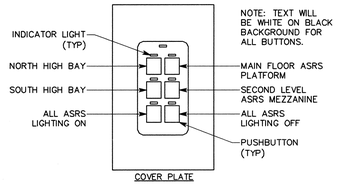
E5 TYPICAL ROOM WITH ONE CEILING SENSOR, WITH OR WITHOUT WALL SWITCH

NO SCALE



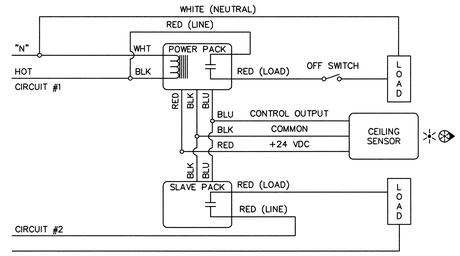
D3 LIGHTING CONTROL STATION DETAIL, LOBBY & COMMON AREAS "LCS-2"

NTS



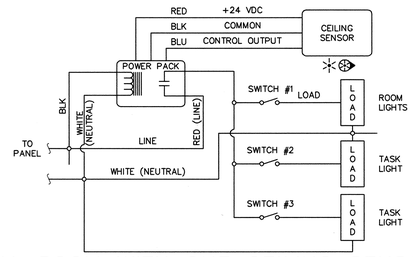
D4 LIGHTING CONTROL STATION DETAIL, ASRS AREA "LCS-1"

NTS



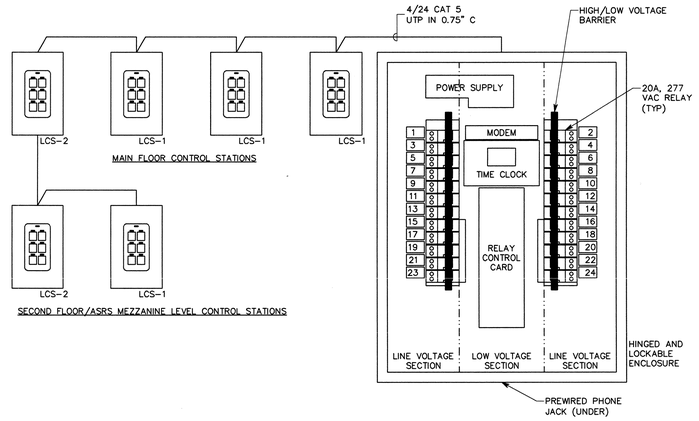
D5 TYPICAL ROOM WITH ONE SENSOR CONTROLLING TWO CIRCUITS

NO SCALE



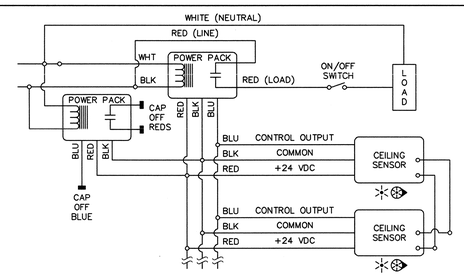
C5 TYPICAL ROOM WITH ONE CEILING SENSOR, ONE CIRCUIT AND MULTIPLE SWITCHED LOADS

NO SCALE



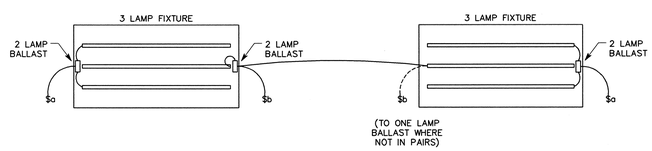
B3 LIGHTING RELAY PANEL RISER DIAGRAM

NTS



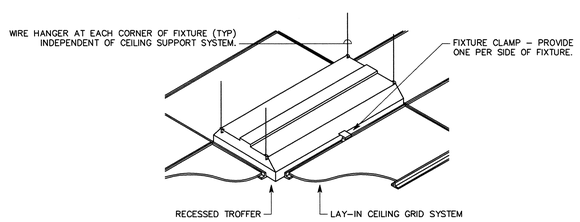
B5 TYPICAL ROOM WITH MULITPLE CEILING SENSORS

NO SCALE



A3 2 LEVEL SWITCHING DETAIL

NTS



A5 RECESSED FIXTURE MOUNTING DETAIL

NTS

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SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
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EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

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SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
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(801) 261-0090 FAX (801) 266-1671
WWW.STANTEC.COM

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
BMA@MAILSNARE.NET

LICENSED PROFESSIONAL ENGINEER No. 374052 CRAIG B. FORREST STATE OF UTAH

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LIGHTING DETAILS

EL501

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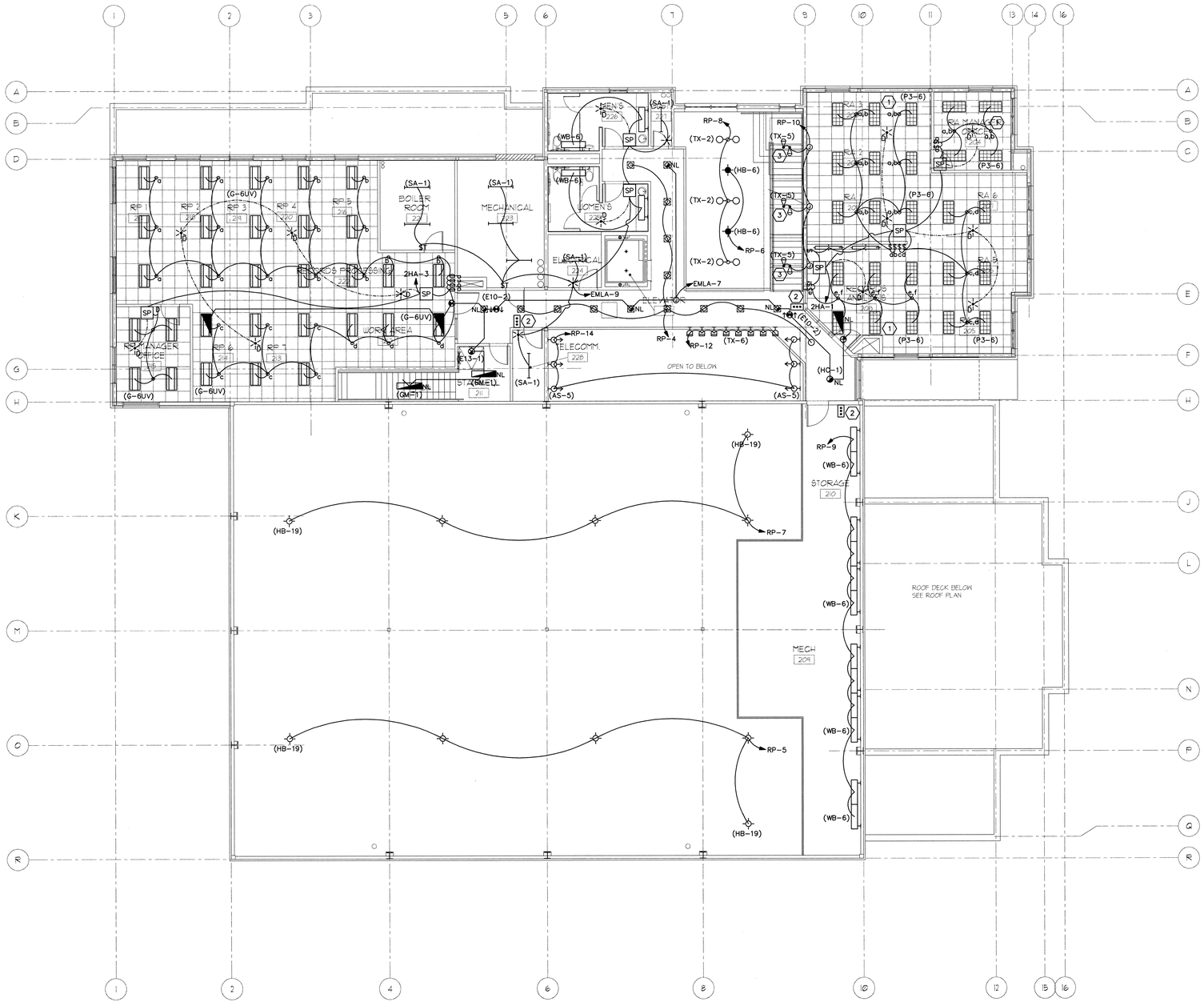
SHEET KEYNOTES

1. FIXTURES IN THIS ROOM SHALL BE DUAL-LEVEL SWITCHED.
2. LIGHTING CONTROL STATION FOR RELAY PANEL "RP".
3. ROUTE CONDUIT FOR TX-3 LIGHT FIXTURES ON TOP OF CROSS BEAM INTO RECORDS ANALYSIS AREA. PAINT CONDUIT WHITE TO MATCH BEAM.



A1 SECOND FLOOR LIGHTING PLAN
SCALE: 1/8"=1'-0"

PLAN NORTH

COOPER ROBERTS SIMONSEN ARCHITECTURE

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
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STRUCTURAL ENGINEER
EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
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LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
BMA@MAILSNARE.NET

LICENSED PROFESSIONAL ARCHITECT No. 174057 CHAD B. FORREST STATE OF UTAH

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SECOND FLOOR LIGHTING PLAN

EL102

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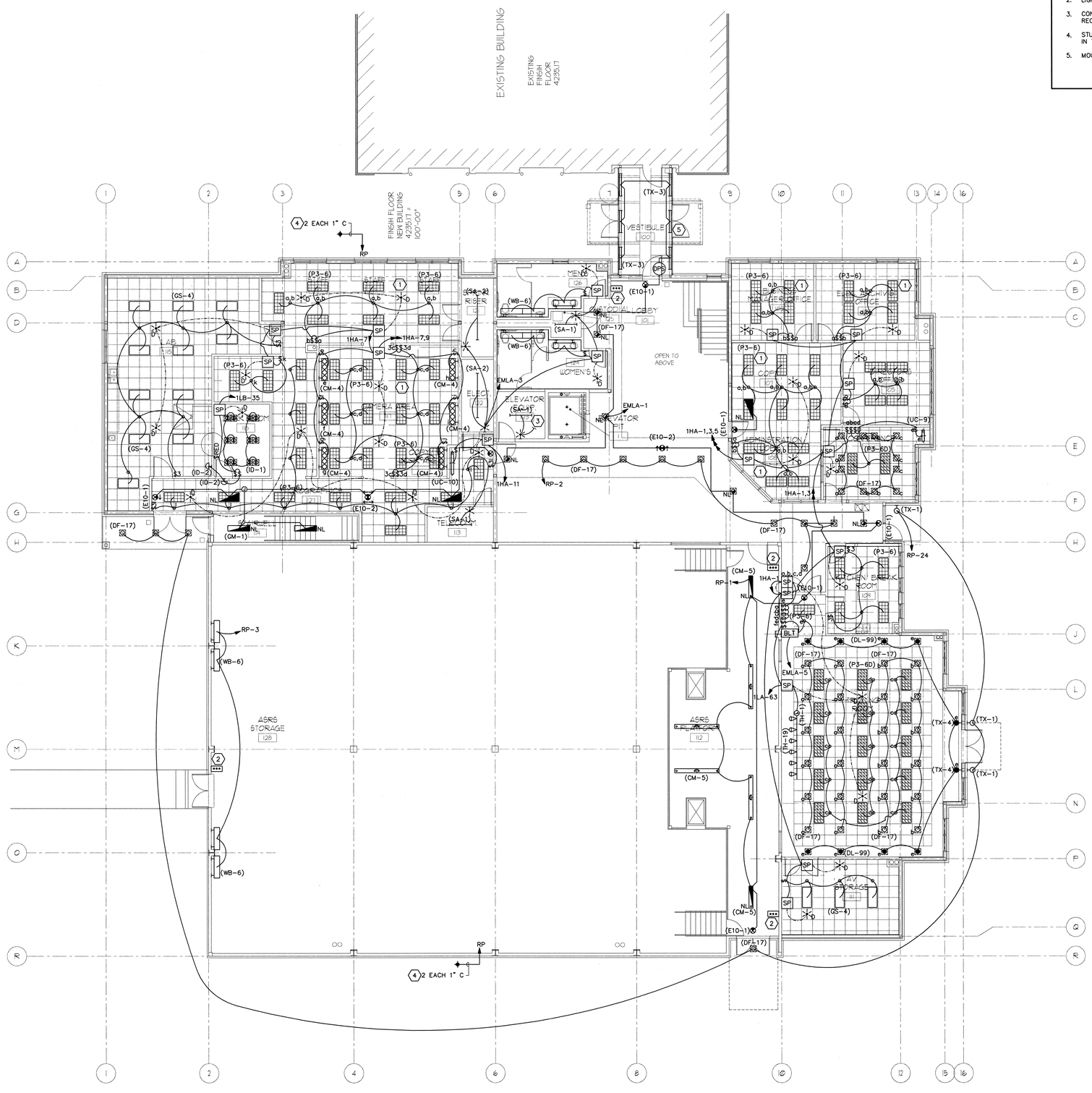
SHEET KEYNOTES

1. FIXTURES IN THIS ROOM SHALL BE DUAL-LEVEL SWITCHED.
2. LIGHTING CONTROL STATION FOR RELAY PANEL "RP".
3. CONNECT TO CIRCUIT SERVING ELEVATOR EQUIPMENT ROOM DUPLEX RECEPTACLE OUTLET, UPSTREAM OF GFCI PROTECTION.
4. STUB CONDUITS TO RELAY PANEL FOR FUTURE LANDSCAPE LIGHTING IN THIS AREA.
5. MOUNT TX-3 FIXTURES ON HEADER ABOVE STOREFRONT SYSTEM.



A1 MAIN FLOOR LIGHTING PLAN
SCALE: 1/8"=1'-0"

PLAN NORTH

COOPER ROBERTS SIMONSEN ARCHITECTURE

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(801) 355-9885 FAX
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EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-9471 FAX (801) 401-9471
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SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
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LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
BMA@MAILSNARE.NET

LICENSED PROFESSIONAL ENGINEER
No. 174857
BRAD D. FORREST
STATE OF UTAH

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
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MAIN FLOOR LIGHTING PLAN

EL101

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ELECTRICAL PANEL "1LA" SCHEDULE

CLIENT: JOB:

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE & TYPE:	LOCATION:	CABINET:	NOTES:
120/208 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	200 AMPERE MAIN CB	ELECTRICAL ROOM	SURFACE	22,000 AIC

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR, INSULATED GROUND BAR, SUBFEED LUGS, HINGED COVER

WIRING:

CKT	OCP		OUTLETS			DESCRIPTION	LCL	PHASE LOAD			LCL	DESCRIPTION	OUTLETS			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR		kVA	A	B	C	kVA		LTG	CO	PWR	AMP	POLE	NO
1	20	1				STAFF OUTLETS	0.6	1.4			0.8	BUS MAN OFFICE OUTL.ETS				20	1	2
3	20	1				STAFF OUTLETS	0.4		1.2		0.8	ELEC ARCH OFFICE OUTLETS				20	1	4
5	20	1				STAFF OUTLETS	0.4			1.2	0.8	DIRECT OFFICE OUTLETS				20	1	6
7	20	1				STAFF OUTLETS	0.4	1.4			1.0	PRINTER				20	1	8
9	20	1				STAFF OUTLETS	0.4		1.4		1.0	PRINTER				20	1	10
11	20	1				STAFF OUTLETS	1.0			2.0	1.0	PRINTER				20	1	12
13	20	1				MICRO COMPUTER	0.2	0.4			0.2	CONF OUTLETS				20	1	14
15	20	1				MICRO TYPEWRITER	0.2		0.4		0.2	CONF FLOORBOX				20	1	16
17	20	1				MICRO FAX	0.2			1.0	0.8	CONF OUTLETS				20	1	18
19	20	1				MICRO PRINTER	1.0	1.8			0.8	ADMINISTRATION OUTLETS				20	1	20
21	20	1				MIRCO COPIER	1.0		1.4		0.4	ADMINISTRATION OUTLETS				20	1	22
23	20	1				MICRO COUNTER OUTLETS	0.4			0.8	0.4	ADMINISTRATION OUTLETS				20	1	24
25	20	1				MICRO COUNTER OUTLETS	0.4	1.4			1.0	ATC XFMRS				20	1	26
27	20	1				MICRO HALL OUTLETS	1.2		1.8		0.6	RESTROOM OUTLETS				20	1	28
29	20	1				MICRO HALL COUNTER	0.2			1.2	1.0	AUTO DOOR OPENERS				20	1	30
31	20	1				MICRO HALL COUNTER	0.2	1.4			1.2	LOBBY OUTLETS				20	1	32
33	20	1				MICRO ENTRY AREA	0.6		1.1		0.5	DRINKING FOUNTAINS				20	1	34
35	20	1				COPY/WORK AREA OUTLETS	0.2			0.8	0.6	LOBBY OUTLETS				20	1	36
37	20	1				COPY/WORK AREA OUTLETS	0.2	0.8			0.6	LOBBY OUTLETS				20	1	38
39	20	1				COPY/WORK AREA OUTLETS	0.2		0.6		0.4	ELEV EQP RM OUTLET/LTG				20	1	40
41	20	1				ATC XFMR	0.5			0.9	0.4	ELEV PIT OUTLET/LTG				20	1	42
43	20	1				ASRS STORAGE OUTLETS	0.2	0.4			0.2	TRAINING FLOORBOX				20	1	44
45	20	1				ASRS STORAGE OUTLETS	0.4		0.6		0.2	TRAINING FLOORBOX				20	1	46
47	20	1				ASRS STORAGE OUTLETS	0.2			0.4	0.2	TRAINING FLOORBOX				20	1	48
49	20	1				ASRS PLATFORM OUTLETS	0.4	0.6			0.2	TRAINING FLOORBOX				20	1	50
51	20	1				ASRS PLATFORM OUTLETS	0.4		0.6		0.2	TRAINING FLOORBOX				20	1	52
53	20	1				ASRS PLATFORM OUTLETS	0.8			1.0	0.2	TRAINING FLOORBOX				20	1	54
55	20	1				ASRS SERVER	0.2	0.4			0.2	TRAINING FLOORBOX				20	1	56
57	20	1				ASRS SERVER	0.2		0.4		0.2	TRAINING FLOORBOX				20	1	58
59	20	1				LAN RACK	1.0			1.8	0.8	TRAINING OUTLETS				20	1	60
61	20	1				TELEPHONE BOARD	1.0	1.8			0.8	TRAINING OUTLETS				20	1	62
63	20	1				TRAINING RM TRACK LTG	1.0		1.8		0.8	TRAINING OUTLETS				20	1	64
65	20	1				SPARE				0.8	0.8	AV STORAGE OUTLETS				20	1	66
67	20	1				SPARE		0.2			0.2	BREAK COUNTER OUTLETS				20	1	68
69	20	1				SPARE			0.2		0.2	BREAK COUNTER OUTLETS				20	1	70
71	20	1				SPARE				1.0	1.0	BREAK DISPOSAL				20	1	72
73	20	1				EXTERIOR OUTLETS	0.6	0.8			0.2	BREAK COUNTER OUTLETS				20	1	74
75	20	1				EXTERIOR OUTLETS	0.6		0.8		0.2	BREAK COUNTER OUTLETS				20	1	76
77	20	1				EXTERIOR OUTLETS	0.6			0.8	0.2	KITCHEN/BREAK OUTLETS				20	1	78
79	–	–				-----	5.0	6.0			1.0	BREAK VENDING				20	1	80
81	100	3				ATS1	5.0		6.0		1.0	BREAK WATER COOLER				20	1	82
83	–	–				-----	5.0			6.0	1.0	BREAK REFRIGERATOR				20	1	84
TOTALS:						kVA PER PHASE		**18.8**	**18.3**	**19.7**						TOTAL kVA		**57**
						AMPS PER PHASE		**157**	**153**	**164**						AVERAGE AMPS PER PHASE		**158**

ELECTRICAL PANEL "2LA" SCHEDULE

CLIENT: JOB:

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE & TYPE:	LOCATION:	CABINET:	NOTES:
120/208 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	125 AMPERE MAIN CB	2ND FLOOR ELEC ROOM	SURFACE	22,000 AIC

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR, INSULATED GROUND BAR, HINGED COVER

WIRING:

CKT	OCP		OUTLETS			DESCRIPTION	LCL	PHASE LOAD			LCL	DESCRIPTION	OUTLETS			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR		kVA	A	B	C	kVA		LTG	CO	PWR	AMP	POLE	NO
1	20	1		2		RECORD PROCESSING OUTLETS	0.8	2.0			1.2	MANAGER OFFICE		4		20	1	2
3	20	1		2		RECORD PROCESSING OUTLETS	0.8		1.4		0.6	RECORDS ANALYSIS OUTLETS		3		20	1	4
5	20	1		3		RECORD PROCESSING OUTLETS	0.8			1.6	0.8	RECORDS ANALYSIS OUTLETS		2		20	1	6
7	20	1		4		MANAGER OFFICE OUTLETS	1.4	2.2			0.8	RECORDS ANALYSIS OUTLETS		2		20	1	8
9	20	1		2		RECORD PROCESSING OUTLETS	0.4		1.2		0.8	RECORDS ANALYSIS OUTLETS		2		20	1	10
11	20	1		3		RECORD PROCESSING OUTLETS	1.0			1.4	0.4	RECORDS ANALYSIS OUTLETS		2		20	1	12
13	20	1		2		WORK AREA OUTLETS	0.4	1.0			0.6	RECORDS ANALYSIS OUTLETS		2		20	1	14
15	20	1		1		WORK AREA OUTLETS	0.2		0.4		0.2	RECORDS ANALYSIS OUTLETS		1		20	1	16
17	20	1		1		WORK AREA OUTLETS	0.2			0.6	0.4	RECORDS ANALYSIS OUTLETS		2		20	1	18
19	20	1			1	TRANSFORMER	1.4	2.4			1.0	RECORDS ANALYSIS OUTLETS		1		20	1	20
21	20	1		2		MEN'S OUTLETS	0.4		1.8		1.4	TRANSFORMER				20	1	22
23	20	1		2		DRINKING FOUNTAINS	0.4			1.2	0.8	MECH/BOILER OUTLETS				20	1	24
25	20	1		2		WOMEN'S OUTLETS	0.4	0.4				SPARE				20	1	26
27	20	1		6		CORRIDOR OUTLETS	1.2		1.2			SPARE				20	1	28
29	20	1		6		ELECTRICAL RM OUTLETS	1.2			1.2		SPARE				20	1	30
31	20	1		3		CORRIDOR OUTLETS	0.6	0.6				SPARE				20	1	32
33	20	1				SPARE			0.0			SPARE				20	1	34
35	20	1				SPARE				0.0		SPARE				20	1	36
37	20	1				SPARE		0.4			0.4	RACK OUTLETS		1		20	1	38
39	20	1				SPARE			0.4		0.4	TTB2A OUTLETS		1		20	1	40
41	20	1				SPARE				0.5	0.5	FIRE CONTROL PANEL			1	20	1	42
TOTALS:						kVA PER PHASE		**9.0**	**6.4**	**6.5**						TOTAL kVA		**21.9**
						AMPS PER PHASE		**75**	**53**	**54**						AVERAGE AMPS PER PHASE		**61**

ELECTRICAL PANEL "1LB" SCHEDULE

CLIENT: JOB:

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE & TYPE:	LOCATION:	CABINET:	NOTES:
120/208 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	100 AMPERE MAIN CB	MICROGRAPHICS	FLUSH	22,000 AIC

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR, INSULATED GROUND BAR, HINGED COVER

WIRING:

CKT	OCP		OUTLETS			DESCRIPTION	LCL	PHASE LOAD			LCL	DESCRIPTION	OUTLETS			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR		kVA	A	B	C	kVA		LTG	CO	PWR	AMP	POLE	NO
1	20	1				CAMERA – TYPE A2	1.5	1.9			0.4	LAB OUTLETS				20	1	2
3	20	1				CAMERA – TYPE A2	1.5		2.1		0.6	LAB OUTLETS				20	1	4
5	20	1				CAMERA – TYPE A2	1.5			2.1	0.6	LAB OUTLETS				20	1	6
7	20	1				CAMERA AREA OUTLETS	1.0	1.2			0.2	LAB OUTLETS				20	1	8
9	20	1				CAMERA AREA OUTLETS	1.0		1.2		0.2	LAB OUTLETS				20	1	10
11	20	2				CAMERA – TYPE A1	0.3			1.1	0.8	LAB OUTLETS				20	1	12
13	–	–				-----	0.3	0.3				SPARE				20	1	14
15	20	2				CAMERA – TYPE A1	0.3		0.3			SPARE				20	1	16
17	–	–				-----	0.3			0.3		SPARE				20	1	18
19	70	2				PROCESSOR UPS – TYPE C	3.6	3.6				SPARE				20	1	20
21	–	–				-----	3.6		3.6			SPARE				20	1	22
23	30	1				DUPLICATOR – TYPE B	2.1			2.1		SPARE				20	1	24
25	20	1				CHEMICAL MIXER – TYPE D	0.3	0.3				SPARE				20	1	26
27	20	1				REACH-IN-REFR – TYPE E	1.5		1.5			SPARE				20	1	28
29	20	1				SPARE				0.0		SPARE				20	1	30
31	20	1				SPARE		0.0				SPARE				20	1	32
33	20	1				SPARE			0.0			SPARE				20	1	34
35	20	1				DARK ROOM LIGHTS	0.8			0.8		SPARE				20	1	36
37	20	1				DARK ROOM OUTLETS	0.2	0.2				SPARE				20	1	38
39	20	1				DARK ROOM OUTLETS	0.4		0.4			SPARE				20	1	40
41	20	1				DARK ROOM OUTLETS	0.4			0.4		SPARE				20	1	42
TOTALS:						kVA PER PHASE		**7.5**	**9.1**	**6.8**						TOTAL kVA		**23**
						AMPS PER PHASE		**63**	**76**	**56**						AVERAGE AMPS PER PHASE		**65**

ELECTRICAL PANEL "2MA" SCHEDULE

CLIENT: COOPER ROBERTS JOB: STATE ARCHIVES BUILDING

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE & TYPE:	LOCATION:	CABINET:	NOTES:
120/208 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	125 AMPERE MAIN CB	2ND FLOOR ELEC ROOM	SURFACE	22,000 AIC

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR, HINGED COVER

WIRING:

CKT	OCP		OUTLETS			DESCRIPTION	LCL	PHASE LOAD			LCL	DESCRIPTION	OUTLETS			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR		kVA	A	B	C	kVA		LTG	CO	PWR	AMP	POLE	NO
1	20	1				CRAC-1,2in	0.3	1.0			0.7	DF-1 THRU 4				20	1	2
3	20	2				UV-1in	0.5		0.8		0.3	CRAC-2in				20	1	4
5	---	---				----------	0.4			0.8	0.4	DF-5 THRU 6				20	1	6
7	20	1				AIR HAND UNIT-2 CNTL CKT.	0.5	1.2			0.7	B-2				**20***	**1**	8
9	20	1				AIR HAND UNIT-2 LTG CKT.	0.5		1.2		0.7	B-1				**20***	**1**	10
11	20	1				AIR HAND UNIT-1 CNTL CKT.	0.5			1.0	0.5	GLYCOL FILL STATION				**20***	**1**	12
13	20	1				AIR HAND UNIT-1 LTG CKT.	0.5	1.2			0.7	EF-4				20	1	14
15	20	1				CP-3	0.2		0.9		0.7	EF-3				20	1	16
17	20	2				CRAC-1out	1.7			2.4	0.7	EF-2				20	1	18
19	---	---				----------	1.7	4.0			2.3	CRAC-3out				30	2	20
21	20	2				CRAC-2out	1.7		4.0		2.3	----------				---	---	22
23	---	---				----------	1.7			2.4	0.7	EF-1				20	1	24
25	20	1				LOBBY FANS (RP-8)	1.5	2.1			0.6	ROOF OUTLETS				20	1	26
27	20	1				F-1	1.2		3.6		2.4	UV-1out				40	2	28
29	20	1				SPARE				2.4	2.4	----------				---	---	30
31	20	1				SPARE		0.0				SPARE				20	1	32
33	20	1				SPARE			0.0			SPARE				20	1	34
35	**20	2				DE-ICING PANEL DIP-1A	1.0			1.0		SPARE				20	1	36
37	–	–				(30mA GFCI)	1.0	1.0				SPACE				20	1	38
39	**20	2				DE-ICING PANEL DIP-1B	1.0		1.0			SPACE				20	1	40
41	–	–				(30mA GFCI)	1.0			1.5	0.5	ATC PANEL				20	1	42
TOTALS:						kVA PER PHASE		**10.5**	**11.5**	**11.5**						TOTAL kVA		**33.5**
						AMPS PER PHASE		**88**	**96**	**96**						AVERAGE AMPS PER PHASE		**93**

NOTES:
* SHUNT TRIP CIRCUIT BREAKER (ACTIVATED BY EPO BUTTON OUTSIDE BOILER ROOM)
** PROVIDE 30mA GFCI CIRCUIT BREAKER FOR SNOW MELT CONTROLLER

ELECTRICAL PANEL "1HA" SCHEDULE

CLIENT: JOB:

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE & TYPE:	LOCATION:	CABINET:	NOTES:
277/480 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	100 AMPERE MAIN LUG	MAIN FLOOR ELEC ROOM	SURFACE	35,000 AIC

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR, HINGED COVER

WIRING:

CKT	OCP		OUTLETS			DESCRIPTION	LCL	PHASE LOAD			LCL	DESCRIPTION	OUTLETS			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR		kVA	A	B	C	kVA		LTG	CO	PWR	AMP	POLE	NO
1	20	1	39			TRAINING LTG	2.4	2.4				SPARE				20	1	2
3	20	1	18			KITCHEN LTG	2.4		2.4			SPARE				20	1	4
5	20	1	36			ADMIN OFFICE LTG	2.8			2.8		SPARE				20	1	6
7	20	1	19			STAFF LTG	1.9	1.9				SPARE				20	1	8
9	20	1	18			CAMERA AREA LTG	1.5		1.5			SPARE				20	1	10
11	20	1	15			MICROGRAPHICS LTG	1.3			1.3		SPARE				20	1	12
13	20	1				SPARE		0.0				SPARE				20	1	14
15	20	1				SPARE			0.0			SPARE				20	1	16
17	20	1				SPARE				0.0		SPARE				20	1	18
19	20	1				SPARE		0.0				SPARE				20	1	20
21	20	1				SPARE			0.0			SPARE				20	1	22
23	20	1				SPARE				0.0		SPARE				20	1	24
25	20	1				SPARE		0.0				SPARE				20	1	26
27	20	1				SPARE			0.0			SPARE				20	1	28
29	20	1				SPARE				0.0		SPARE				20	1	30
31	20	1				SPARE		0.0				SPARE				20	1	32
33	20	1				SPARE			0.0			SPARE				20	1	34
35	20	1				SPARE				0.0		SPARE				20	1	36
37	20	1				SPARE		0.0				SPARE				20	1	38
39	20	1				SPARE			0.0			SPARE				20	1	40
41	20	1				SPARE				0.0		SPARE				20	1	42
TOTALS:						kVA PER PHASE		**4.3**	**3.9**	**4.1**						TOTAL kVA		**12.3**
						AMPS PER PHASE		**16**	**14**	**15**						AVERAGE AMPS PER PHASE		**15**

ELECTRICAL PANEL "2HA" SCHEDULE

CLIENT: JOB:

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE & TYPE:	LOCATION:	CABINET:	NOTES:
277/480 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	100 AMPERE MAIN LUGS	2ND FLOOR ELEC ROOM	SURFACE	22,000 AIC

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR, HINGED COVER

WIRING:

CKT	OCP		OUTLETS			DESCRIPTION	LCL	PHASE LOAD			LCL	DESCRIPTION	OUTLETS			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR		kVA	A	B	C	kVA		LTG	CO	PWR	AMP	POLE	NO
1	20	1				RECORDS ANALYSIS LTG	2.7	3.5			0.8	----------				---	---	2
3	20	1				RECORDS PROCESSING LTG	3.0		3.9		0.9	RF-2				20	3	4
5	20	1				MAIN LVL ASRS (RP-1,3)	1.0			1.8	0.8	----------				---	---	6
7	20	1				ASRS LTG (RP-5)	2.3	3.1			0.8	----------				---	---	8
9	20	1				ASRS LTG (RP-7)	2.3		3.2		0.9	RF-1				20	3	10
11	20	1				ASRS MEZZ (RP-9)	1.0			1.8	0.8	----------				---	---	12
13	20	1				LOBBY DOWNLTGS (RP-2,4,6)	1.5	2.3			0.8	----------				---	---	14
15	20	1				ARTWORK FLOODLTGS (RP-12)			0.9		0.9	P-1				**20***	3	16
17	20	1				CLEAR STORY UPLTGS (RP-14)	1.6			2.4	0.8	----------				---	---	18
19	20	1				STAIRWELL UPLTGS (RP-10)	1.2	2.0			0.8	----------				---	---	20
21	20	1				SPARE			0.9		0.9	P-2				**20***	3	22
23	20	1				SPARE				0.8	0.8	----------				---	---	24
25	20	1				SPARE		1.0			1.0	----------				---	---	26
27	20	1				SPARE			1.0		1.0	WH-1				**20***	3	28
29	20	1				SPARE				1.0	1.0	----------				---	---	30
31	20	1				SPARE		0.0				SPARE				20	1	32
33	20	1				SPARE			0.0			SPARE				20	1	34
35	20	1				SPARE				0.0		SPARE				20	1	36
37	20	1				SPARE		0.0				SPARE				20	1	38
39	20	1				SPARE			0.0			SPARE				20	1	40
41	20	1				SPARE				0.0		SPARE				20	1	42
TOTALS:						kVA PER PHASE		**11.9**	**9.9**	**7.8**						TOTAL kVA		**29.6**
						AMPS PER PHASE		**43**	**36**	**28**						AVERAGE AMPS PER PHASE		**36**

NOTES:
* SHUNT TRIP CIRCUIT BREAKER (ACTIVATED BY EPO BUTTON OUTSIDE BOILER ROOM)

ELECTRICAL PANEL "EMLA" SCHEDULE

CLIENT: JOB:

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE & TYPE:	LOCATION:	CABINET:	NOTES:
120/208 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	100 AMPERE MAIN LUGS	ELECTRICAL ROOM	SURFACE	22,000 AIC

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR, HINGED COVER

WIRING:

CKT	OCP		OUTLETS			DESCRIPTION	LCL	PHASE LOAD			LCL	DESCRIPTION	OUTLETS			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR		kVA	A	B	C	kVA		LTG	CO	PWR	AMP	POLE	NO
1	20	1				MAIN LVL EGRESS LTG	1.1	1.6			0.5	GEN CONTROL PWR				20	1	2
3	20	1				TRAINING RM EM LTG	1.0		1.5		0.5	GEN BATTERY CHARGER				20	1	4
5	20	1				MAIN LVL RESTROOM EM LTG	0.7			1.2	0.5	GEN AUX CIRCUIT				20	1	6
7	20	1				SECOND FLOOR EGRESS LTG	1.1	2.1			1.0	-----				–	–	8
9	20	1				2ND FL RESTROOM EM LTG	0.8		1.8		1.0	GEN STRIP HTR				20	3	10
11	20	1				SPARE				1.0	1.0	-----				–	–	12
13	20	1				SPARE		0.5			0.5	ELEVATOR CAB LTG				20	1	14
15	20	1				SPARE			0.0			SPARE				20	1	16
17	20	1				SPARE				0.0		SPARE				20	1	18
19	20	1				SPARE		0.0				SPARE				20	1	20
21	20	1				SPARE			0.0			SPARE				20	1	22
23	20	1				SPARE				0.0		SPARE				20	1	24
25	20	1				SPARE		0.0				SPARE				20	1	26
27	20	1				SPARE			0.0			SPARE				20	1	28
29	20	1				SPARE				0.0		SPARE				20	1	30
31	20	1				SPARE		0.0				SPARE				20	1	32
33	20	1				SPARE			0.0			SPARE				20	1	34
35	20	1				SPARE				0.0		SPARE				20	1	36
37	20	1				FIRE CURTAIN	0.5	0.5				SPARE				20	1	38
39	20	1				ACCESS CONTROL PANEL	0.5		4.5		4.0	UPSA				60	2	40
41	20	1				FIRE ALARM PANEL	0.5			4.5	4.0	-----				–	–	42
TOTALS:						kVA PER PHASE		**4.7**	**7.8**	**6.7**						TOTAL kVA		**19**
						AMPS PER PHASE		**39**	**65**	**56**						AVERAGE AMPS PER PHASE		**53**

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4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

BID PACKAGE #2

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PANEL SCHEDULES

EP604

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MECHANICAL EQUIPMENT SCHEDULE

MARK	QTY	ITEM DESCRIPTION	LOAD DATA							WIRE AND CONDUIT SIZE	OVERCURRENT PROTECTION			DISCONNECT			STARTER DATA													NOTES	MARK
			HP	kW	MCA	FLA	VOLT	PH	Hz		FURN BY	DEVICE	LOCATION	FURN BY	DEVICE	LOCATION	FURN BY	DEVICE	LOCATION	SIZE	SPEED	CTRL VOLT	SELECTOR SWITCH	PUSH BUTTON	PILOT LAMP	NORMALLY OPEN CONTACTS	NORMALLY CLOSED CONTACTS	PHASE FAILURE RELAY	SCHEMATIC REFERENCE	REMOTE CTRL		
ACCU-1		AIR COOLED CONDENSING UNIT			109		480	3	60	3 #1, #6 GR 1.5"C	E	125A/3P CB	MDP	Q			Q													1	ACCU-1
ACCU-2		AIR COOLED CONDENSING UNIT			46		480			3 #6, #10 GR 1.25"C	E	60A/3P CB	MDP	Q			Q													1	ACCU-2
B-1		BOILER	1/4			5.8	120	1	60	2 #12, #12 GR 0.75"C	E	20A/1P CB	PANEL "2MA"	E	THERMAL SWITCH	ADJ. TO EQUIP.	Q														B-1
B-2		BOILER	1/4			5.8	120	1	60	2 #12, #12 GR 0.75"C	E	20A/1P CB	PANEL "2MA"	E	THERMAL SWITCH	ADJ. TO EQUIP.	Q														B-2
CP-3		RECIRC. PUMP	1/25			1	120	1	60	2 #12, #12 GR 0.75"C	E	20A/1P CB	PANEL "2MA"	E	THERMAL SWITCH	ADJ. TO EQUIP.	E	FVNR	ADJ. TO EQUIP.	0			HOA	R	G	2	2					CP-3
CRAC-1out		COMP ROOM AIR CONDITIONER (OUTDOOR)			16		208	1	60	3 #12, #12 GR 0.75"C	E	20A/2P CB	PANEL "2MA"	E	30A/2P FRN-20	ADJ. TO EQUIP.	Q													2	CRAC-1out
CRAC-1in		COMP ROOM AIR CONDITIONER (INDOOR)			1		120	1	60	2 #12, #12 GR 0.75"C	E	20A/1P CB	PANEL "2MA"	E	THERMAL SWITCH	ADJ. TO EQUIP.	Q													2	CRAC-1in
CRAC-2out		COMP ROOM AIR CONDITIONER (OUTDOOR)			16		208	1	60	3 #12, #12 GR 0.75"C	E	20A/2P CB	PANEL "2MA"	E	30A/2P FRN-20	ADJ. TO EQUIP.	Q													2	CRAC-2out
CRAC-2in		COMP ROOM AIR CONDITIONER (INDOOR)			1		120	1	60	2 #12, #12 GR 0.75"C	E	20A/1P CB	PANEL "2MA"	E	THERMAL SWITCH	ADJ. TO EQUIP.	Q													2	CRAC-2in
CRAC-3out		COMP ROOM AIR CONDITIONER (OUTDOOR)			22		208	1	60	3 #10, #10 GR 0.75"C	E	30A/2P CB	PANEL "2MA"	E	30A/2P FRN-30	ADJ. TO EQUIP.	Q													2	CRAC-3out
CRAC-3in		COMP ROOM AIR CONDITIONER (INDOOR)			2		120	1	60	2 #12, #12 GR 0.75"C	E	20A/1P CB	PANEL "2MA"	E	THERMAL SWITCH	ADJ. TO EQUIP.	Q													2	CRAC-3in
CUH-1		CABINET UNIT HEATER	1/30			1	120	1	60	2 #12, #12 GR 0.75"C	E	20A/1P CB	PANEL "2MA"	E	THERMAL SWITCH	ADJ. TO EQUIP.	Q														CUH-1
CUH-2		CABINET UNIT HEATER	1/30			1	120	1	60	2 #12, #12 GR 0.75"C	E	20A/1P CB	PANEL "2MA"	E	THERMAL SWITCH	ADJ. TO EQUIP.	Q														CUH-2
DF-1 THRU 4		DESTRATIFICATION FAN		.16		1.5	120	1	60	2 #12, #12 GR 0.75"C	E	20A/1P CB	PANEL "2MA"	E	THERMAL SWITCH	ADJ. TO EQUIP.	Q														DF-1 THRU 4
EF-1 THRU 4		EXHAUST FAN	1/4			5.8	120	1	60	2 #12, #12 GR 0.75"C	E	20A/1P CB	PANEL "2MA"	E	THERMAL SWITCH	ADJ. TO EQUIP.	E	FVNR	ADJ. TO EQUIP.	0			HOA	R	G	2	2					EF-1 THRU 4
F-1		MINIMUM AIR FAN	1/2			9.8	120	1	60	2 #12, #12 GR 0.75"C	E	20A/1P CB	PANEL "2MA"	E	30A/1P FRN-15	ADJ. TO EQUIP.	Q	VSD	SEE PLANS												3	F-1
P-1		PUMP	1.5			2.6	480	3	60	3 #12, #12 GR 0.75"C	E	20A/3P CB	PANEL "2HA"	E	30A/3P FRS-4	ADJ. TO EQUIP.	E	FVNR	ADJ. TO EQUIP.	0			HOA	R	G	2	2					P-1
P-2		PUMP	1.5			2.6	480	3	60	3 #12, #12 GR 0.75"C	E	20A/3P CB	PANEL "2HA"	E	30A/3P FRS-4	ADJ. TO EQUIP.	E	FVNR	ADJ. TO EQUIP.	0			HOA	R	G	2	2					P-2
RF-1		RELIEF FAN	1.5			2.6	480	3	60	3 #12, #12 GR 0.75"C	E	20A/3P CB	PANEL "2HA"	E	30A/3P NF	ADJ. TO EQUIP.	E	VFC	SEE PLANS													RF-1
RF-2		RELIEF FAN	1.5			2.6	480	3	60	3 #12, #12 GR 0.75"C	E	20A/3P CB	PANEL "2HA"	E	VFC	ADJ. TO EQUIP.	E	VFC	SEE PLANS													RF-2
SF-1		SUPPLY FAN	20			27	480	3	60	3 #6, #10 GR 1.25"C	E	60A/3P CB	MDP	E	60A/3P NF	ADJ. TO EQUIP.	E	VFC	SEE PLANS													SF-1
SF-2		SUPPLY FAN	7.5			11	480	3	60	3 #12, #12 GR 0.75"C	E	30A/3P CB	MDP	E	30A/3P FRS-15	ADJ. TO EQUIP.	E	FVNR	SEE PLANS	1	1	*	HOA	R	G	2	2					SF-2
UV-1out		UNIT VENTILATOR (OUTDOOR UNIT)			23.1		208	1	60	3 #8, #10 GR 1"C	E	40A/2P CB	PANEL "2MA"	E	30A/2P FRN-30	ADJ. TO EQUIP.	Q													2	UV-1out
UV-1in		UNIT VENTILATOR (INDOOR UNIT)				4.3	208	1	60	3 #12, #12 GR 0.75"C	E	20A/2P CB	PANEL "2MA"	E	30A/2P FRN-6	ADJ. TO EQUIP.	Q													2	UV-1in
WH-1		WATER HEATER		3			480	3	60	3 #12, #12 GR 0.75"C	E	20A/3P CB	PANEL "2HA"	E	30A/3P FRS-5	ADJ. TO EQUIP.	Q														WH-1

NOTES:
1. UNIT COMES WITH FACTORY MOUNTED DISCONNECT FOR INTERCONNECTING CONTROL WIRING.
2. PROVIDE 8 #14 CU IN 0.75"C BETWEEN INDOOR AND OUTDOOR UNITS.
3. ADJUSTABLE SPEED CONTROLLER FOR F-1 ONLY IS FURNISHED WITH THE EQUIPMENT.

LABORATORY EQUIPMENT SCHEDULE

MARK	QTY	ITEM DESCRIPTION	LOAD DATA							WIRE AND CONDUIT SIZE	OVERCURRENT PROTECTION			DISCONNECT				MANUFACTURER	CATALOG #	NOTES	MARK
			HP	kW	MCA	FLA	VOLT	PH	Hz		FURN BY	DEVICE	LOCATION	FURN BY	DEVICE	LOCATION	FURN BY				
A1	2	MICROFILM CAMERA #1		600			230	1	60	CC#2	E	20A/2P CB	PANEL	E	CORD & PLUG	ADJ. TO EQUIP.	Q	ZEUTSCHEL	OMNIA OK300	1	A1
A2	3	MICROFILM CAMERA #2		1500			120	1	60	CC#1	E	20A/1P CB	PANEL	E	CORD & PLUG	ADJ. TO EQUIP.	Q	N/A	N/A	3	A2
B	1	MICROFILM DUPLICATOR				17	115	1	60	CC#1	E	30A/1P CB	PANEL	E	CORD & PLUG	ADJ. TO EQUIP.	Q	HOUSTON FEARLESS 76	EXTEK 5402	3	B
C	1	MICROFILM PROCESSOR				30	208	1	60	CC#11	E	60A/2P CB	PANEL	E	CORD & PLUG	ADJ. TO EQUIP.	Q	HOUSTON FEARLESS 76	LABMASTER 2000	2	C
D	1	CHEMICAL MIXER				3	120	1	60	CC#1	E	20A/1P CB	PANEL	E	CORD & PLUG	ADJ. TO EQUIP.	Q	HOUSTON FEARLESS 76	143647	3	D
E	1	REACH-IN-REFRIGERATOR				11.8	120	1	60	CC#1	E	20A/1P CB	PANEL	E	CORD & PLUG	ADJ. TO EQUIP.	Q	TRUE	T-72	3	E

NOTES:
1. PROVIDE POINT-OF-USE UPS SYSTEM FOR CAMERA UNIT. UPS SHALL BE 208/120V INPUT-230V/120V OUTPUT. PROVIDE IEC RECEPTACLE TO MATCH PLUG TO EQUIPMENT PLUG.
2. CONNECT PROCESSOR TO UPSA VIA DROP CORD AND PLUG. PROVIDE RECEPTACLE TO MATCH EQUIPMENT PLUG.
3. PROVIDE RECEPTACLE TO MATCH EQUIPMENT PLUG.

EQUIPMENT SCHEDULE KEY

E	DIVISION 16
Q	FURNISHED WITH THE EQUIPMENT
*	COORDINATE WITH THE DIVISION 15 TEMPERATURE CONTROL INSTALLER
**	AUTOMATIC CONTROL WIRING BY DIVISION 15

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8471 FAX (801) 401-9471
WWW.SPECTRUM-ENGINEERS.COM

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
WWW.STANTEC.COM

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
BMA@MAILSNARE.NET

LICENSED PROFESSIONAL ENGINEER
No. 374542
BRAD D. FORREST
STATE OF UTAH

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
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MECHANICAL/ LABORATORY EQUIP SCHEDULES

EP603

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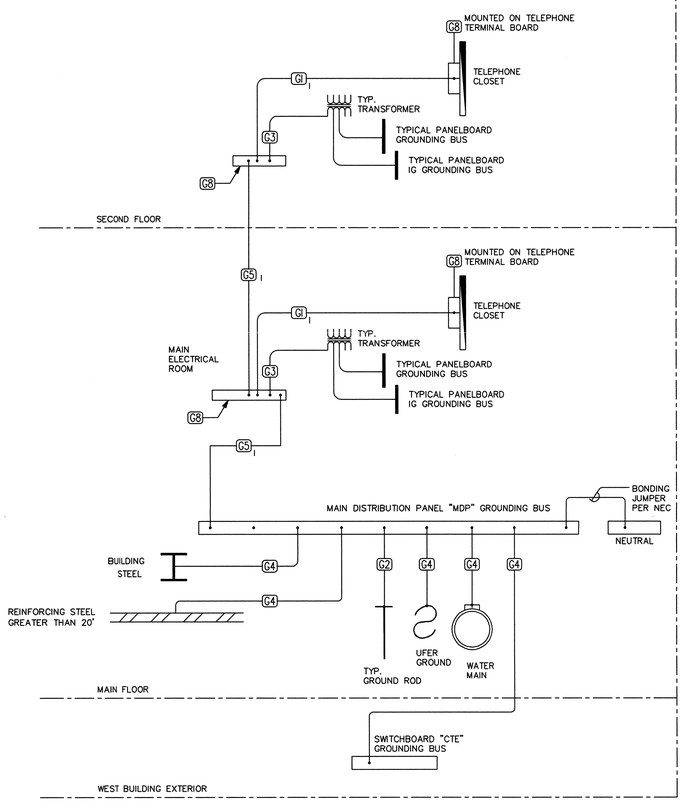
GROUNDING SCHEDULE

"I" SUBSCRIPT INDICATES INSULATED.

SYM	SIZE
G1	#6 CU
G2	#4 CU
G3	#1/0 CU
G4	#3/0 CU
G5	#250 KCMIL CU
G6	#350 KCMIL CU
G7	#500 KCMIL CU
G8	COPPER BUS WITH PRE-DRILLED HOLES MOUNTED ON INSULATORS IN ELECTRICAL CLOSET
G9	GROUNDING CONDUCTOR PER POWER ONE-LINE DIAGRAM

GENERAL NOTE:

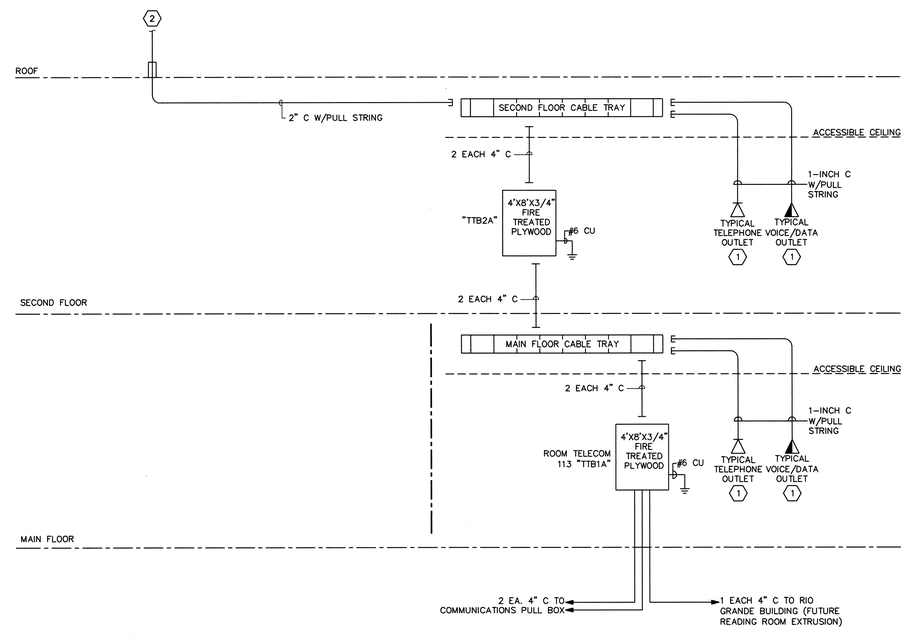
REFER TO ONE-LINES, PLANS, AND SPECIFICATIONS FOR ADDITIONAL GROUNDING REQUIREMENTS.



A1 GROUNDING RISER DIAGRAM
NO SCALE

SHEET KEYNOTES

1. PROVIDE 4-11/16 INCH SQUARE, DEEP OUTLET BOX WITH SINGLE GANG MUD RING AND BLANK COVER PLATE AT ALL OUTLET LOCATIONS.
2. FLASH WEATHERPROOF AND CAP CONDUIT PENETRATION FOR FUTURE ANTENNA.



GENERAL NOTE:

ALL PENETRATIONS SHALL BE FIRE STOPPED AFTER INSTALLATION OF CABLING.

A3 TELEPHONE CONDUIT RISER DIAGRAM
NO SCALE

COOPER ROBERTS SIMONSEN ARCHITECTURE

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
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EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8471 FAX (801) 401-9471
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STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
WWW.STANTEC.COM

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
BMA@MAILSNARE.NET

LICENSED PROFESSIONAL ENGINEER
No. 374657
GRAD D. FORREST
STATE OF UTAH

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
SALT LAKE CITY UTAH

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GROUNDING/TELEPHONE CONDUIT RISER DIAGRAMS

EP602

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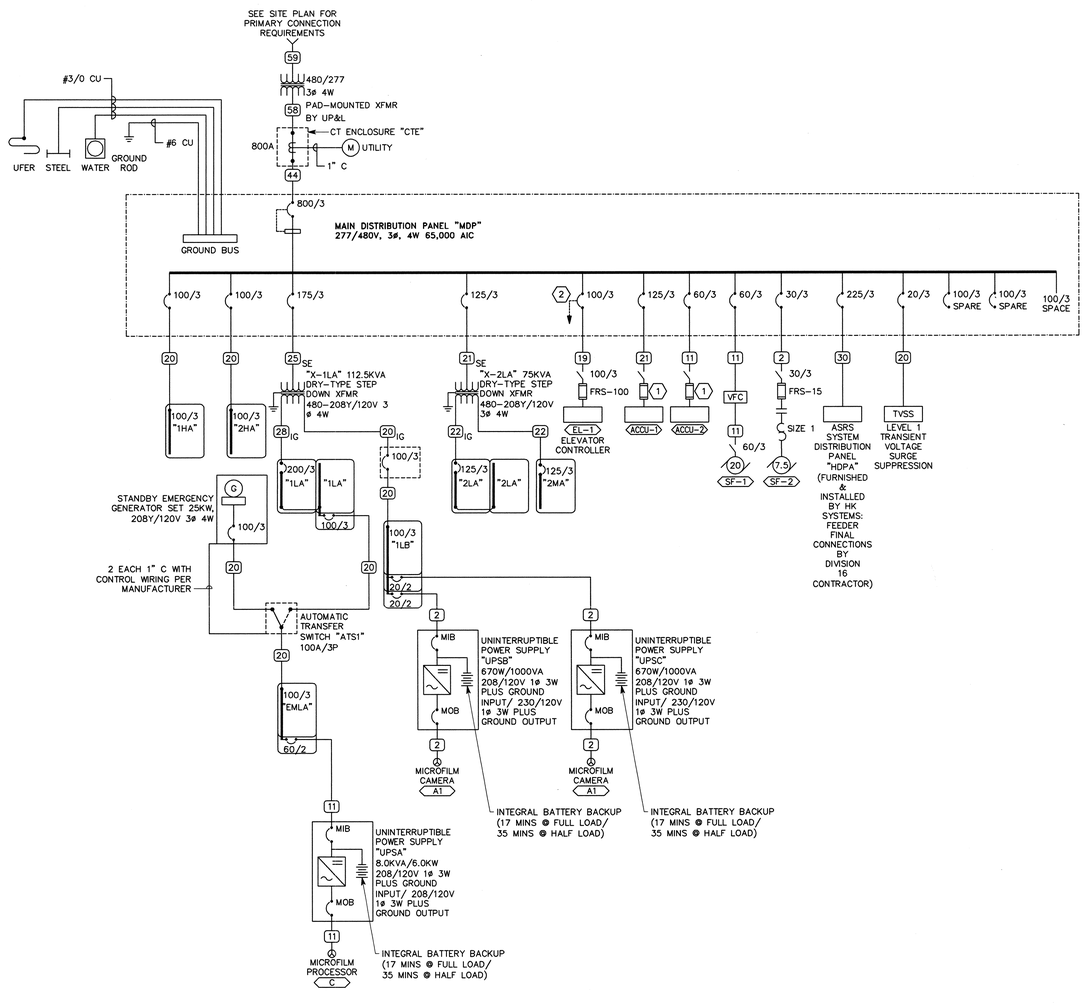

A1 ONE-LINE DIAGRAM
NO SCALE

CONDUCTOR AND CONDUIT SCHEDULE

SCHEDULE NUMBER
SUBSCRIPT (NOTE 5)
(E.G.) 5 IG

SYM	AMP	CONDUIT SIZE	CONDUCTOR(NOTE 1) QTY	SIZE	GR	IG	SE	NOTES
1	20	.75	2	12	12	12	8	2
2	20	.75	3	12	12	12	8	2,3
3	20	.75	4	12	12	12	8	2,3
4	30	.75	2	10	10	10	8	2
5	30	.75	3	10	10	10	8	2
6	30	.75	4	10	10	10	8	2
7	40	1	2	8	10	8	6	2
8	40	1	3	8	10	8	6	2
9	40	1	4	8	10	8	6	2
10	55	1	2	6	10	8	4	2
11	55	1	3	6	10	8	4	2
12	55	1.25	4	6	10	8	4	2
13	70	1	2	4	8	4	2	2
14	70	1.25	3	4	8	4	2	2
15	70	1.25	4	4	8	4	2	2
16	85	1.25	2	3	8	3	2	2
17	85	1.25	3	3	8	3	2	2
18	85	1.25	4	3	8	3	2	2
19	95	1.25	3	2	8	2	2	2
20	95	1.50	4	2	8	2	2	2
21	130	1.50	3	1	6	2	2	2
22	130	1.50	4	1	6	2	2	2
23	150	2	3	1/0	6	2	1/0	2
24	150	2	4	1/0	6	2	1/0	2
25	175	2	3	2/0	6	2	2/0	2
26	175	2	4	2/0	6	2	2/0	2
27	200	2	3	3/0	6	2	2/0	2
28	200	2.50	4	3/0	6	2	2/0	2
29	230	2.50	3	4/0	4	2	2/0	2
30	230	2.50	4	4/0	4	2	2/0	2
31	255	2.50	3	250	4	1	2/0	2
32	255	2.50	4	250	4	1	2/0	2
33	310	3	3	350	3	1/0	3/0	2
34	310	3	4	350	3	1/0	3/0	2
35	380	3.50	3	500	3	3/0	3/0	2
36	380	4	4	500	3	3/0	3/0	2
37	400	2 EA 2	3	3/0	3	3/0	3/0	2
38	400	2 EA 2.50	4	3/0	3	3/0	3/0	2
39	510	2 EA 2.50	3	250	1	4/0	3/0	2
40	510	2 EA 2.50	4	250	1	4/0	3/0	2
41	620	2 EA 3	3	350	1/0	4/0	3/0	2,4
42	620	2 EA 3	4	350	1/0	4/0	3/0	2,4
43	760	2 EA 3.50	3	500	1/0	4/0	3/0	2,4
44	760	2 EA 4	4	500	1/0	4/0	3/0	2,4
45	855	3 EA 3	3	300	2/0	4/0	3/0	2,4
46	855	3 EA 3	4	300	2/0	4/0	3/0	2,4
47	1000	3 EA 3.50	3	400	2/0	4/0	3/0	4
48	1000	3 EA 3.50	4	400	2/0	4/0	3/0	4
49	1140	3 EA 4	3	500	3/0	4/0	3/0	4
50	1140	3 EA 4	4	500	3/0	4/0	3/0	4
51	1240	4 EA 3	3	350	3/0	4/0	3/0	4
52	1240	4 EA 3	4	350	3/0	4/0	3/0	4
53	1675	5 EA 3.50	4	400	4/0	4/0	4/0	4
54	2010	6 EA 3.50	4	400	250	250	250	4
55	2660	7 EA 4	4	500	350	350	350	4
56	3040	8 EA 4	4	500	500	500	500	4
57	4180	11 EA 4	4	500	500	500	500	4
58		3 EA 4						6
59		5						6
60		10 EA 4						6

CONDUCTOR AND CONDUIT SCHEDULE NOTES

1. CONDUCTORS SHOWN ARE SHOWN FOR EACH CONDUIT WITH MODIFICATIONS AS NOTED IN NOTE 5. ALL CONDUCTORS SHOWN ARE THWN UNLESS OTHERWISE NOTED.
2. PROVIDE EQUIPMENT GROUND CONDUCTORS PER TABLE 250-122 WHEN CIRCUIT BREAKERS ARE SIZED GREATER THAN AMPERE RATING SHOWN IN TABLE.
3. PROVIDE #10 NEUTRALS FOR MULTIWIRE BRANCH CIRCUITS SERVING COMPUTERS.
4. GROUND (GR) CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE CONDUCTORS.
5. WHEN SYMBOL SUBSCRIPT INDICATES "IG", INCLUDE "IG" OR INSULATED GROUND CONDUCTOR SCHEDULED ALONG WITH GR OR EQUIPMENT GROUND CONDUCTOR. WHEN SYMBOL SUBSCRIPT INDICATES "SE", SUBSTITUTE "SE" CONDUCTOR FOR "GR" CONDUCTOR SHOWN WHICH IS SIZED FOR THE GROUNDING OF THE SECONDARY OF THE SEPARATELY DERIVED SYSTEMS.
6. RACEWAY ONLY. CONDUCTORS PROVIDED BY UTILITY.

FAULT CURRENT TABLE

BUS	FAULT CURRENT
CTE	40,652 SCA
MDP	34,097 SCA
1HA	30,309 SCA
2HA	20,983 SCA
1LA	21,606 SCA
1LB	21,606 SCA
2LA	10,797 SCA
2MA	10,797 SCA

PROVIDE FULLY RATED CIRCUIT BREAKERS IN PANELBOARDS FOR THE FAULT CURRENT SHOWN. SERIES RATINGS WITH NEXT LEVEL UPSTREAM OVERCURRENT PROTECTIVE DEVICES ARE PERMITTED SUBJECT TO FACTORY UL DOCUMENTATION OF SERIES RATING SUBMITTED TO ENGINEER. IF DEVICE OR EQUIPMENT FAULT CURRENT RATING IS NOT SHOWN, ASSUME 100,000 AIC.

SHEET KEYNOTES

1. FUSED DISCONNECT COMES WITH EQUIPMENT.
2. INTERLOCK WITH FIRE ALARM SYSTEM TO SHUT DOWN UPON ACTIVATION OF ELEVATOR EQUIPMENT ROOM HEAT DETECTORS.

COOPER ROBERTS SIMONSEN ARCHITECTURE

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-9471 FAX (801) 401-9471
WWW.SPECTRUM-ENGINEERS.COM

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STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
WWW.STANTEC.COM

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
BMA@MAILSNARE.NET

LICENSED PROFESSIONAL ENGINEER No. 374052 CHAD B. FORREST STATE OF UTAH

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
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ONE-LINE DIAGRAM

EP601

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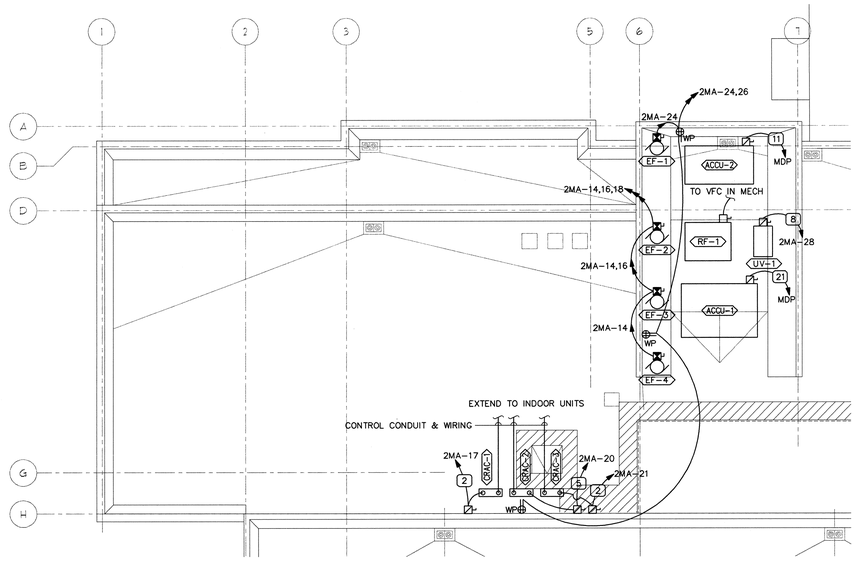
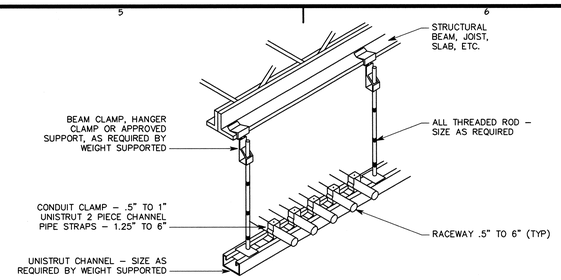
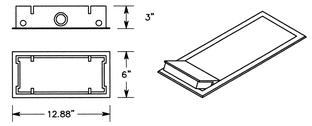


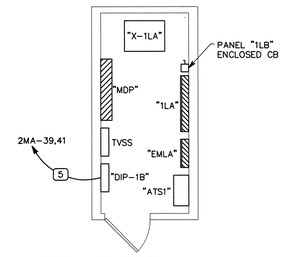
D2 ROOF ELECTRICAL PLAN
1/8"=1'-0"



E5 TYPICAL CONDUIT RACK DETAIL
NTS

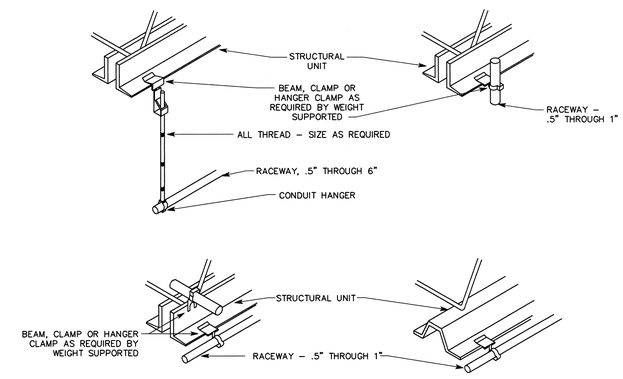


C3 FLOOR BOX #1 FB1
NTS

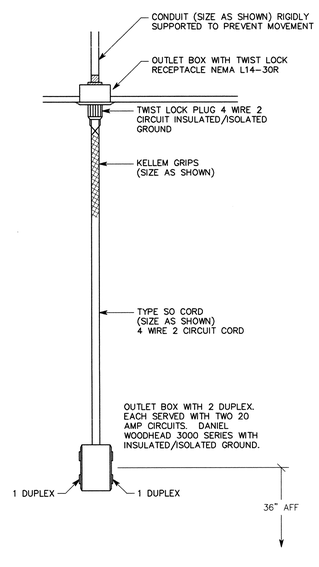


C4 ENLARGED ELECTRICAL ROOM
1/4"=1'-0"

NOTE: TIE WIRE SHALL NOT BE USED AS A COMPONENT OF ANY RACEWAY HANGER SYSTEM.



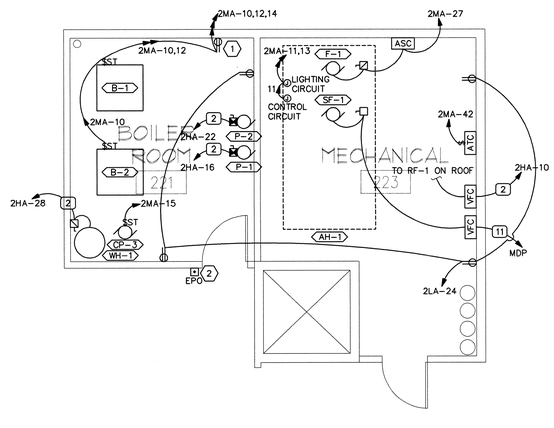
C5 TYPICAL RACEWAY SUPPORT METHODS DETAIL
NTS



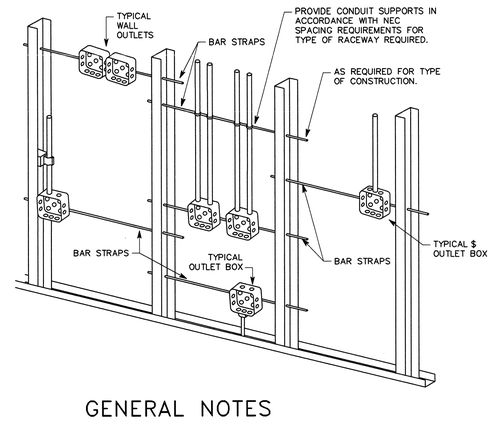
A2 DROP CORD DETAIL
NTS

SHEET KEYNOTES

1. PROVIDE CONNECTIONS TO GLYCOL FILL STATION.
2. EPO BUTTON SHALL SHUNT TRIP CIRCUIT BREAKERS PROTECTING BOILERS IN BOILER ROOM UPON ACTIVATION. EPO BUTTON SHALL BE LABELED "EMERGENCY BOILER SHUT-DOWN PUSH BUTTON" AND SHALL HAVE CLEAR, HINGED COVER. PROVIDE LOCKABLE ENCLOSURE. EPO BUTTON SHALL BE PILLA ST1208L OR EQUIVALENT.



A3 ENLARGED MECHANICAL ROOM
1/4"=1'-0"



GENERAL NOTES

1. TYPICAL FOR WOOD AND METAL STUD ROUGH-IN.
2. PLASTER RINGS NOT SHOWN.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND WITH ALL APPLICABLE SHOP DRAWINGS.
4. IN ACCORDANCE WITH IBC 711.3.2 EXCEPTION 1, OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS IN THE SAME STUD SPACE IN A RATED FIRE SEPARATION WALL MUST BE SEPARATED BY A MINIMUM OF 24" HORIZONTAL DISTANCE.
5. IN NON-RATED WALLS, OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS MUST BE SEPARATED BY 16" FOR SOUND ATTENUATION.

A5 TYPICAL ROUGH-IN REQUIREMENTS DETAIL
NTS

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

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SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8471 FAX (801) 401-9471
WWW.SPECTRUM-ENGINEERS.COM

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STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
WWW.STANTEC.COM

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
BMA@MAILSNARE.NET

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POWER DETAILS

EP501

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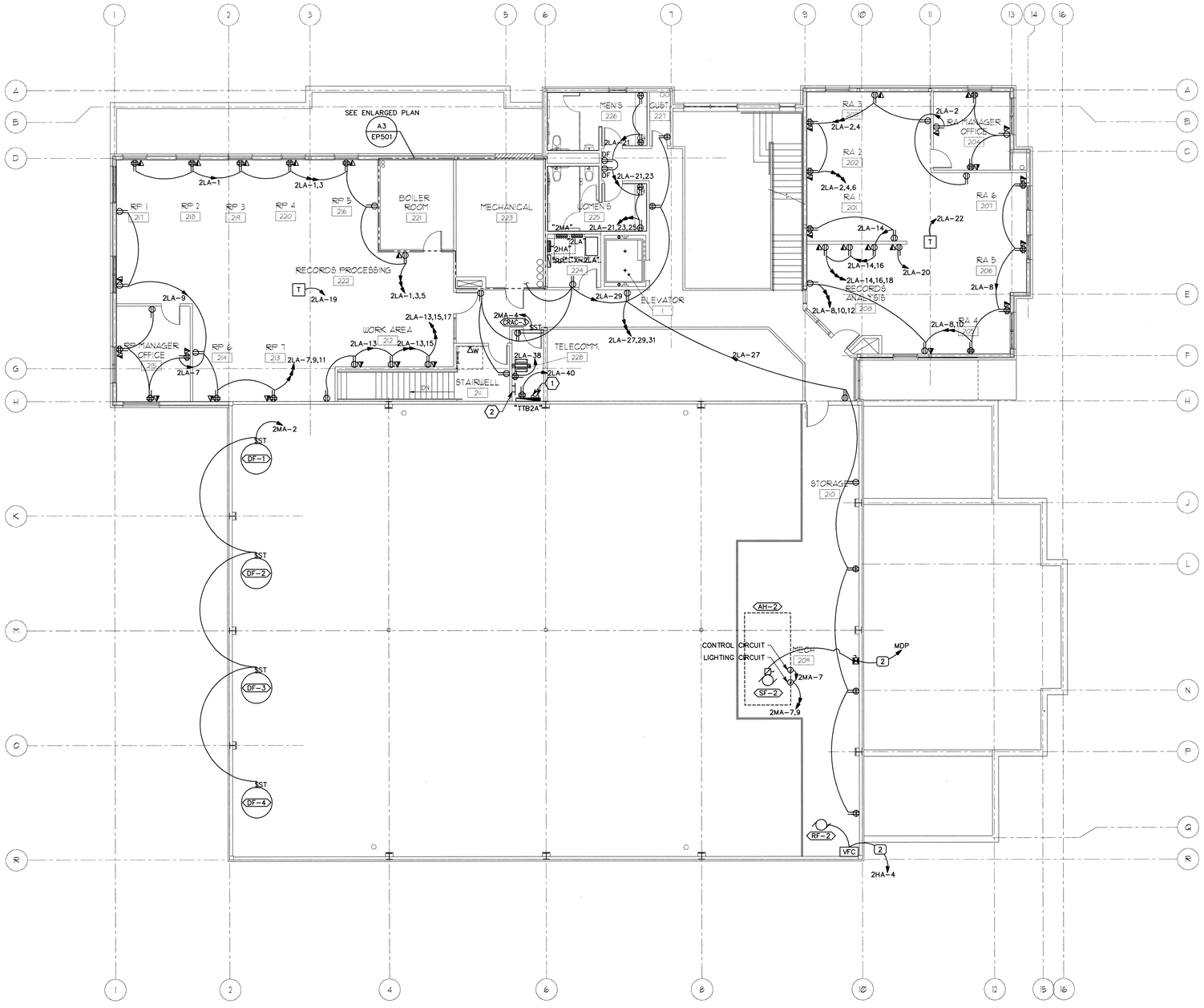
SHEET KEYNOTES

1. PROVIDE 2 EACH 4-INCH SLEEVES THRU FLOOR FOR COMMUNICATIONS CABLING TO TELECOM 113 BELOW.
2. GROUND BUS BAR.



A1 SECOND FLOOR POWER PLAN
SCALE: 1/8"=1'-0"

PLAN NORTH

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SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

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EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8471 FAX (801) 401-9471
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STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
WWW.STANTEC.COM

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
BMA@MAILSNARE.NET

LICENSED PROFESSIONAL ENGINEER
No. 174[illegible]
CHAD R. FORREST
STATE OF UTAH

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300 SOUTH 500 WEST
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SECOND FLOOR POWER PLAN

EP102

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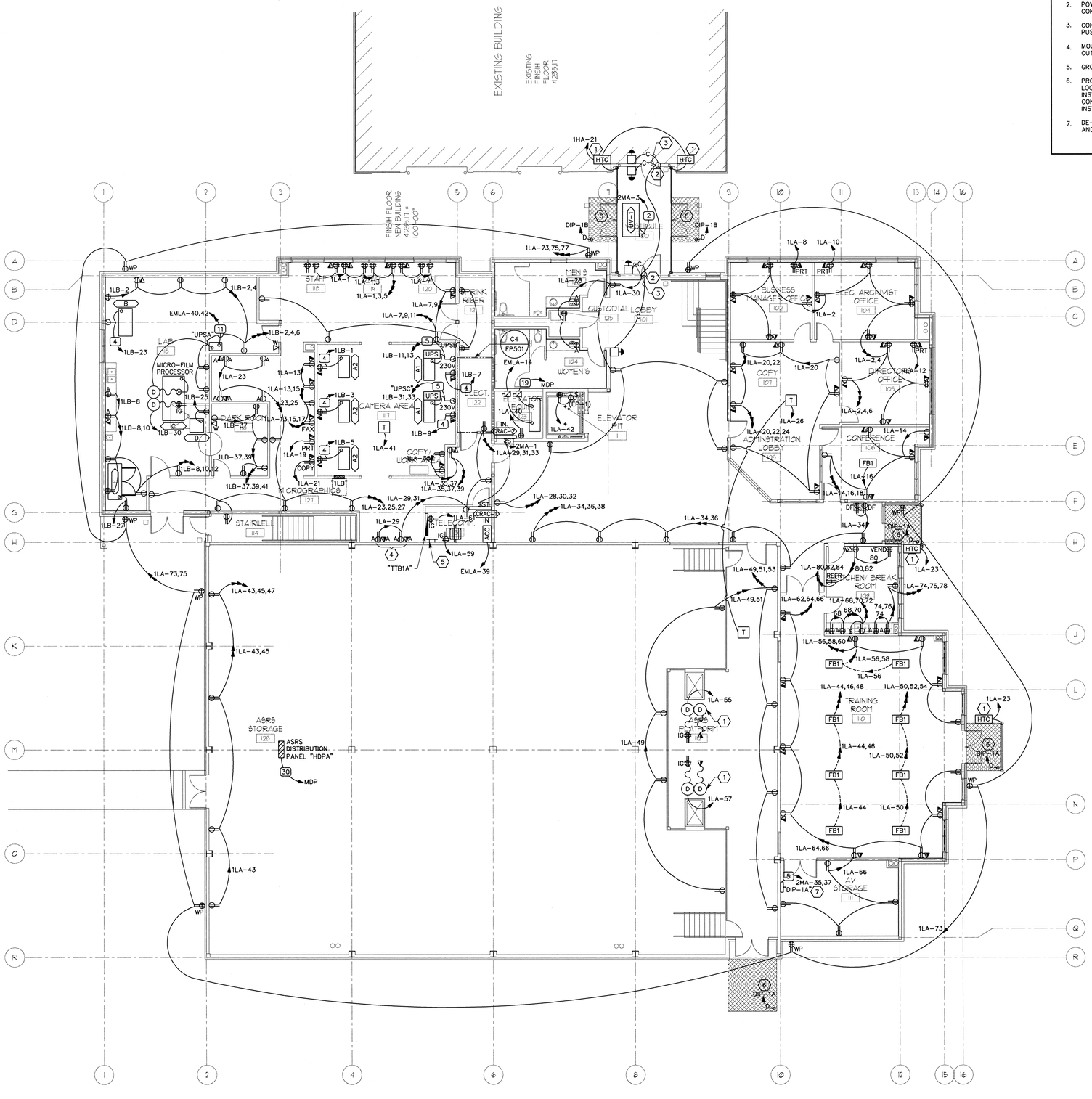
SHEET KEYNOTES

1. PROVIDE DROP CORD OUTLET FOR ASRS SERVICE ON PLATFORM. COORDINATE EXACT LOCATION WITH ASRS CONTRACTOR.
2. POWERED DOOR OPENER. PROVIDE 120V BRANCH CIRCUIT CONNECTION TO POWER SUPPLY.
3. CONTROL CONDUIT AND CONDUCTORS FOR POWERED DOOR OPENER PUSH PLATES. PROVIDE 6 #14 CU, 0.75-INCH CONDUIT.
4. MOUNT OUTLETS ABOVE COUNTER AT +34-INCHES TO CENTER OF OUTLET.
5. GROUND BUS BAR.
6. PROVIDE CONNECTION TO CANOPY DE-ICING SYSTEM AT THIS LOCATION. DE-ICING MESH IN CANOPY TO BE FURNISHED AND INSTALLED BY CANOPY CONTRACTOR. CABLING FROM CANOPY TO CONTROLLER TO BE FURNISHED BY CANOPY CONTRACTOR AND INSTALLED BY DIVISION 16 CONTRACTOR.
7. DE-ICING CONTROL PANEL, FURNISHED BY CANOPY CONTRACTOR AND INSTALLED BY DIVISION 16 CONTRACTOR.



A1 MAIN FLOOR POWER PLAN
SCALE: 1/8"=1'-0"

PLAN NORTH

COOPER ROBERTS SIMONSEN ARCHITECTURE

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
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STRUCTURAL ENGINEER
EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8471 FAX (801) 401-9471
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STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
WWW.STANTEC.COM

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
BMA@MAILSNARE.NET

LICENSED PROFESSIONAL ENGINEER
No. 3-4552
CRAIG B. FORREST
STATE OF UTAH

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SALT LAKE CITY UTAH

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MAIN FLOOR POWER PLAN

EP101

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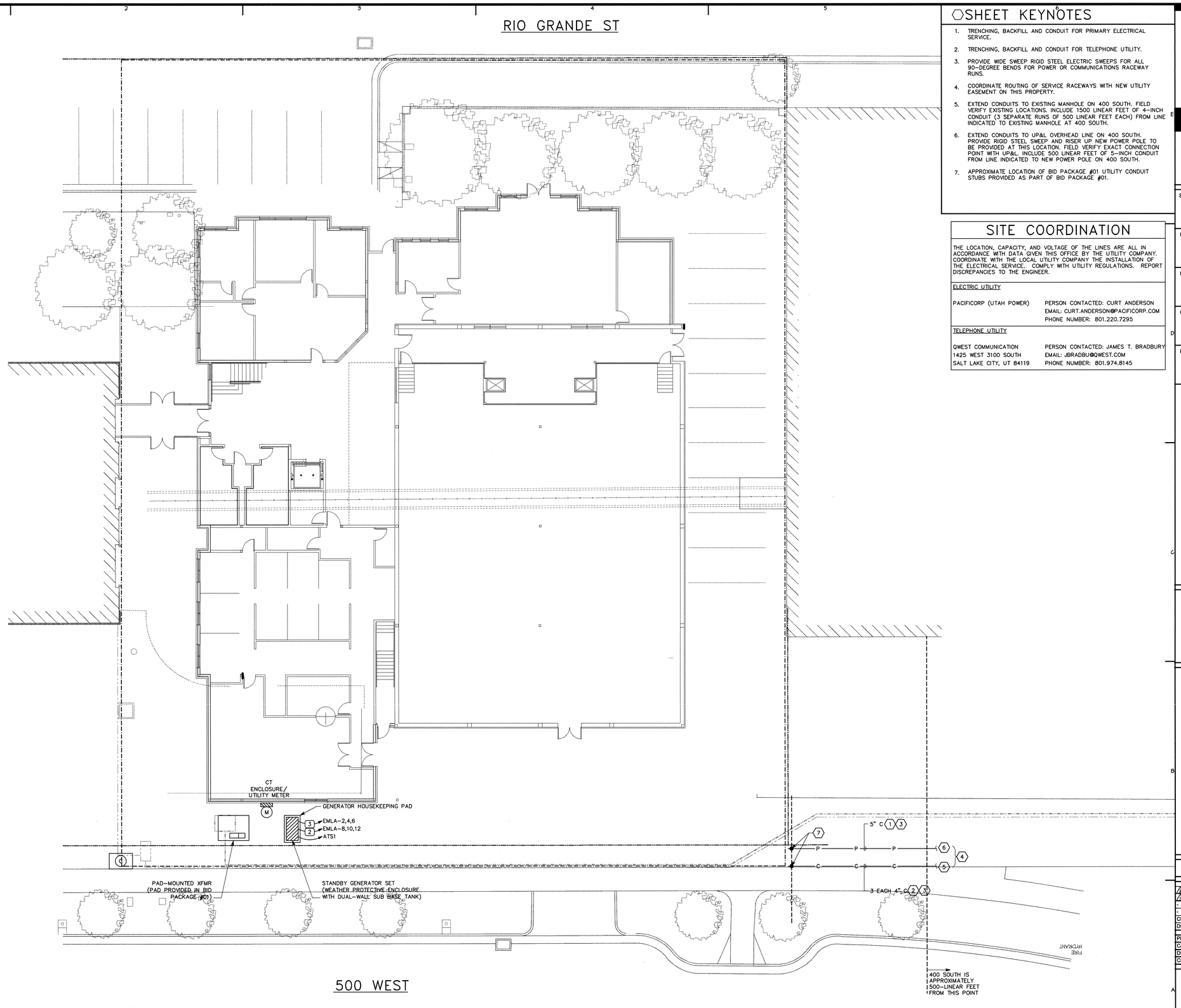

A1 NEW ELECTRICAL SITE PLAN
SCALE: 1"=10'-0"

SHEET KEYNOTES

1. TRENCHING, BACKFILL AND CONDUIT FOR PRIMARY ELECTRICAL SERVICE.
2. TRENCHING, BACKFILL AND CONDUIT FOR TELEPHONE UTILITY.
3. PROVIDE WIDE SWEEP RIGID STEEL ELECTRIC SWEEPS FOR ALL 90-DEGREE BENDS FOR POWER OR COMMUNICATIONS RACEWAY RUNS.
4. COORDINATE ROUTING OF SERVICE RACEWAYS WITH NEW UTILITY EASEMENT ON THIS PROPERTY.
5. EXTEND CONDUITS TO EXISTING MANHOLE ON 400 SOUTH. FIELD VERIFY EXISTING LOCATIONS. INCLUDE 1500 LINEAR FEET OF 4-INCH CONDUIT (3 SEPARATE RUNS OF 500 LINEAR FEET EACH) FROM LINE INDICATED TO EXISTING MANHOLE AT 400 SOUTH.
6. EXTEND CONDUITS TO UP&L OVERHEAD LINE ON 400 SOUTH. PROVIDE RIGID STEEL SWEEP AND RISER UP NEW POWER POLE TO BE PROVIDED AT THIS LOCATION. FIELD VERIFY EXACT CONNECTION POINT WITH UP&L. INCLUDE 500 LINEAR FEET OF 5-INCH CONDUIT FROM LINE INDICATED TO NEW POWER POLE ON 400 SOUTH.
7. APPROXIMATE LOCATION OF BID PACKAGE #01 UTILITY CONDUIT STUBS PROVIDED AS PART OF BID PACKAGE #01.

SITE COORDINATION

THE LOCATION, CAPACITY, AND VOLTAGE OF THE LINES ARE ALL IN ACCORDANCE WITH DATA GIVEN THIS OFFICE BY THE UTILITY COMPANY. COORDINATE WITH THE LOCAL UTILITY COMPANY THE INSTALLATION OF THE ELECTRICAL SERVICE. COMPLY WITH UTILITY REGULATIONS. REPORT DISCREPANCIES TO THE ENGINEER.

ELECTRIC UTILITY

PACIFICORP (UTAH POWER)
PERSON CONTACTED: CURT ANDERSON
EMAIL: CURT.ANDERSON@PACIFICORP.COM
PHONE NUMBER: 801.220.7295

TELEPHONE UTILITY

QWEST COMMUNICATION
1425 WEST 3100 SOUTH
SALT LAKE CITY, UT 84119
PERSON CONTACTED: JAMES T. BRADBURY
EMAIL: JBRADBU@QWEST.COM
PHONE NUMBER: 801.974.8145

COOPER ROBERTS SIMONSEN ARCHITECTURE

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
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310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
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(801) 401-8471 FAX (801) 401-9471
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STANTEC CONSULTING INC.
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SALT LAKE CITY, UT
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LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
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ELECTRICAL SITE PLAN

ES101

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GENERAL SHEET NOTES

1. DETERMINE MOUNTING HEIGHTS OF ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE FOLLOWING ORDER OF PRIORITY:

   1 – ELEVATIONS (ARCHITECTURAL, ELECTRICAL, MECHANICAL, ETC).
   2 – EQUIPMENT SHOP DRAWINGS.
   3 – FIELD INSTRUCTIONS.

2. LOCATE RECEPTACLES SERVING THE SAME TYPE OF USE AT A UNIFORM HEIGHT UNLESS DIRECTED OTHERWISE.
3. MECHANICAL, ELECTRICAL, AND COMMUNICATION ROOMS: COORDINATE LOCATION OF LIGHTING AND POWER RECEPTACLES WITH EQUIPMENT, PIPING, AND DUCTWORK. DO NOT INSTALL RECEPTACLES BEHIND EQUIPMENT OR WHERE OTHERWISE INACCESSIBLE. POSITION LIGHTING REGARDLESS OF WHERE SHOWN ON DRAWING TO PROVIDE PROPER ILLUMINATION.
4. MOUNT RECEPTACLE BOXES FOR SWITCHES AND RECEPTACLES WITH LONG AXIS OF THE DEVICE VERTICAL UNLESS OTHERWISE INDICATED.
5. SET BOXES WITH PLASTER RINGS FLUSH WITH FINISHED SURFACE.
6. LOCATE BOX COVERS OR DEVICE PLATES SO THEY WILL NOT SPAN DIFFERENT TYPES OF BUILDING FINISHES EITHER VERTICALLY OR HORIZONTALLY.
7. VERIFY ALL DOOR CONDITIONS ON ARCHITECTURAL DRAWINGS PRIOR TO INSTALLING SWITCHES.
8. LOCATE WIRING DEVICES WHICH ARE ADJACENT AND ARE COMPATIBLE VOLTAGES IN ONE PLATE.

SHEET KEYNOTES

1. LOCATE RECEPTACLES BEHIND DRINKING FOUNTAINS.
2. REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF OUTLETS.
3. LOCATE AT BOTTOM OF BEAMS (OR JOISTS) OR AT CEILING. (REDUCE SPACING BY .5 PERPENDICULAR TO BEAM OR JOIST DIRECTION.) FOR OTHER CONDITIONS, REFER TO NFPA 72.
4. LOCATE SMOKE DETECTOR IN SHADED AREA.
5. LOCATE AT BOTTOM OF BEAMS IF EITHER D/H < .1 OR W/H < .4; OTHERWISE, LOCATE IN BEAM POCKET.

COOPER ROBERTS SIMONSEN ARCHITECTURE

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

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COLVIN ENGINEERING
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SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
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SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
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(801) 401-8471 FAX (801) 401-9471
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3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
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BRENT MORRIS ASSOCIATES
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(801) 544-0064 FAX (801) 546-6669
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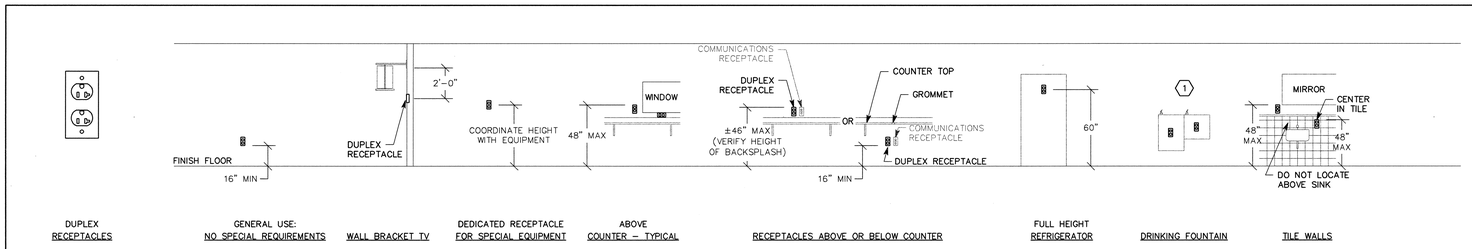
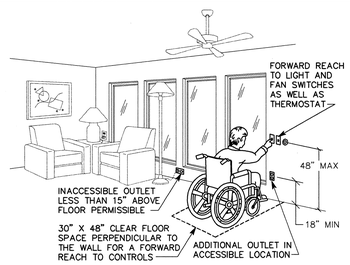


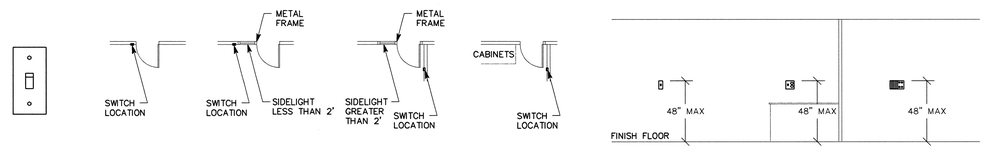
DUPLEX RECEPTACLES | GENERAL USE: NO SPECIAL REQUIREMENTS | WALL BRACKET TV | DEDICATED RECEPTACLE FOR SPECIAL EQUIPMENT | ABOVE COUNTER – TYPICAL | RECEPTACLES ABOVE OR BELOW COUNTER | FULL HEIGHT REFRIGERATOR | DRINKING FOUNTAIN | TILE WALLS

REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF OUTLETS.

D2 RECEPTACLE MOUNTING DETAILS
NTS

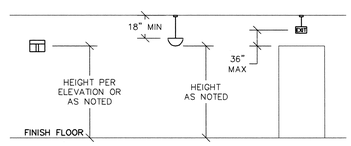


C2 ADA DETAIL
NTS



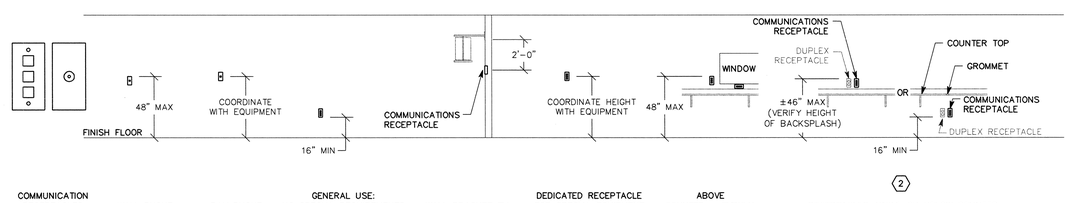
SWITCHES | STANDARD DOOR | DOOR WITH SIDELIGHT LESS THAN 2' | DOOR WITH SIDELIGHT GREATER THAN 2' | DOOR WITH NO PLACE FOR SWITCH AT LATCH SIDE | GENERAL USE: ADA | COMBINATION 48" MAX PLATE FOR SWITCH AND RECEPTACLE IN RESIDENTIAL BATHROOM | LIGHTING CONTROL STATION

C3 SWITCH MOUNTING DETAILS
NTS



WALL MOUNTED LIGHT FIXTURE | PENDANT LIGHT FIXTURE | PENDANT EXIT SIGNS

B2 LIGHTING MOUNTING DETAILS
NTS

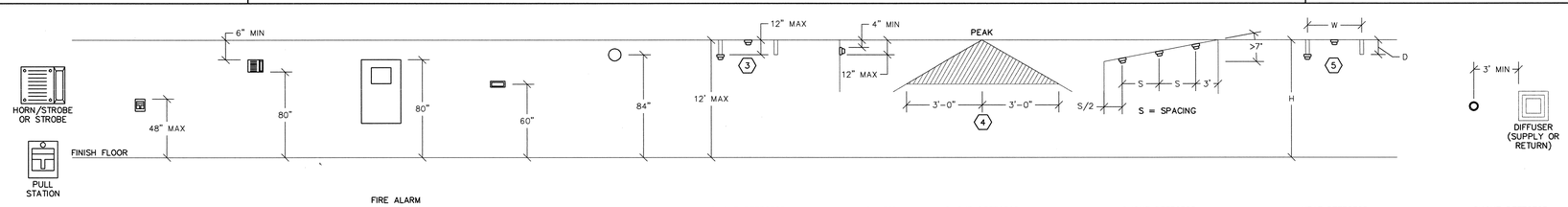


COMMUNICATION RECEPTACLES | WALL PHONE | PAY PHONE | GENERAL USE: NO SPECIAL REQUIREMENTS | WALL BRACKET TV | DEDICATED RECEPTACLE FOR SPECIAL EQUIPMENT | ABOVE COUNTER – TYPICAL | RECEPTACLES ABOVE OR BELOW COUNTER

B3 COMMUNICATION MOUNTING DETAILS
NTS

BOXES ON OPPOSITE SIDES OF WALL

B6 BOX MOUNTING DETAILS
NTS



FIRE ALARM | PULL STATION | HORN, CHIME, OR STROBE | FIRE ALARM CONTROL PANEL "FCP" | FIRE SYSTEM ANNUNCIATOR "FSA" | BELL | SMOKE DETECTOR BETWEEN BEAMS | WALL MOUNTED SMOKE DETECTOR | SMOKE DETECTOR ON PEAKED CEILING | SMOKE DETECTOR ON SHED CEILING | HEAT DETECTOR BETWEEN BEAMS | SMOKE DETECTOR ADJACENT TO SUPPLY AIR

A2 FIRE ALARM MOUNTING DETAILS
NTS

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TYPICAL MOUNTING HEIGHT DETAILS

EE701

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SYMBOL LEGEND

SYMBOL	DESCRIPTION
REFERENCE AND LINE SYMBOLS	
A5 / E-501	DETAIL INDICATOR: A5 INDICATES DETAIL NUMBER, E-501 INDICATES DRAWING SHEET WHERE DETAIL IS SHOWN.
A5 / E-201	ELEVATION OR SECTION INDICATOR, EXTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
100	ROOM OR SPACE NUMBER.
1	KEYNOTE INDICATOR.
1	REVISION INDICATOR.
CU-1	EQUIPMENT INDICATOR.
	BREAK, STRAIGHT: TO BREAK PARTS OF DRAWING.
	BREAK, ROUND.
MATCH LINE SEE XX/X-XXX	MATCH LINE INDICATOR: CENTER, EXTRA WIDE LINE.
	NEW LINE: MEDIUM LINE.
	HIDDEN FEATURES LINE: HIDDEN, THIN LINE.
	PROPERTY LINE: DASHED, WIDE LINE.
	CONTRACT LIMIT LINE: DASHDOT, WIDE LINE.
WIRING METHODS	
	WIRING.
	WIRING TURNED UP OR TOWARDS OBSERVER.
	WIRING TURNED DOWN OR AWAY FROM OBSERVER.
A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. USE #12 CONDUCTORS, EXCEPT #10 CONDUCTORS SHALL BE INSTALLED IF DISTANCES EXCEED THOSE SPECIFIED IN SECTION 16120.
1 A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. NUMBER IN BOX REFERS TO THE CONDUCTOR AND CONDUIT SCHEDULE. FOR BRANCH WIRING USE #12 CONDUCTORS, EXCEPT #10 CONDUCTORS SHALL BE INSTALLED IF DISTANCES EXCEED THOSE SPECIFIED IN SECTION 16120.
	LOW VOLTAGE WIRING: DIVIDE, MEDIUM LINE.
	CONDUIT STUB. DIMENSION RECORD DRAWINGS AND MARK.
1	CONDUCTOR & CONDUIT ("CC") SCHEDULE INDICATOR. REFER TO ONE-LINE DIAGRAM.
J	JUNCTION BOX.
J SC	JUNCTION BOX, SYSTEMS FURNITURE COMMUNICATION CONNECTION.
J SP	JUNCTION BOX, SYSTEMS FURNITURE POWER CONNECTION.
LIGHTING (REFER TO FIXTURE SCHEDULE FOR SYMBOLS)	
(W-3)	FIXTURE IDENTIFICATION: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
(W-3)	FIXTURE IDENTIFICATION, EMERGENCY, CONNECTED TO GENERATOR AS INDICATED: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
EM	EMERGENCY.
NL	NIGHT LIGHT: DO NOT SWITCH.
↑	EGRESS DIRECTION ARROW.
LIGHTING CONTROL	
D	OCCUPANCY SENSOR, DUAL-TECHNOLOGY, CEILING.
	OCCUPANCY SENSOR, ULTRASONIC, WALL.
P	PHOTOCELL.
TC	TIME CLOCK.
DPS	DAYLIGHT PHOTOSENSOR WITH INTEGRAL RELAY.
SP	OCCUPANCY SENSOR SWITCH PACK.
BLT	BALLAST-LOAD-TRANSFER SWITCH.
STRUCTURED CABLING (RACEWAY AND BACKBOXES ONLY)	
P	TELEPHONE, WALL MOUNTED: PAY PHONE.
W	TELEPHONE, WALL MOUNTED: WALL PHONE.
	OUTLET, BUILDING STANDARD COMBINATION TELEPHONE/ DATA COMMUNICATION.
	TELEPHONE TERMINAL BOARD, FIRE TREATED PLYWOOD PAINTED.
C C	CABLE TRAY.

SYMBOL LEGEND

SYMBOL	DESCRIPTION
ELECTRICAL POWER AND DISTRIBUTION	
	DISCONNECT, FUSED (ONE-LINE DIAGRAM).
	DISCONNECT, NONFUSED (ONE-LINE DIAGRAM).
	OVERLOAD RELAY (ONE-LINE DIAGRAM).
	STARTER (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER, MOLDED CASE (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER, MOLDED CASE WITH SHUNT TRIP (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER, SOLID STATE (ONE-LINE DIAGRAM).
	MOTOR.
	TRANSFORMER (ONE-LINE DIAGRAM).
225/3 "1H"	PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
225/3 "1H"	PANELBOARD WITH MAIN CIRCUIT BREAKER. SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
225/3 "1H" 60/3	PANELBOARD WITH MAIN AND SUB FEED CIRCUIT BREAKER (ONE-LINE DIAGRAM).
225/3 "1H" 225/3 "1H"	PANELBOARD WITH SUB FEED LUGS (ONE-LINE DIAGRAM).
225/3 "1H" "1H"	PANELBOARD WITH CIRCUIT BREAKER AND SUB FEED LUGS (ONE-LINE DIAGRAM).
	CT CABINET PER UTILITY'S REQUIREMENTS (ONE-LINE DIAGRAM).
	TRANSFER SWITCH (ONE-LINE DIAGRAM).
G	GENERATOR, POWER (ONE-LINE DIAGRAM).
M	METER.
	DISCONNECT SWITCH, FUSED.
	DISCONNECT SWITCH, UNFUSED.
	STARTER, COMBINATION WITH DISCONNECT SWITCH.
	STARTER OR MOTOR CONTROLLER.
	PUSHBUTTON.
	PUSHBUTTONS, MOTOR CONTROL.
	PANELBOARD CABINET, FLUSH MOUNTED.
	PANELBOARD CABINET, SURFACE MOUNTED, 1 SECTION.
	PANELBOARD CABINET, SURFACE MOUNTED, 2 SECTION.
DP#__	DISTRIBUTION PANEL OR SWITCHBOARD.
RP	LIGHTING RELAY PANEL.
$ST	SWITCH, TOGGLE MOTOR STARTER WITH OVERLOAD PROTECTION.
75	TRANSFORMER: NUMBER INDICATES kVA.
VFC	VARIABLE FREQUENCY CONTROLLER (ONE-LINE DIAGRAM).
ASC	ADJUSTABLE SPEED CONTROLLER.

SYMBOL LEGEND

SYMBOL	DESCRIPTION
WIRING DEVICES	
	RECEPTACLE, DUPLEX: NEMA 5-20R.
A	RECEPTACLE, DUPLEX, ABOVE COUNTER: NEMA 5-20R.
C	RECEPTACLE, DUPLEX, CEILING: NEMA 5-20R.
D	RECEPTACLE, DUPLEX, DEDICATED CIRCUIT: NEMA 5-20R.
DF	RECEPTACLE, DUPLEX, DRINKING FOUNTAIN: CONCEAL WATER COOLER RECEPTACLE BEHIND WATER COOLER. SEE DIVISION 15 SHOP DRAWINGS FOR INSTALLATION REQUIREMENTS.
IG	RECEPTACLE, DUPLEX, ISOLATED GROUND: NEMA 5-20R.
WP	RECEPTACLE, DUPLEX, WEATHERPROOF: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R.
WP	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, WEATHERPROOF: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX: NEMA 5-20R.
	RECEPTACLE, SPECIAL PURPOSE. PROVIDE RECEPTACLE TO MATCH EQUIPMENT PLUG.
FB#	FLUSH FLOOR BOX. "#" SHOWN ON DRAWINGS. REFER TO WIRING DEVICE SCHEDULE IN SECTION 16140 FOR CONFIGURATION AND DEVICES.
D	DROP CORD. SEE DETAIL.
D	SWITCH, DIMMER.
X $	SWITCH, SINGLE POLE ("x" INDICATES FIXTURES CONTROLLED).
X $3	SWITCH, THREE-WAY ("x" INDICATES FIXTURES CONTROLLED).
X $4	SWITCH, FOUR-WAY ("x" INDICATES FIXTURES CONTROLLED).
T	ATC TRANSFORMER 120-24V (FURNISHED BY ATC CONTRACTOR, INSTALLED BY DIVISION 16 CONTRACTOR).
FIRE ALARM	
FSA	FIRE SYSTEM ANNUNCIATOR.
FCP	FIRE ALARM CONTROL PANEL, SEMI-RECESSED.
CM	CONTROL MODULE.
MM	MONITOR MODULE.
P	FIRE ALARM MANUAL PULL STATION.
R	SHUT DOWN RELAY: INSTALL RELAY IN CONTROL CIRCUIT OF EQUIPMENT TO BE CONTROLLED IN THE EVENT OF A FIRE.
	DETECTOR, SMOKE.
P	DETECTOR, SMOKE, SPOT-TYPE, PHOTOELECTRIC.
I	DETECTOR, SMOKE, SPOT-TYPE, IONIZATION.
B	DETECTOR, SMOKE, BEAM TYPE.
	DETECTOR, SMOKE, DUCT WITH HOUSING AND SAMPLING TUBE.
	DETECTOR, HEAT.
	STROBE.
WP	ALARM, HORN/SPEAKER, WEATHERPROOF.
	ALARM, HORN/STROBE, ONE ASSEMBLY.
	DETECTOR, FLOW SWITCH: FLOW SWITCHES SHALL BE PROVIDED AND INSTALLED WITH FIRE SPRINKLER SYSTEM AND SHALL BE CONNECTED TO LOCATIONS SHOWN ON THE FIRE SPRINKLER SHOP DRAWINGS.
	DETECTOR, TAMPER SWITCH WITH VALVE: TAMPER SWITCHES SHALL BE PROVIDED AND INSTALLED WITH FIRE SPRINKLER SYSTEM AND SHALL BE CONNECTED TO LOCATIONS SHOWN ON THE FIRE SPRINKLER SHOP DRAWINGS.
SD	SMOKE DAMPER.
ACCESS CONTROL SYSTEM	
"ACC"	ACCESS CONTROL SYSTEM CABINET.
CR	CARD READER.
ES	ELECTRIC STRIKE.
CI	DOOR POSITION SWITCH.
ML	MAGNETIC LOCK.
CI/MH	MAGNETIC LOCK WITH DOOR POSITION SWITCH.
ER	EXIT REQUEST.
R	REMOTE DOOR RELEASE BUTTON.

ABBREVIATIONS

NOTE: ALL ABBREVIATIONS MAY NOT BE USED.

1P	SINGLE POLE
1PH	SINGLE-PHASE
1WAY	ONE-WAY
2/C	TWO-CONDUCTOR
2WAY	TWO-WAY
3/C	THREE-CONDUCTOR
3PH	THREE-PHASE
3WAY	THREE-WAY
4OUT	QUADRUPLE RECEPTACLE OUTLET
4PDT	FOUR-POLE DOUBLE THROW
4PST	FOUR-POLE SINGLE THROW
4W	FOUR-WIRE
4WAY	FOUR-WAY
AC	ARMORED CABLE
ADA	AMERICANS WITH DISABILITIES ACT
ADJ	ADJACENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
ALUM	ALUMINUM
AMP	AMPERE
ANN	ANNUNCIATOR
AR	AS REQUIRED
ASC	AMPS SHORT CIRCUIT
ATS	AUTOMATIC TRANSFER SWITCH
AV	AUDIO VISUAL
AWG	AMERICAN WIRE GAGE
BB XFMR	BUCK-BOOST TRANSFORMER
CATV	COMMUNITY ANTENNA TELEVISION
CB	CIRCUIT BREAKER
CCBA	CUSTOM COLOR AS SELECTED BY ARCHITECT
CCTV	CLOSED CIRCUIT TELEVISION
CFBA	CUSTOM FINISH AS SELECTED BY ARCHITECT
CF/CI	CONTRACTOR FURNISHED/ CONTRACTOR INSTALLED
CF/OI	CONTRACTOR FURNISHED/ OWNER INSTALLED
CKT	CIRCUIT
CM	CONSTRUCTION MANAGER
CND	CONDUIT
CO	CONVENIENCE OUTLET
COR	CONTRACTING OFFICER'S REPRESENTATIVE
CP	CONTROL PANEL
CT	CURRENT TRANSFORMER
CTV	CABLE TELEVISION
CU	COPPER
dBA	UNIT OF SOUND LEVEL
DPDT	DOUBLE POLE DOUBLE THROW
DS	DISCONNECT SWITCH
EA	EACH
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENT	ELECTRICAL NONMETALLIC TUBING
EPO	EMERGENCY POWER OFF
EQUIP	EQUIPMENT
EXIST	EXISTING
FA	FIRE ALARM
FCP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
FMC	FLEXIBLE METAL CONDUIT
FOB	FREIGHT ON BOARD
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
G	GROUND
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
HD	HEAVY DUTY
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSE POWER
HPF	HIGH POWER FACTOR
HPS	HIGH PRESSURE SODIUM
HV	HIGH VOLTAGE
Hz	HERTZ
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
IN/IS	INSULATED/ISOLATED
I/O	INPUT/OUTPUT
IR	INFRARED
kV	KILOVOLT
kVA	KILOVOLT AMPERE

kVAR	KILOVOLT AMPERE REACTIVE
kW	KILOWATT
kWh	KILOWATT HOUR
LED	LIGHT EMITTING DIODE
LFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT
LFNC	LIQUID TIGHT FLEXIBLE NONMETALLIC CONDUIT
LPS	LOW PRESSURE SODIUM
LRA	LOCKED ROTOR AMPS
LTG	LIGHTING
LV	LOW VOLTAGE
MATV	MASTER ANTENNA TELEVISION SYSTEM
MAX	MAXIMUM
MC	METAL CLAD
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTION
MDP	MAIN DISTRIBUTION PANEL
MG	MOTOR GENERATOR
MH	MANHOLE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFC	NATIONAL FIRE CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OCP	OVER CURRENT PROTECTION
OF/CI	OWNER FURNISHED/ CONTRACTOR INSTALLED
OF/OI	OWNER FURNISHED/ OWNER INSTALLED
OFP	OBTAIN FROM PLANS
OH DR	OVERHEAD (COILING) DOOR
OL	OVERLOAD
PB	PUSHBUTTON
PF	POWER FACTOR
PH	PHASE
PNL	PANEL
PT	POTENTIAL TRANSFORMER
QTY	QUANTITY
R	REMOVE
RCP	REFLECTED CEILING PLAN
RMC	RIGID METAL CONDUIT
RNC	RIGID NONMETALLIC CONDUIT
RPM	REVOLUTIONS PER MINUTE
RR	REMOVE AND RELOCATE
SCA	SHORT CIRCUIT AMPS
SCBA	STANDARD COLOR AS SELECTED BY ARCHITECT
SF	SQUARE FOOT (FEET)
SFBA	STANDARD FINISH AS SELECTED BY ARCHITECT
SPDT	SINGLE POLE, DOUBLE THROW
SPEC	SPECIFICATION
SPST	SINGLE POLE, SINGLE THROW
S/S	START/STOP
ST	SINGLE THROW
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TL	TWIST LOCK
TP	TELEPHONE POLE
TP	TWISTED PAIR
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
TYP	TYPICAL
UF	UNDERFLOOR
UGND	UNDERGROUND
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VA	VOLT AMPERE
VFC	VARIABLE FREQUENCY CONTROLLER
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
XFMR	TRANSFORMER

ELECTRICAL SHEET INDEX

SHEET NO	SHEET TITLE
EE001	SYMBOL LEGEND/SHEET INDEX
EE701	TYPICAL MOUNTING HEIGHT DETAILS
ES101	ELECTRICAL SITE PLAN
EP101	MAIN FLOOR POWER PLAN
EP102	SECOND FLOOR POWER PLAN
EP501	POWER DETAILS
EP601	ONE-LINE DIAGRAM
EP602	GROUNDING/TELEPHONE RISER DIAGRAMS
EP603	MECHANICAL/LABORATORY EQUIPMENT SCHEDULES
EP604	PANEL SCHEDULES
EL101	MAIN FLOOR LIGHTING PLAN
EL102	SECOND FLOOR LIGHTING PLAN
EL501	LIGHTING DETAILS
EL601	LIGHTING FIXTURE SCHEDULE
EY101	MAIN FLOOR FIRE ALARM PLAN
EY102	SECOND FLOOR FIRE ALARM PLAN
EY103	MAIN FLOOR ACCESS CONTROL/AUXILIARY PLAN
EY104	SECOND FLOOR ACCESS CONTROL/AUXILIARY PLAN
EY601	FIRE ALARM RISER/ACCESS CONTROL RISER DIAGRAMS

DEFINITIONS

NOTE: ALL DEFINITIONS MAY NOT BE USED.

INDICATED: THE TERM "INDICATED" REFERS TO GRAPHIC REPRESENTATIONS, NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER PARAGRAPHS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR REQUIREMENTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH AS "SHOWN", "NOTED", "SCHEDULED", AND "SPECIFIED" ARE USED, IT IS TO HELP THE READER LOCATE THE REFERENCE, NO LIMITATION ON LOCATION IS INTENDED.

DIRECTED: TERMS SUCH AS "DIRECTED", "REQUESTED", AUTHORIZED", "SELECTED", "APPROVED", "REQUIRED", AND "PERMITTED" MEAN "DIRECTED BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND SIMILAR PHRASES.

APPROVE: THE TERM "APPROVED", WHERE USED IN CONJUNCTION WITH THE ENGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES AND RESPONSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY CONDITIONS.

FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."

INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

INSTALLER: AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY ENGAGED BY THE CONTRACTOR, EITHER AS AN EMPLOYEE, SUBCONTRACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A PARTICULAR CONSTRUCTION ACTIVITY, INCLUDING INSTALLATION, ERECTION, APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE REQUIRED TO BE EXPERIENCED IN THE OPERATIONS THEY ARE ENGAGED TO PERFORM.

ELECTRONIC SYSTEMS: THE TERM "ELECTRONIC SYSTEMS" IS USED TO DESCRIBE ALL LOW VOLTAGE SYSTEMS GENERALLY REFERRED TO AS "SPECIAL SYSTEMS". THESE SYSTEMS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO ALL SYSTEMS WHICH UTILIZE VOLTAGES OF LESS THAN 71 VOLTS SUCH AS SOUND SYSTEMS, VIDEO SYSTEMS, TV SYSTEMS, SECURITY SYSTEMS, VOICE AND DATA CABLING SYSTEMS, ETC...

GENERAL ELECTRICAL NOTES

1. CLARIFICATION METHODS: AT THE TIME OF BIDDING, BIDDERS SHALL FAMILIARIZE THEMSELVES WITH THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS, MISUNDERSTANDINGS, CONFLICTS, DELETIONS, DISCONTINUED PRODUCTS, CATALOG NUMBER DISCREPANCIES, DISCREPANCIES BETWEEN THE EQUIPMENT SUPPLIED AND THE INTENT OR FUNCTION OF THE EQUIPMENT, ETC, SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER IN WRITING FOR CLARIFICATION PRIOR TO ISSUANCE OF THE FINAL ADDENDUM AND BIDDING OF THE PROJECT. WHERE DISCREPANCIES OR MULTIPLE INTERPRETATIONS OCCUR, THE MOST STRINGENT (WHICH IS GENERALLY RECOGNIZED AS THE MOST COSTLY) THAT MEETS THE INTENT OF THE DOCUMENTS SHALL BE ENFORCED.

2. OWNER FURNISHED ITEMS: THE OWNER WILL FURNISH MATERIAL AND EQUIPMENT AS INDICATED IN THE CONTRACT DOCUMENTS TO BE INCORPORATED INTO THE WORK. THESE ITEMS ARE ASSIGNED TO THE INSTALLER AND COSTS FOR RECEIVING, HANDLING, STORAGE, IF REQUIRED, AND INSTALLATION ARE INCLUDED IN THE CONTRACT SUM.

   A. THE INSTALLER'S RESPONSIBILITIES ARE THE SAME AS IF THE INSTALLER FURNISHED THE MATERIALS OR EQUIPMENT.

   B. THE OWNER WILL ARRANGE AND PAY FOR DELIVERY OF OWNER FURNISHED ITEMS FREIGHT ON BOARD JOB SITE AND THE INSTALLER WILL INSPECT DELIVERIES FOR DAMAGE. IF OWNER FURNISHED ITEMS ARE DAMAGED, DEFECTIVE OR MISSING, DOCUMENT DAMAGED ITEMS WITH THE TRANSPORT COMPANY AND THE OWNER WILL ARRANGE FOR REPLACEMENT. THE OWNER WILL ALSO ARRANGE FOR MANUFACTURER'S FIELD SERVICES, AND THE DELIVERY OF MANUFACTURER'S WARRANTIES AND BONDS TO THE INSTALLER.

   C. THE INSTALLER IS RESPONSIBLE FOR DESIGNATING THE DELIVERY DATES OF OWNER FURNISHED ITEMS AND FOR RECEIVING, UNLOADING AND HANDLING OWNER FURNISHED ITEMS AT THE SITE. THE INSTALLER IS RESPONSIBLE FOR PROTECTING OWNER FURNISHED ITEMS FROM DAMAGE, INCLUDING DAMAGE FROM EXPOSURE TO THE ELEMENTS, AND TO REPAIR OR REPLACE ITEMS DAMAGED AS A RESULT OF HIS OPERATIONS.

3. EXPOSED STRUCTURE AREAS (EXCLUDING MECHANICAL, ELECTRICAL, AND COMMUNICATION SPACES): INSTALL RACEWAYS BETWEEN DECK AND STRUCTURE WHEREVER POSSIBLE IN EXPOSED STRUCTURE CEILING AREAS. ROUTE RACEWAYS IN CONCEALED AREAS WHEREVER POSSIBLE. REFER ALL CONDITIONS WHERE RACEWAYS MUST BE INSTALLED WHICH CANNOT COMPLY WITH THESE REQUIREMENTS TO THE ARCHITECT.

4. SUBMITTALS: PROVIDE SUBMITTALS IN THREE RING BINDERS WITH JOB NAME, SUBCONTRACTOR, AND VOLUME ON THE BINDING. PREPARE TABS FOR EACH SPECIFICATION SECTION REQUIRING SUBMITTALS. PREPARE INDEX OF EQUIPMENT SUBMITTED IN EACH TAB.

5. REFLECTED CEILING PLANS: COORDINATE THE LOCATION OF LIGHT FIXTURES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS. REFER ALL DISCREPANCIES TO THE ARCHITECT AND ENGINEER.

COOPER ROBERTS SIMONSEN ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
EQE/ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
MMAINRIDGE@ABSCONSULTING.COM

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
TCOLVIN@CEA-UT.COM

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8471 FAX (801) 401-9471
WWW.SPECTRUM-ENGINEERS.COM

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
WWW.STANTEC.COM

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
BMA@MAILSNARE.NET

LICENSED PROFESSIONAL ENGINEER
No. 374052
CHAD B. FORREST
STATE OF UTAH

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
SALT LAKE CITY UTAH

STATE OF UTAH DIVISION OF FACILITIES AND CONSTRUCTION

4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

BID PACKAGE #2

2		
1		
-	-	-
-	-	-
CD	OCTOBER 1, 2003	BID PACKAGE #2
DD	-	-

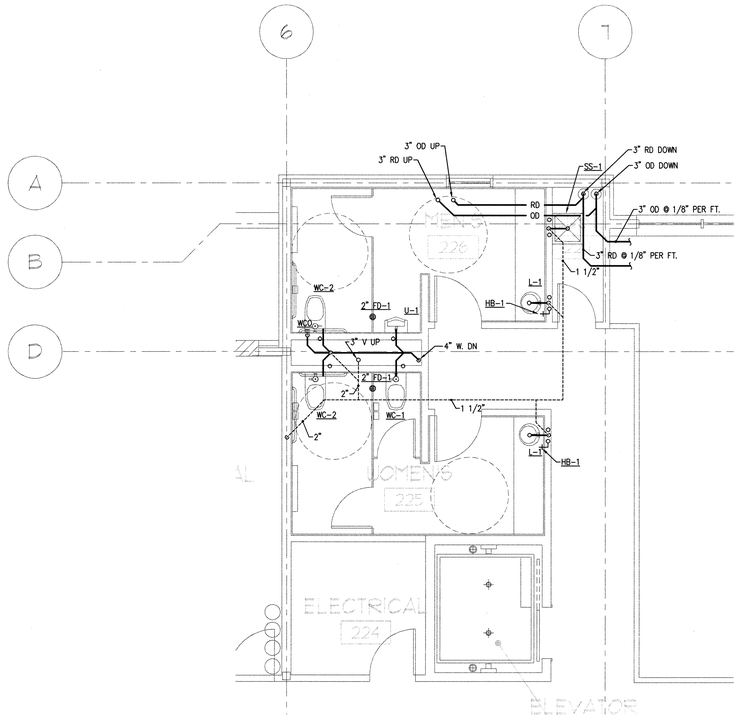
PROJECT NO: 20030420.CF
CAD DWG FILE: 20EE001.dwg
DRAWN BY: PSS
CHECKED BY: CBF

SYMBOL LEGEND/ SHEET INDEX

EE001

PLUMBING FIXTURE SCHEDULE

PLAN CODE	DESCRIPTION	ROUGH-IN SIZE C.W.	H.W.	WASTE	VENT	COMMENTS
WC-1	WATER CLOSET, STANDARD WALL MOUNT, MANUAL FLUSH VALVE, SIPHON JET, VITREOUS CHINA	1"	–	3"	2"	AMERICAN STANDARD "AFWALL" 2257.103 SEAT: OLSONITE #10 FLUSH VALVE: ZURN Z-6000 COLOR: WHITE FLOOR TO RIM: 15"
WC-2	WATER CLOSET, ADA COMPLIANT WALL MOUNT, MANUAL FLUSH VALVE, SIPHON JET, VITREOUS CHINA 1.6 GPF	1"	–	3"	2"	AMERICAN STANDARD "AFWALL" 2257.103 SEAT: OLSONITE #10 FLUSH VALVE: ZURN Z-6000AV-WS1 COLOR: WHITE FLOOR TO RIM: 17"
U-1	URINAL, ADA COMPLIANT, VITREOUS CHINA, SIPHON JET, MANUAL FLUSH VALVE, 1.0 GPF	3/4"	–	2"	1 1/2"	AMERICAN STANDARD "WASHBROOK" 6501.010 FLUSH VALVE: ZURN Z-6003 COLOR: WHITE FLOOR TO RIM: 17"
L-1	OVAL, VITREOUS CHINA, COUNTERTOP MOUNTED LAVATORY, 4" CENTERSET, SINGLE LEVER FAUCET 0.5 GPM FLOW	1/2"	1/2"	1 1/2"	1 1/2"	AMERICAN STANDARD "AFFINITY" 3420.403 FAUCET: AMERICAN STANDARD "MONTERREY" 7502.140
S-1	DOUBLE COMPARTMENT, RECTANGULAR STAINLESS STEEL, COUNTER MOUNT SINK, GOOSENECK SWING SPOUT WITH WING HANDLES, 18 GA.	1/2"	1/2"	1 1/2"	1 1/4"	BOWL: ELKAY LR-3322 FAUCET: ELKAY LK-232-S-BH-5 STRAINER: ELKAY LK-35
SS-1	SERVICE SINK, ENAMELED CAST IRON, WITH RIM GAURD, 3" GRID DRAIN AND FAUCET WITH VACUUM BREAKER, STOPS, TOP BRACE, CHROME FINISH.	3/4"	3/4"	3"	2"	SINK: KOHLER K-6710 FAUCET: KOHLER K-8907
EEW-1	EMERGENCY EYE WASH STATION	1/2"	–	–	–	BRADLEY MODEL # 519-210Y
EWC-1	ELECTRIC WATER COOLER	3/8"	–	–	–	OASIS P8AMSL



P2 SECOND FLOOR ENLARGED PLUMBING PLAN

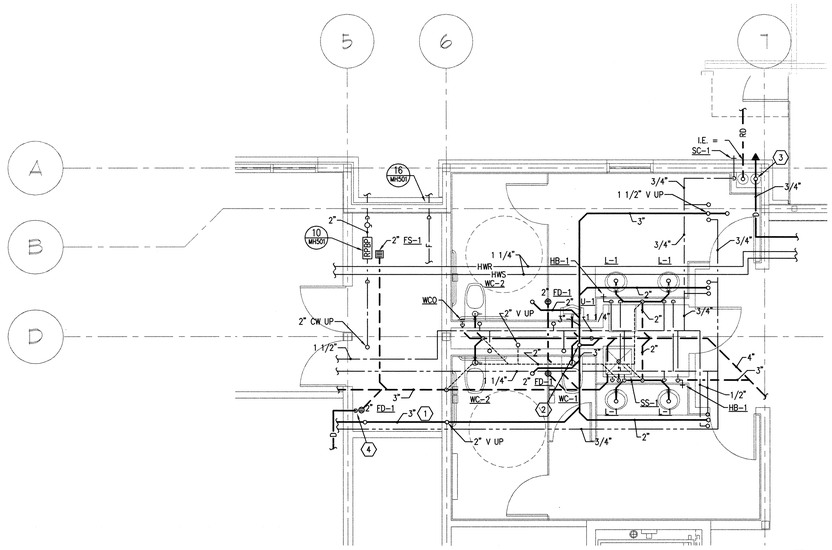
SCALE: 1/4" = 1'-0"

PLAN NORTH

3' 0 2' 4' 6' 8'

KEYED NOTES

1. COMBINATION WASTE AND VENT.
2. 4" WASTE UP.
3. CONNECT CONDENSATE DRAIN TO OVERFLOW ROOF DRAIN.
4. TERMINATE CONDENSATE DRAIN AT FLOOR DRAIN.
5. PROVIDE MAIN BUILDING SHUT OFF AND BACK FLOW PREVENTER.



P1 FIRST FLOOR ENLARGED PLUMBING PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH

3' 0 2' 4' 6' 8'

COOPER ROBERTS SIMONSEN ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
sdeakins@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

Colvin Engineering Associates, Inc.
244 West 300 North Suite 200
Salt Lake City, Utah 84103
Phone (801) 322-2400 / Fax (801) 322-2416

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DIVISION OF FACILITIES AND CONSTRUCTION

4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

BID PACKAGE #2

CD	OCTOBER 1 2003	BID PACKAGE #2
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PROJECT NO: 2003-039.00
CAD DWG FILE: PL401.dwg
DRAWN BY: JLW
CHECKED BY: SMD

ENLARGED PLUMBING PLANS

PL401

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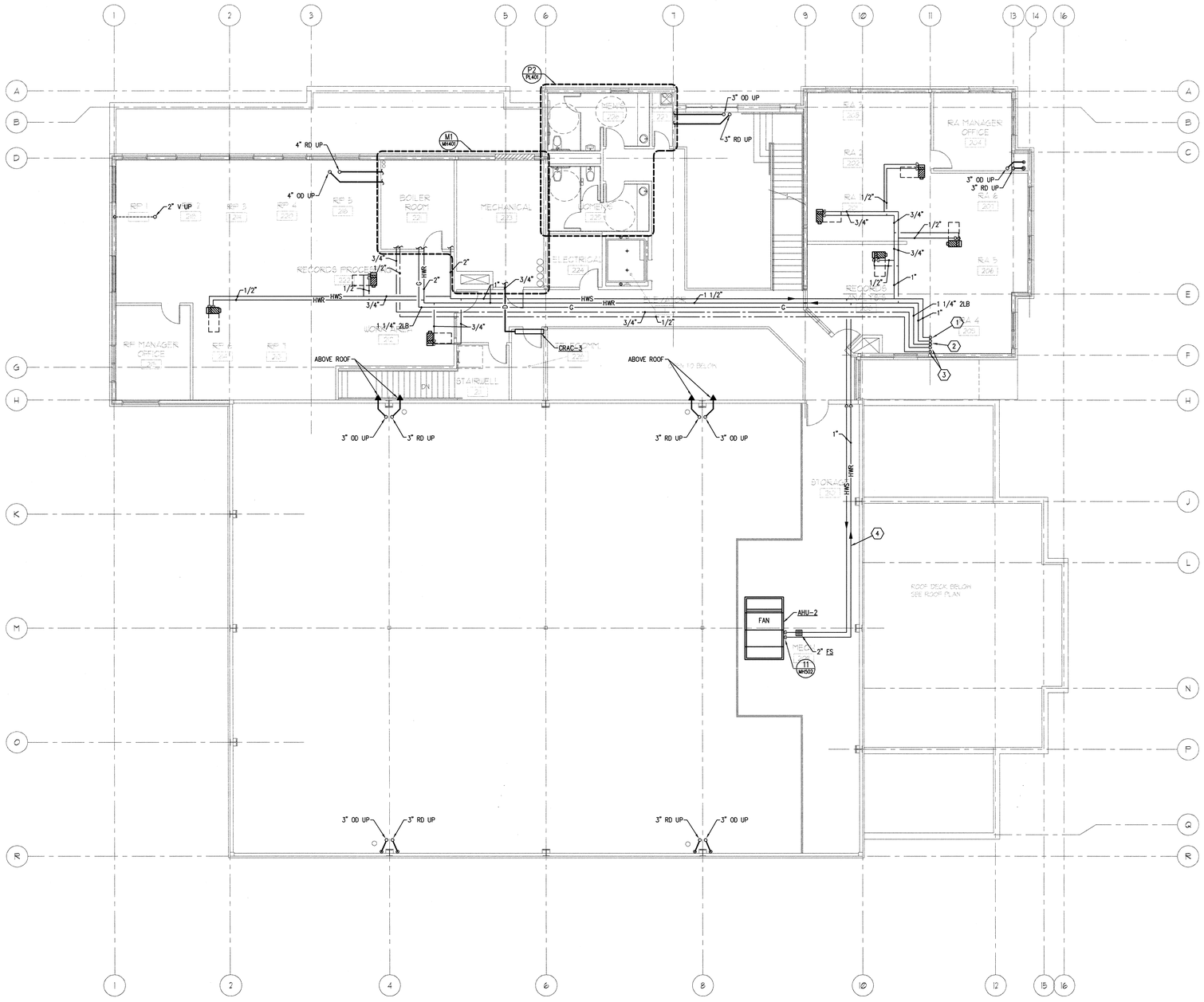

KEYED NOTES

1. 1" HEATING WATER SUPPLY AND RETURN DOWN TO FIRST FLOOR.
2. 1 1/4" 2LB GAS PIPE TO FIRST FLOOR.
3. 3/4" CW AND 1/2" HW DOWN TO FIRST FLOOR.
4. RACK PIPING ALONG WALL.

P1 SECOND FLOOR PLUMBING PLAN

SCALE: 1/8" = 1'-0"

PLAN NORTH

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SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
sdeakins@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

Colvin Engineering Associates, Inc.
244 West 300 North Suite 200
Salt Lake City, Utah 84103
Phone (801) 322-2400 / Fax: (801) 322-2416

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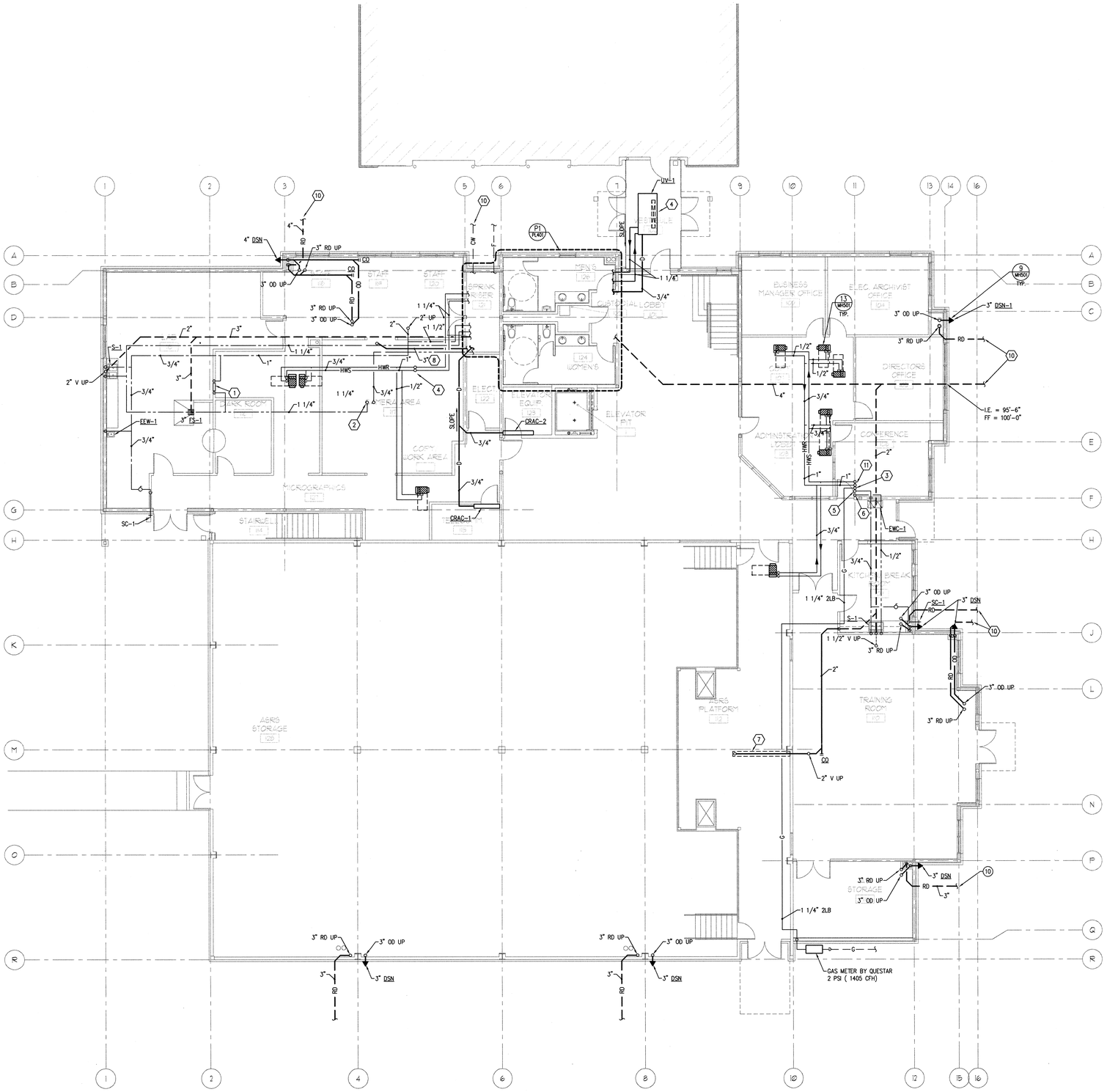
CAD DWG FILE: PL102.dwg
DRAWN BY: JLW
CHECKED BY: SMD

SECOND FLOOR PLUMBING PLAN

PL102



KEYED NOTES

1. THERMOSTATIC MIXING VALVE SUPPLIED BY OWNER AND INSTALLED BY MECHANICAL CONTRACTOR. PROVIDE SPRING LOADED CHECK VALVES IN DROP. PROVIDE POLISHED CHROME FITTINGS IN EXPOSED LOCATION AS REQUIRED.
2. 1 1/4" DOMESTIC HOT WATER, AND 3/4" HOT WATER RECIRC UP TO WATER HEATER ON SECOND FLOOR.
3. 1 1/4" 2LB NATURAL GAS UP TO SECOND FLOOR.
4. 1 1/4" HEATING WATER SUPPLY AND RETURN UP TO SECOND FLOOR.
5. 3/4" DOMESTIC COLD WATER UP TO SECOND FLOOR.
6. 1/2" DOMESTIC HOT WATER UP TO SECOND FLOOR.
7. PROVIDE GALVANIZED SHEET METAL SAFETY PAN UNDER 2" WASTE.
8. COMBINATION WASTE AND VENT.
9. ROUTE 3/4" CONDENSATE DRAIN TIGHT TO WALL.
10. ROUTE UTILITIES 5 FEET OUTSIDE OF BUILDING.
11. 1" HWS AND 1" HWR PIPE UP.

GENERAL NOTES

A. TERMINATE DSN'S 18" ABOVE GRADE OR ROOF.

P1 FIRST FLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"

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COOPER ROBERTS SIMONSEN ARCHITECTURE
crsa
700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

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ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
sdeakins@cea-ut.com

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SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

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Phone: (801) 322-2400 / Fax: (801) 322-2416

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DRAWN BY: JLW
CHECKED BY: SMD

FIRST FLOOR PLUMBING PLAN

PL101

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EXPANSION TANK SCHEDULE (ET)

PLAN CODE	SYSTEM SERVED	WATER TEMP. (°F)	% GLYCOL	TANK VOL. (GAL)	ACCEPTANCE VOL. (GAL)	PRE-CHARGE (PSI)	MAX. DIMENSIONS DIA. (IN.)	MAX. DIMENSIONS H (IN.)	MAX. DIMENSIONS OPERATING WT. (LBS)	MANUFACTURER & MODEL NO.	REMARKS
ET-1	HEATING WATER	180	30%	62	34	25	22	44	140	AMTROL EXTROL SX 110V	–
ET-2	DOMESTIC HOT WATER	140	NA	10.3	NA	65	15	19	75	AMTROL THERMEXTROL ST 25V	DOMESTIC WATER UNPATIBLE LINER

AIR HANDLING UNIT SCHEDULE (AH)

PLAN CODE	AREA SERVED	SUPPLY FAN TYPE	DIA.	CLASS	CFM (ELEV)	TSP (S.L.)	BHP	MOTOR EFF. (MIN)	H.P.	RPM	VOLTAGE & PHASE	SPEED CONTROL	HEATING COIL MBH	TOTAL GPM	% P.G.	WPD (FT.)	EWT/LWT (°F)	EAT/LAT (°F)	ROWS FPI	AIR P.D. (IN.MAX)	COIL SIZE	FACE VELOCITY FPM
AH-1	ADMIN	PLUG	28	II	17,500	3.21	15.82	91.0	20	1,782	460/3ø	VFD	438.5	17.2	30%	0.6	180°/126°	30°/55°	1/8	0.06	59.5 X 84	522
AH-2	AS/RS	PLUG	20	II	7,500	3.10	6.97	89.5	7.5	2,487	460/3ø	N/A	196	7.4	30%	0.7	180°/125°	40°/69°	1/8	0.07	39.5 X 62	444

PLAN CODE	COOLING COIL MBH SEN.	MBH TOTAL	SST	TUBE	REFRIGERANT	EAT (db/wbT)	LAT (db/wbT)	AIR P.D. (IN.MAX)	ROWS FPI	COIL SIZE	FACE VELOCITY FPM	FILTER MAX. VELOCITY FPM	% EFF.	TYPE	OPERATING WEIGHT (LBS)	REMARKS
AH-1	525	583	45°	1/2" B0X	R22	84.0/62.0	50.4/48.6	0.34	6/8	59.5 84	522	500	30%	4" PLEATED	3,610	2 CURCUIT, INTERTWINED COIL. ROW SPLIT COIL SHALL NOT BE PROVIDED.
AH-2	171.7	235.4	40°	5/8" C0X	R22	67.4/56	42.5/42.2	0.48	6/8	39.5 62	444	500	30%	4" PLEATED	2,334	– –

ELECTRIC WATER HEATER SCHEDULE (WH)

PLAN CODE	INPUT (KW)	CAP. (GAL)	RECOVERY RATE (GPH)	TEMP. RISE (°F)	MAX. DIMENSIONS DIAMETER (IN)	MAX. DIMENSIONS HEIGHT (IN)	VOLTAGE & PHASE	MANUFACTURER & MODEL NO.	ACCESSORIES/COMMENTS
WH-1	3	80	41	60	24	60	480/3	A. O. SMITH DEN-80	–

AIR SEPARATOR (AS)

PLAN CODE	SYSTEM SERVED	CONNECTION SIZE	MAX. GPM *	P.D. (FT)	MAX. DIMENSIONS DIA. (IN.)	MAX. DIMENSIONS H (IN.)	MAX. DIMENSIONS FLANGE TO FLANGE (IN.)	DRY WT (LBS)	MAX. OPER. WT. (LBS.)	MANUFACTURER ** & MODEL NO.
AS-1	HEATING WATER	2"	35	.5	6.3	18.5	15.3	31	45	SPIROVENT SENIOR

* MAXIMUM TEMPERATURE = 270° F @ 145 PSIG
** S.L.C. REPRESENTATIVE IS LUNDQUIST SALES – 487-5709

AIR COOLED CONDENSING UNIT SCHEDULE (ACCU)

PLAN CODE	SYSTEM SERVED	NET COOLING TONS	SUCTION TEMP. °F	AMBIENT TEMP. , °F	ALTITUDE FT	COMPRESSOR TYPE	COMPRESSOR NO.	COMPRESSOR CAPACITY STEPS	CIRCUITS	CONDENSOR FANS NO.	CONDENSOR FANS H.P.	ELECTRICAL VOLTAGE & PHASE	ELECTRICAL MCA	ELECTRICAL CIRCUIT BREAKER MAX/MIN	MANUFACTURER & MODEL NO.	MAX. DIMENSIONS LENGTH (IN.)	MAX. DIMENSIONS WIDTH (IN.)	MAX. DIMENSIONS HEIGHT (IN.) *	OPERATING WT. (LBS.)	PUMP DOWN (GAL.)	REMARKS
ACCU-1	ADMIN	49.3	43	95	4,500	SCROLL	4	4	2	4	2	460/3ø	109	125/125	YORK YORK YCUL0056EC46	119	81	99	4,057		SINGLE POINT ELECTICAL CONNECTION AND "FACTORY" DISCONNECTED R22 REFRIGERANT
ACCU-2	AS/RS	18.1	38	95	4,500	SCROLL	2	2	1	2	2	460/3ø	46	60/50	YORK YCUL0026EC46	106	52	78	2058		SINGLE POINT ELECTICAL CONNECTION AND "FACTORY" DISCONNECTED R22 REFRIGERANT

NOTE: *HEIGHT INCLUDES 9" VIBRATION FOR 2" DEFLECTION VIBRATION SPRINGS.

MOTOR EFFICIENCY

	MINIMUM NOMINAL FULL-LOAD EFFICIENCY (%) OPEN MOTORS (ODP)			ENCLOSED MOTORS (TEFC)		
NUMBER OF POLES ==>	2	4	6	2	4	6
SYNCHRONOUS SPEED (RPM) ==>	3600	1800	1200	3600	1800	1200
MOTOR HP						
1	–	82.5	80.0	75.5	82.5	80.0
1.5	82.5	84.0	84.0	82.5	84.0	85.5
2	84.0	84.0	85.5	84.0	84.0	86.5
3	84.0	86.5	86.5	85.5	87.5	87.5
5	85.5	87.5	87.5	87.5	87.5	87.5
7.5	87.5	88.5	88.5	88.5	89.5	89.5
10	88.5	89.5	90.2	89.5	89.5	89.5
15	89.5	91.0	90.2	90.2	91.0	90.2
20	90.2	91.0	91.0	90.2	91.0	90.2
25	91.0	91.7	91.7	91.0	92.4	91.7
30	91.0	92.4	92.4	91.0	92.4	91.7
40	91.7	93.0	93.0	91.7	93.0	93.0
50	92.4	93.0	93.0	92.4	93.0	93.0
60	93.0	93.6	93.6	93.0	93.6	93.6
75	93.0	94.1	93.6	93.0	94.1	93.6
100	93.0	94.5 94.1	94.1	93.6	94.5	94.1
125	93.6		94.1	94.5	94.5	94.1
200 150	94.5 93.6	95.0 95.0	94.5 94.5	95.0 94.5	95.0 95.0	95.0 95.0

* ASHRAE STANDARD 90.1–999, TABLE 10.2 – MINIMUM NOMINAL EFFICIENCY FOR GENERAL PURPOSE DESIGN A AND DESIGN B MOTORS**
** NOMINAL EFFICIENCIES SHALL BE ESTABLISHED IN ACCORDANCE WITH NEMA STANDARD MG1.

AIR DEVICE SCHEDULE

PLAN CODE — GRILLE — CFM

PLAN CODE	TYPE & DUTY	FACE SIZE	NECK SIZE	CEILING TYPE	MAX. CFM	MAX. T.P. (IN. W.C.) *	N.C. LEVEL MAX	MANUFACTURER & MODEL NO.	REMARKS
9	PERFORATED RETURN	24" X 24"	22" X 22"	GRID	1200	0.05	17	TITUS PXP	–
10	PERFORATED RETURN	24" X 12"	22"X 10"	GRID	600	0.06	10	TITUS PXP	–
13	PERFORATED EXHAUST GRILLE	8" X 8"	6" X 6"	MATCH CEILING	120	0.12	10	TITUS 8F	–
14	PERFORATED EXHAUST GRILLE	10" X 10"	8" X 8"	MATCH CEILING	225	0.12	12	TITUS 8F	–
15	PERFORATED EXHAUST GRILLE	12" X 12"	10" X 10"	MATCH CEILING	360	0.12	14	TITUS 8F	–
16	PERFORATED EXHAUST GRILLE	14" x 14"	12" X 12"	MATCH CEILING	550	0.12	16	TITUS 8F	–
17	PERFORATED EXHAUST GRILLE	16" X 16"	14" x 14"	MATCH CEILING	750	0.12	17	TITUS 8F	–
18	PERFORATED EXHAUST GRILLE	20" X 20"	18" X 18"	MATCH CEILING	1250	0.12	19	TITUS 8F	–
24	RADIAL BLADE DIFFUSER	21"ø	14"ø	SURFACE	640	0.14	30	AIR DIFFUSION PRODUCTS, INC. DNR	–
26	RADIAL BLADE DIFFUSER	24" X 24"	8"ø	GRID	210	0.14	29	AIR DIFFUSION PRODUCTS, INC. DNR	–
27	RADIAL BLADE DIFFUSER	24" X 24"	10"ø	GRID	330	0.14	29	AIR DIFFUSION PRODUCTS, INC. DNR	–
28	RADIAL BLADE DIFFUSER	24" X 24"	12"ø	GRID	470	0.14	30	AIR DIFFUSION PRODUCTS, INC. DNR	–
29	RADIAL BLADE DIFFUSER	24" X 24"	14"ø	GRID	640	0.14	30	AIR DIFFUSION PRODUCTS, INC. DNR	–
31	PERFORATED STAR PATTERN	24" X 24"	6"ø	MATCH CEILING	170	0.13	34	TITUS PSS-AA	–
91	DRUM LOUVER	6" X 30"	31" X 13"	DUCT	1900	0.16	35	TITUS DL 30X12	–

COPPER FIN BOILER SCHEDULE (B)

PLAN CODE	MBH CAPACITY OUTPUT @ 4500 FT. *	MBH CAPACITY OUTPUT @ SEA LEVEL	MBH CAPACITY INPUT @ SEA LEVEL	ASME PRESS. RATING	OPERATING PRESSURE	EFFICIENCY %	FLUE TYPE	FLUE SIZE	FLUID	GPM	PRESS. DROP (FT.HD.)	MAX. SIZE LENGTH (IN)	MAX. SIZE WDTH (IN)	MAX. SIZE HEIGHT (IN)	MAX. SIZE OPERATING WT.(LBS)	BURNER HP	BURNER VOLTAGE & PHASE	BURNER GAS PRESSURE	MAKE & MODEL	REMARKS
B-1	425	531	625	125	60 PSI	85	TYPE B	8"	30% PG	25	1.1	56	30	36	600	1/4	120/1ø	4 OZ	TELEDYNE LAARS MIGHTY MAX HH0625M	–
B-2	425	531	625	125	60 PSI	85	TYPE B	8"	30% PG	25	1.1	56	30	36	600	1/4	120/1ø	4 OZ	TELEDYNE LAARS MIGHTY MAX HH0625M	–

DX COMPUTER ROOM AIR CONDITIONING SYSTEM (CRAC)

PLAN CODE	NOMINAL TONS	TOTAL CAP. (BTUH) *	AMBIENT DB (°F)	EVAPORATOR FAN AIR FLOW (CFM)	INSIDE UNIT ELECTRICAL DATA FLA	MIN AMP	MFCB	VOLT/ PH	MANUFACTURER & MODEL NO.	AIR COOLED CONDENSER RLA	MIN AMP	MFCB	VOLT/ PH	MANUFACTURER & MODEL NO.	MAX. DIMENSIONS INSIDE UNIT L x W x H	INSIDE UNIT WT.	OUTSIDE UNIT L x W x H	OUTSIDE UNIT WT.	REMARKS
CRAC-1	1.5	18,500	95	480	0.7	1	15	115/1	MITSUBISHI PK18FL	12	16	20	208/1	MITSUBISHI PU18EK	55"x9.25"x13.5"	53	34.25"x11.5"x33.5"	154	WITH FACTORY CONDENSATE PUMP LOW AMBIENT DOWN TO 0°
CRAC-2	1.5	18,500	95	480	0.7	1	15	115/1	MITSUBISHI PK18FL	12	16	20	208/1	MITSUBISHI PU18EK	55"x9.25"x13.5"	53	34.25"x11.5"x33.5"	154	WITH FACTORY CONDENSATE PUMP LOW AMBIENT DOWN TO 0°
CRAC-3	2.8	34,200	95	700	1.0	2	15	115/1	MITSUBISHI PK36FL	17.5	22	30	208/1	MITSUBISHI PU36EK	66" x 9" x 14"	62	38" x 14" x 49"	220	WITH FACTORY CONDENSATE PUMP LOW AMBIENT DOWN TO 0°

* 75° DB, 50% RH, ALTITUDE CORRECTED.

FAN SCHEDULE (F) (RF) (EF)

PLAN CODE	AREA SERVED	TYPE	CFM @ ELEV.	ESP (@ ELEV.)	FAN RPM	MOTOR B.H.P.	MOTOR H.P.	MOTOR EFFICIENY %	MOTOR VOLTAGE & PHASE	SONES	DAMPER (GRAVITY OR MOTOR)	METHOD OF CONTROL	OPENING SIZE	MAX. OPERATING WT. (LBS.)	MANUFACTURER / MODEL	REMARKS
EF-1	TOILET ROOM	ROOF CENTRIFUGAL	650	.5	1,621	0.167	.25	48	120/1	9.5	GRAVITY	ATC	13.5 X 13.5	75	COOK 100 ACEB	WITH FACTORY CURB
EF-2	LAB	ROOF CENTRIFUGAL	1,300	.5	1516	0.213	.25	48	120/1	11.3	GRAVITY	ATC	15.5 X 15.5	95	COOK 120 ACEB	WITH FACTORY CURB
EF-3	ELECT 122	ROOF CENTRIFUGAL	1,200	.25	768	0.084	.25	56	120/1	4.8	GRAVITY	ATC	19.5 X 19.5	110	COOK 150 ACEB	WITH FACTORY CURB
EF-4	ELECT 224	ROOF CENTRIFUGAL	1,000	.25	867	0.071	.25	55	120/1	4.9	GRAVITY	ATC	15.5 X 15.5	95	COOK 135 ACEB	WITH FACTORY CURB
RF-1	BLDG RELIEF	ROOF CENTRIFUGAL	14,500	.25	249	1.26	1.5	45	460/3	8.6	GRAVITY	VFD	48 X 48	780	COOK 490 TLC-B	WITH FACTORY CURB
RF-2	AS/RS RELIEF	WALL PROPELLER	6,000	.5	1,140	1.4	1.5	39	460/3	39	MOTOR	VFD	36 X 36	250	COOK AWA 30A11AB	"BLOW OUT" CONFIGURATION WITH SAFTEY SCREEN ON INLET.
F-1	MINIMUM OUTSIDE AIR	WALL PROPELLER	4480	.125	1,725	.48	.5	15	460/3	25	GRAVITY	VARIABLE SPEED	24 X 24	110	COOK AWD 20A17DB	WITH VARIABLE SPEED CONTROLLER & SAFETY SCREEN ON OUTLET

VAV REHEAT

PLAN CODE — FLOOR — BOX NO. — MAX. COOLING CFM — MAX. HEATING CFM — MIN. COOLING CFM

PLAN CODE	INLET SIZE (IN.)	DESIGN INLET S.P. (IN WC)	MAX. COOLING CFM	MAX. N.C.	MIN. INLET S.P. (IN WC)	MIN. CONTROL CFM	HW COIL E.A.T. (°F)	HW COIL MIN. LAT(°F)	HW COIL MAX. HEATING CFM	HW COIL ROWS	HW COIL MAX. G.P.M. @ 180 °F	HW COIL MAX. W.P.D. (FT)	HW COIL COIL M.B.H.
6R1	6	1.0	500	33	0.38	80	55	88	360	1	1.8	1.5	10.8
6R2	6	1.0	500	31	0.53	80	55	88	500	2	0.6	0.1	15.0
8R1	8	1.0	900	31	0.33	150	55	88	450	1	1.6	1.7	13.5
8R2	8	1.0	800	29	0.48	150	55	88	800	2	0.9	0.3	24.0
10R2	10	1.0	1400	31	0.63	230	55	88	1400	2	1.3	0.6	36.0
12R2	12	1.0	1600	32	0.46	325	55	88	1600	2	1.7	0.6	48.0
14R2	14	1.0	2500	32	0.57	450	55	88	2500	2	2.1	0.8	68.0

PERFORMANCE AT 4500 FT. ELEVATION.

DESTRATIFICATION FAN SCHEDULE (DF)

PLAN CODE	AREA SERVED	TYPE	CFM @ ELEV.	FAN RPM	ELECTRICAL WATTS	ELECTRICAL AMPS	ELECTRICAL VOLTAGE & PHASE	METHOD OF CONTROL	OPERATING WT. (LBS.)	MANUFACTURER & MODEL #	REMARKS
DF-1 TO DF-4	AS/RS	60" CEILING	41,000	280	160	1.15	120/1ø	LINE SWITCH	34	DAYTON 4F426	W/ SECONDARY SUPPORT CABLE, WHITE IPCOKOTE EPOXY PAINT FINISH –
DF-5 TO DF-6	LOBBY	48" CEILING	21,000	315	185	0.17	120/1ø	LINE SWITCH	34	DAYTON 4C853	W/ ELECTRONIC SPEED CONTROLLER 1 CONTROLLER/ 2 FANS

PUMP SCHEDULE (P)

PLAN CODE	DUTY	GPM	FEET OF HEAD	PUMP RPM	% EFF. MIN.	% GLYCOL	MOTOR B.H.P.	MOTOR H.P.	MOTOR EFF. %	MOTOR VOLTAGE & PHASE	MANUFACTURER & MODEL NO.	REMARKS
P-1	HEATING WATER LEAD/LAG	50	45	1750	52	30	1.2	1.5	82.5	460/3	BELL & GOSSETT SERIES 60 1 1/2 X 1 1/2 X 7	–
P-2	HEATING WATER LEAD/LAG	50	45	1750	52	30	1.2	1.5	82.5	460/3	BELL & GOSSETT SERIES 60 1 1/2 X 1 1/2 X 7	–
CP-3	DOMESTIC HOT WATER RECIRC.	5	10	1750	NA	NONE	NA	1/25	NA	120/1	GRUNDFOS UP-15-42B5	–

UNIT VENTILATOR (UV)

PLAN CODE	NOMINAL TONS	TOTAL CAP. (BTUH) *	AMBIENT DB (°F)	EVAPORATOR FAN AIR FLOW (CFM)	INSIDE UNIT ELECTRICAL DATA FLA	VOLT/ PH	HEATING COIL MBH	TOTAL GPM	WPD (FT.)	EWT/LWT (°F)	EAT/LAT (°F)	ROWS FPI	MANUFACTURER & MODEL NO.	AIR COOLED CONDENSER ELECTRICAL RLA	MCA	MOCP	VOLT/ PH	MANUFACTURER & MODEL NO.	MAX. DIMENSIONS INSIDE UNIT L x W x H	INSIDE UNIT WT.	OUTSIDE UNIT L x W x H	OUTSIDE UNIT WT.	REMARKS
UV-1	3	29.4	95	1250	4.3	208/1	84.1	8	8.6	180°/160°	50°/105°	2/8	CARRIER 40UH125	17.9	23.1	40	208/1	CARRIER 38HDC036	88"x40"x16.625"	495	36"x18"x26"	179	COLOR SHALL BE SELECTED BY ARCHITECT.

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COOPER ROBERTS SIMONSEN ARCHITECTURE
crsa
700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
sdeakins@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

Colvin Engineering Associates, Inc.
244 West 300 North Suite 200
Salt Lake City, Utah 84103
Phone (801) 322-2400 / Fax (801) 322-2416

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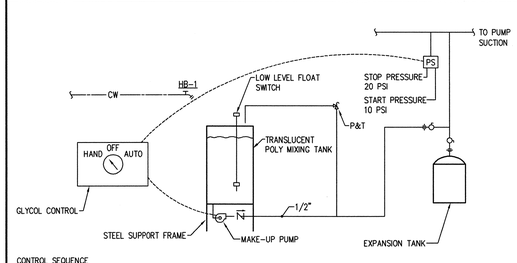
PROJECT NO: 2003-039.00
CAD DWG FILE: MH601.dwg
DRAWN BY: JLW
CHECKED BY: SMD

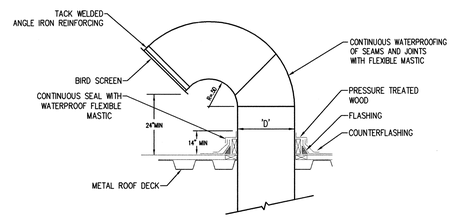
MECHANICAL SCHEDULE

MH601

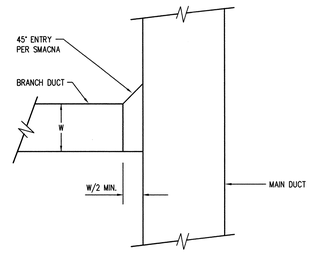


CONTROL SEQUENCE
HAND MODE: START AND RUN PUMP
OFF MODE: STOP PUMP
AUTOMATIC MODE: START AND STOP PUMP TO SATISFY PRESSURE SWITCH
ALARM MODE: REPORT LOW GLYCOL TANK LEVEL ALARM TO BUILDING AUTOMATION SYSTEM

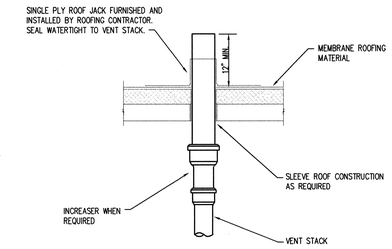
1 MH502 GLYCOL MAKE-UP SYSTEM DETAIL
NO SCALE 15548_GlycolMakeup-02



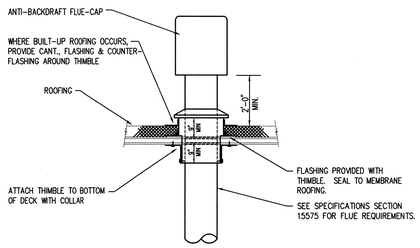
2 MH502 GOOSE NECK WITH BIRD SCREEN
NO SCALE



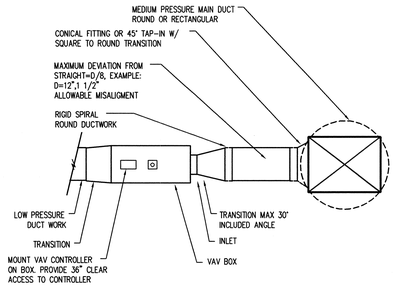
3 MH502 TYPICAL DUCT TAKEOFF DETAIL
NO SCALE 15900-07



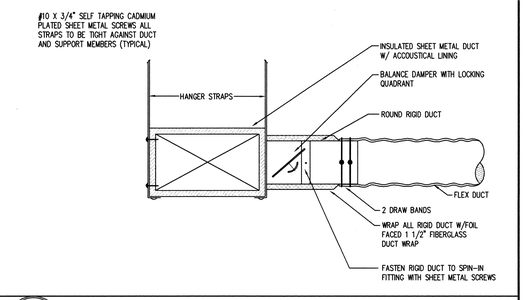
4 MH502 VENT THROUGH ROOF DETAIL
NO SCALE 15410-15



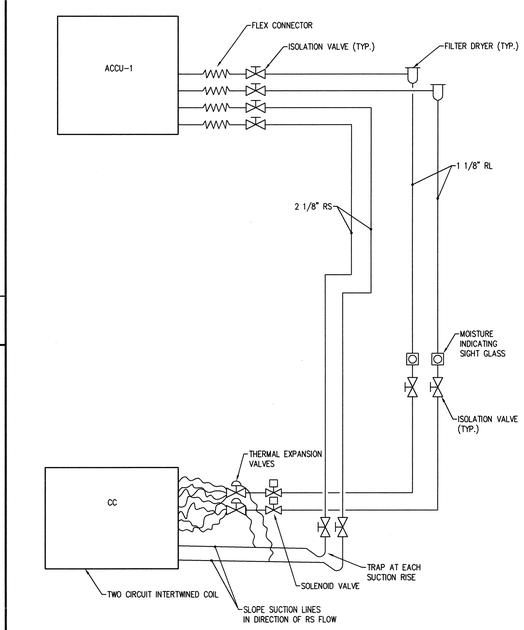
5 MH502 BOILER FLUE ROOF PENETRATION DETAIL
NO SCALE 15575-01



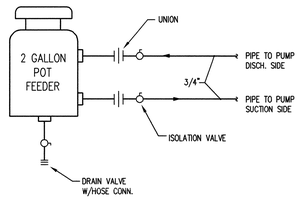
6 MH502 TYPICAL MEDIUM PRESSURE TAKE-OFF VAV/FPB DETAIL
NO SCALE 15900-26



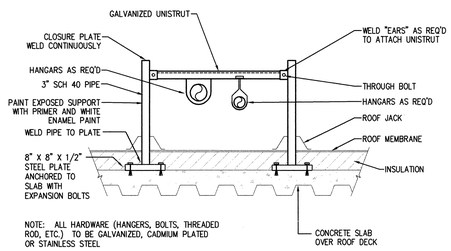
7 MH502 FLEX DUCT/SPIN-IN FITTING DETAIL
NO SCALE 15880-03



12 MH502 REFRIGERANT LIQUID & SUCTION LINES SCHEMATIC
NO SCALE

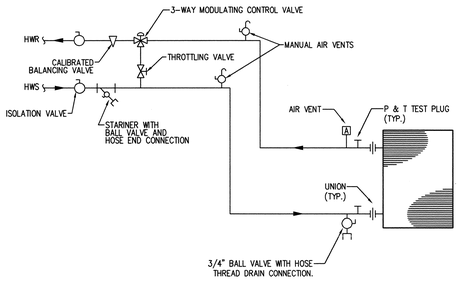


9 MH502 CHEMICAL POT FEEDER PIPING DETAIL
NO SCALE 15505-19



NOTE: ALL HARDWARE (HANGERS, BOLTS, THREADED ROD, ETC.) TO BE GALVANIZED, CADMIUM PLATED OR STAINLESS STEEL

10 MH502 PIPE SUPPORT DETAIL
NO SCALE 15050-31



11 MH502 COIL PIPING SCHEMATIC (3-WAY VALVE)
NO SCALE 15750_COILPIPING3WAY

13 MH502 NO SCALE

14 MH502 NO SCALE

15 MH502 NO SCALE

16 MH502 NO SCALE

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COOPER ROBERTS SIMONSEN ARCHITECTURE
crsa
700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
sdeakins@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
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3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

Colvin Engineering Associates, Inc.
244 West 300 North Suite 200
Salt Lake City, Utah 84103
Phone (801) 322-2400 / Fax (801) 322-2416

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PROJECT NO: 2003-039.00
CAD DWG FILE: MH502.dwg
DRAWN BY: JLW
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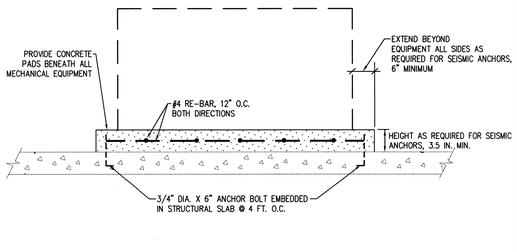
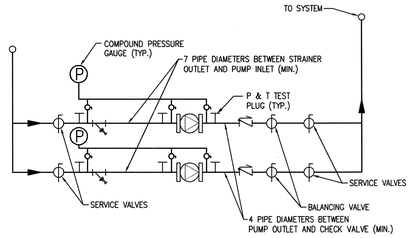
MECHANICAL DETAILS

MH502



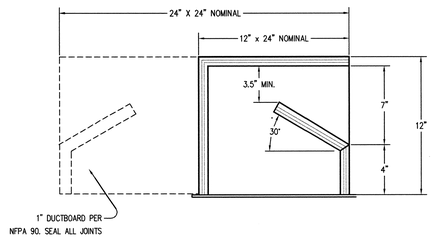
1 MH501 HOUSEKEEPING PAD DETAIL

NO SCALE 15050_HousekeepingPad



2 MH501 PARALLEL INLINE PUMP PIPING DETAIL

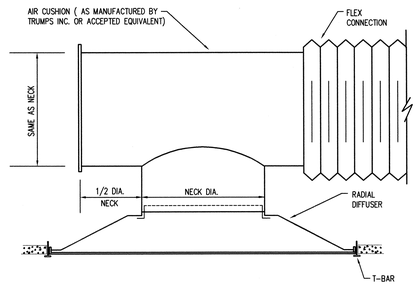
NO SCALE



TYPICAL OF ALL RETURN AIR GRILLES

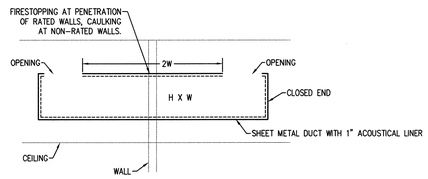
3 MH501 RETURN AIR GRILLE DUCTBOARD SOUND BOOT DETAIL

NO SCALE 15900_ReturnGrilleBootDuctBoard



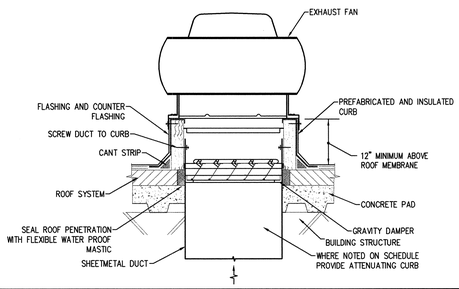
4 MH501 DIFFUSER AIR CUSHION DETAIL

NO SCALE 15936-05



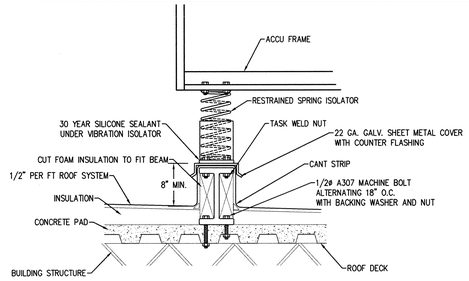
5 MH501 TRANSFER AIR DUCT (PLENUM/PLENUM)

NO SCALE 15900_TransferPlenum_Plenum



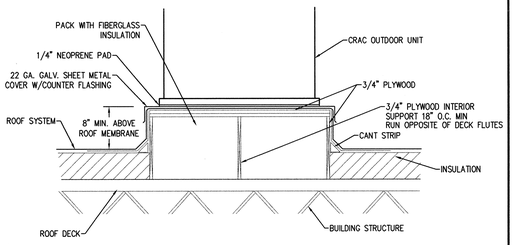
6 MH501 EXHAUST FAN AND CURB DETAIL

NO SCALE



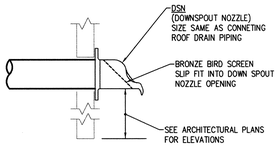
7 MH501 ACCU MOUNTING DETAIL

NO SCALE



8 MH501 EQUIPMENT SUPPORT DETAIL

NO SCALE 15050_EquipRoofSupport

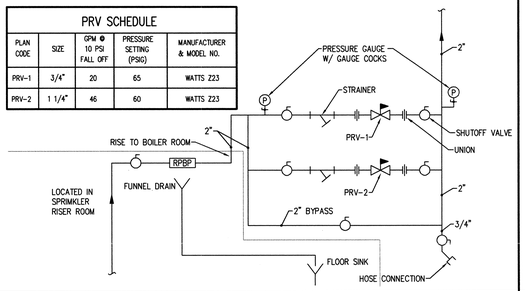


9 MH501 DOWNSPOUT NOZZLE DETAIL

NO SCALE 15410-16

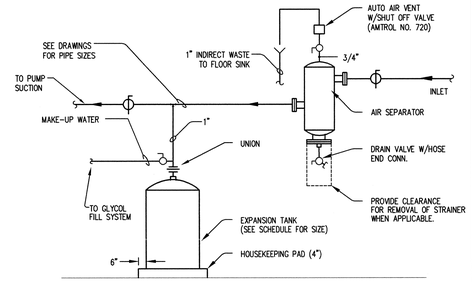
PRV SCHEDULE

PLAN CODE	SIZE	GPM @ 10 PSI FALL OFF	PRESSURE SETTING (PSIG)	MANUFACTURER & MODEL NO.
PRV-1	3/4"	20	65	WATTS Z23
PRV-2	1 1/4"	46	60	WATTS Z23



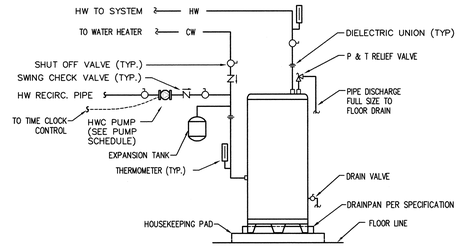
10 MH501 PRV STATION DETAIL

NO SCALE 15430_PRV



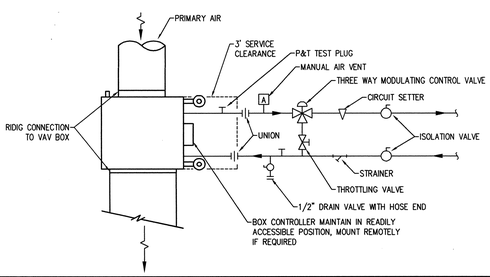
11 MH501 AIR SEPARATOR/EXPANSION TANK PIPING DIAGRAM

NO SCALE 15505-20



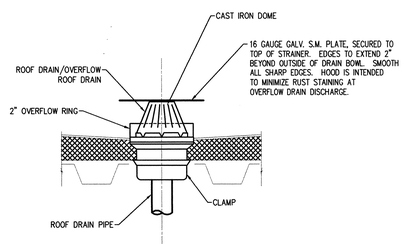
12 MH501 ELECTRIC WATER HEATER PIPING DETAIL

NO SCALE 15450_WaterHeater-Elect



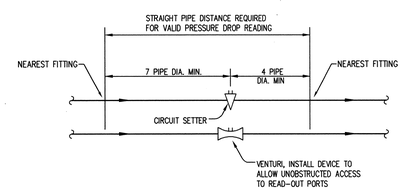
13 MH501 VAV FAN AND REHEAT TERMINAL PIPING DETAIL

NO SCALE 15505-05



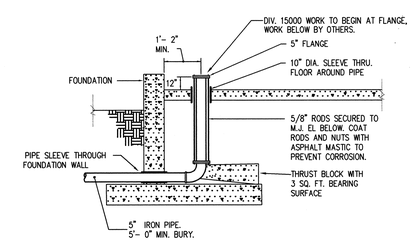
14 MH501 OVERFLOW ROOF DRAIN RAIN HOOD DETAIL

NO SCALE 15430_OverflowRD-RainHood



15 MH501 CIRCUIT SETTER/VENTURI INSTALLATION DETAIL

NO SCALE



16 MH501 WATER ENTRY DETAIL

NO SCALE

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crsa
700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
sdeakins@cea-ut.com

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175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
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SALT LAKE CITY, UT
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LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

Colvin Engineering Associates, Inc.
244 West 300 North Suite 200
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Phone: (801) 322-2400 / Fax: (801) 322-2416

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CAD DWG FILE: MH501.dwg
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MECHANICAL DETAILS

MH501

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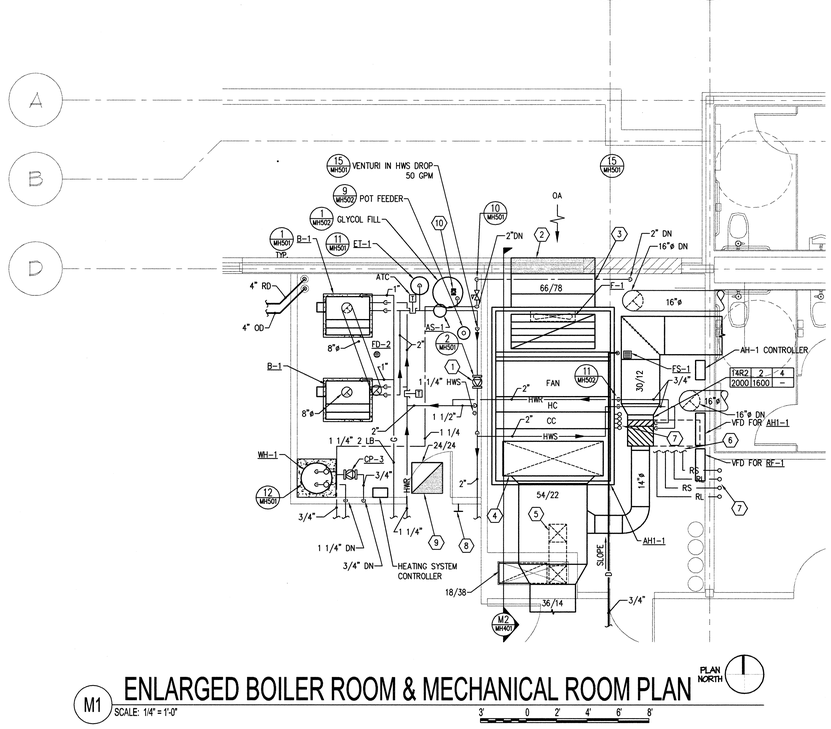
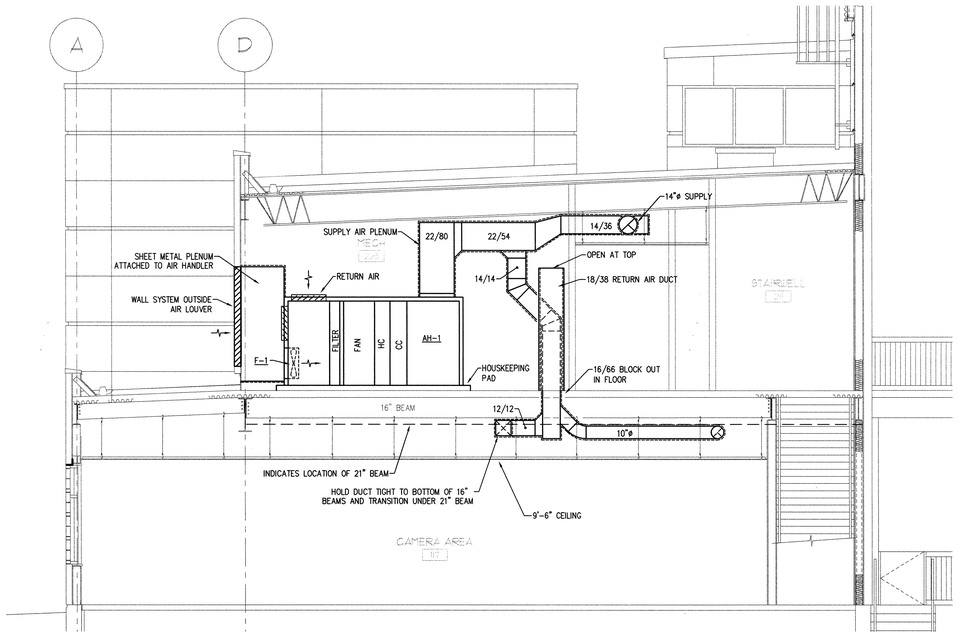


M1 ENLARGED BOILER ROOM & MECHANICAL ROOM PLAN

SCALE: 1/4" = 1'-0"

PLAN NORTH



M2 MECHANICAL ROOM SECTION

SCALE: 1/4" = 1'-0"

PLAN NORTH

KEYED NOTES

1. RACK P-1 OVER P-2 ON WALL.
2. LOUVER PROVIDED BY WALL PANEL CONTRACTOR. FREE AREA REQUIRED 18 SF. PROVIDE TRANSITION AND CONNECT TO LOUVER.
3. INSULATE OUTSIDE AIR DUCT. SHEET METAL PLENUM. CONNECT TO OUTSIDE AIR LOUVER AND AIR HANDLER. INSULATE OUTSIDE OF PLENUM.
4. 80X22 SHEET METAL PLENUM.
5. 14"X14" DUCT OFF BOTTOM OF SUPPLY AIR DUCT TO FIRST FLOOR.
6. CONNECT REFRIGERATION PIPING TO COOLING COIL.
7. PROVIDE REFRIGERATION TRAP AT ALL RS RISERS.
8. BOILER SHUT DOWN SWITCH.
9. COMBUSTION AIR DUCT. TERMINATE 12" BELOW ROOF DECK.
10. 3/4" CW DN TO GLYCOL SYSTEM

GENERAL NOTES

A. SEE HEATING SYSTEM FLOW/CONTROL DIAGRAM SHEET MH201. SEE AHU-1 FLOW/CONTROL DIAGRAM SHEET MH201.

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
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STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
sdeakins@cea-ut.com

ELECTRICAL ENGINEER
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SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
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SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

Colvin Engineering Associates, Inc.
244 West 300 North Suite 200
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Phone (801) 322-2400 / Fax (801) 322-2416

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CAD DWG FILE: MH401.dwg
DRAWN BY: JLW
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ENLARGED BOILER ROOM PLAN

MH401

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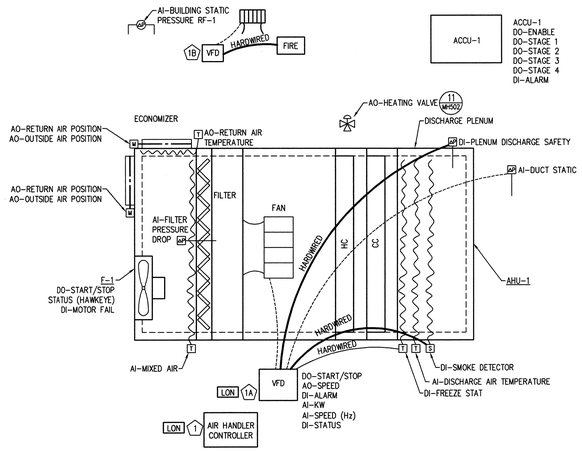


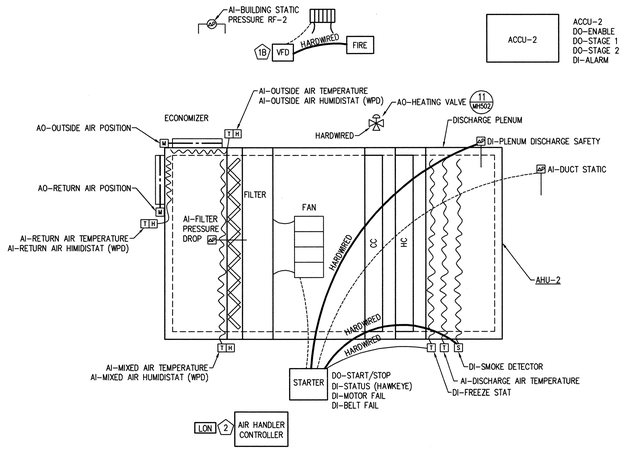
AHU-1 CONTROL NOTES

1 AHU-1 INTERFACE LONTALK NODE
CONTROL/DISPLAY/TREND POINTS
AO-OUTSIDE AIR DAMPER POSITION
AO-RETURN AIR DAMPER POSITION
AI-BUILDING OUTSIDE AIR TEMPERATURE
AI-MIXED AIR TEMPERATURE
AI-DISCHARGE AIR TEMPERATURE
AI-RETURN AIR TEMPERATURE
AO-SUPPLY FAN SPEED
AO-HEATING VALVE POSITION
DO-ACCU-1 ENABLE
DI-ACCU-1 ALARM
DO-ACCU-1 STAGE 1 COOLING
DO-ACCU-1 STAGE 2 COOLING
DO-ACCU-1 STAGE 3 COOLING
DO-ACCU-1 STAGE 4 COOLING
DO-F-1 (MINIMUM OUTSIDE AIR FAN) START/STOP
DI-F-1 MOTOR FAIL
AI-FILTER PRESSURE DROP

1A AHU-1 VFD INTERFACE LONTALK NODE
CONTROL/DISPLAY/TREND POINTS
DI-START/STOP
AI-DUCT STATIC PRESSURE SETPOINT
DO-ALARM
AO-KW
AO-SPEED (Hz)
AI-DUCT STATIC PRESSURE
DI-EMERGENCY SHUT-DOWN (HARD WIRED)
*PLENUM DISCHARGE SAFETY
*SMOKE DETECTOR
*FIRE ALARM
*FREEZE STAT

1B RF-1 AND RF-2 INTERFACE LONTAL NODES
DI-START/STOP
AI-STATIC PRESSURE SETPOINT
DO-ALARM
AI-KW
AI-SPEED (Hz)
AI-BUILDING STATIC PRESSURE
DI-EMERGENCY SHUT-DOWN (HARDWIRED)
*FIRE ALARM

M1 AHU-1
NO SCALE

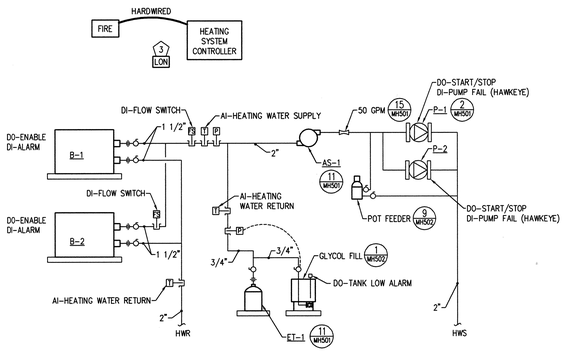


AHU-2 CONTROL NOTES

1B RF-1 AND RF-2 INTERFACE LONTAL NODES
DI-START/STOP
AI-STATIC PRESSURE SETPOINT
DO-ALARM
AI-KW
AI-SPEED (Hz)
AI-BUILDING STATIC PRESSURE
DI-EMERGENCY SHUT-DOWN (HARDWIRED)
*FIRE ALARM

2 AHU-2 INTERFACE LONTALK NODE
CONTROL/DISPLAY/TREND POINTS
DO-FAN START/STOP
DI-MOTOR FAIL
DI-BELT FAIL
DI-EMERGENCY SHUT-DOWN (HARD WIRED)
*SMOKE DETECTOR
*FIRE ALARM
*FREEZE STAT
AO-OUTSIDE AIR DAMPER POSITION
AO-RETURN AIR DAMPER POSITION
AI-OUTSIDE AIR TEMPERATURE
AI-OUTSIDE AIR HUMIDISTAT (WB)
AI-MIXED AIR TEMPERATURE
AI-MIXED AIR HUMIDISTAT (WB)
AI-RETURN AIR TEMPERATURE
AI-RETURN AIR HUMIDISTAT (WB)
AI-DISCHARGE AIR TEMPERATURE
AI-DISCHARGE AIR HUMIDISTAT (WB)
AO-HEATING VALVE POSITION
DO-ACCU-2 ENABLE
DO-STAGE 1 COOLING
DO-STAGE 2 COOLING
AI-FILTER PRESSURE DROP
DI-EMERGENCY SHUT-DOWN (HARDWIRED)

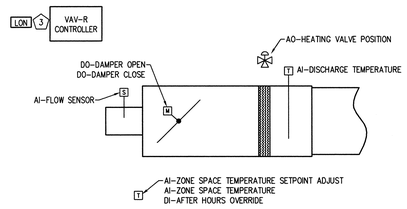
M2 AHU-2
NO SCALE



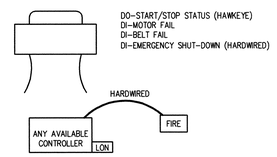
HEATING CONTROL NOTES

3 HEATING SYSTEM CONTROLLER LONTAL NODE
CONTROL/DISPLAY/TREND POINTS
AI-AIR FLOW SENSOR
DO-DAMPER OPEN
DO-DAMPER CLOSED
AO-HEATING VALVE POSITION
AI-DISCHARGE AIR TEMPERATURE
AI-ZONE SPACE TEMPERATURE SETPOINT ADJUST
AI-ZONE SPACE TEMPERATURE
DI-AFTER HOURS OVERRIDE

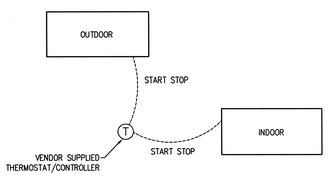
M3 HEATING SYSTEM
NO SCALE



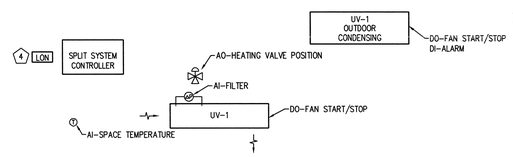
M4 VAV-R BOX
NO SCALE



M5 EXHAUST FAN (EF-1 THROUGH EF-4)
NO SCALE



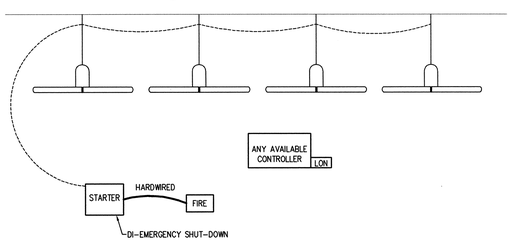
M6 CRAC UNITS
NO SCALE



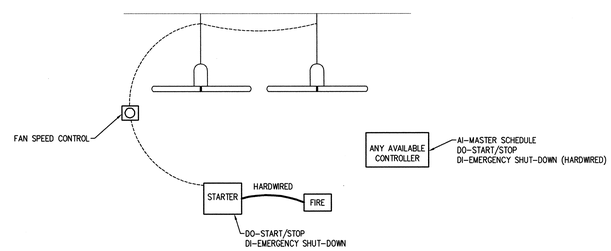
HEATING CONTROL NOTES

4 UNIT VENTILATOR CONTROLLER LONTAL NODE
DO-FAN START/STOP
AI-FILTER PRESSURE DROP
AO-HEATING WATER VALVE POSITION
DO-CONDENSING UNIT START/STOP
DI-CONDENSING UNIT ALARM
AI-SPACE TEMPERATURE
AI-SPACE TEMPERATURE SETPOINT MASTER SCHEDULE

M7 UNIT VENTILATOR
NO SCALE



M8 DESTRATIFICATION FANS (1-4)
NO SCALE



M9 DESTRATIFICATION FANS (5 & 6)
NO SCALE

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COOPER ROBERTS SIMONSEN ARCHITECTURE
crsa
700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
sdeakins@coa-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3968 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

Colvin Engineering Associates, Inc.
244 West 300 North Suite 200
Salt Lake City, Utah 84103
Phone: (801) 322-2400 / Fax: (801) 322-2416

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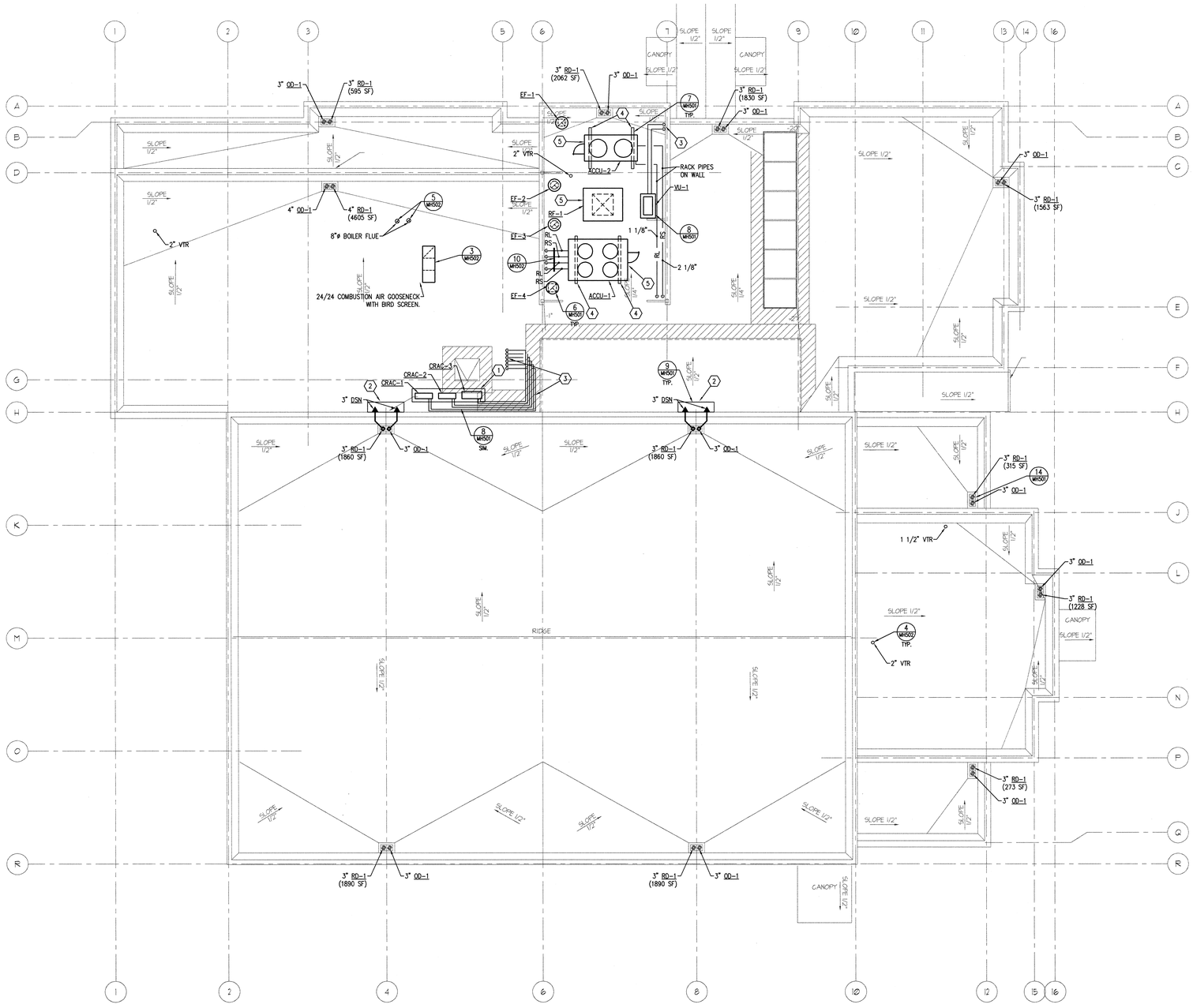
FLOW/CONTROL DIAGRAMS

MH201



KEYED NOTES

1. PROVIDE CONTINUOUS ROOF CURB.
2. PROVIDE CONCRETE SPLASH BLOCK.
3. FACTORY LINE SETS. RACK LINE SETS ON WALL.
4. W14X35 BEAM. EXTEND 6" BEYOND WIDTH OF UNIT ON BOTH SIDES.
5. CENTER EQUIPMENT BETWEEN ROOF JOISTS.

KEYED NOTES

A. INSTALL ALL EQUIPMENT TO ACCOMMODATE MANUFACTURES MINIMUM CLEARANCE REQUIREMENT.

M1 MECHANICAL ROOF PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH

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crsa
700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
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STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
sdeakins@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

Colvin Engineering Associates, Inc.
244 West 300 North Suite 200
Salt Lake City, Utah 84103
Phone- (801) 322-2400 / Fax- (801) 322-2416

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MECHANICAL ROOF PLAN

MH103

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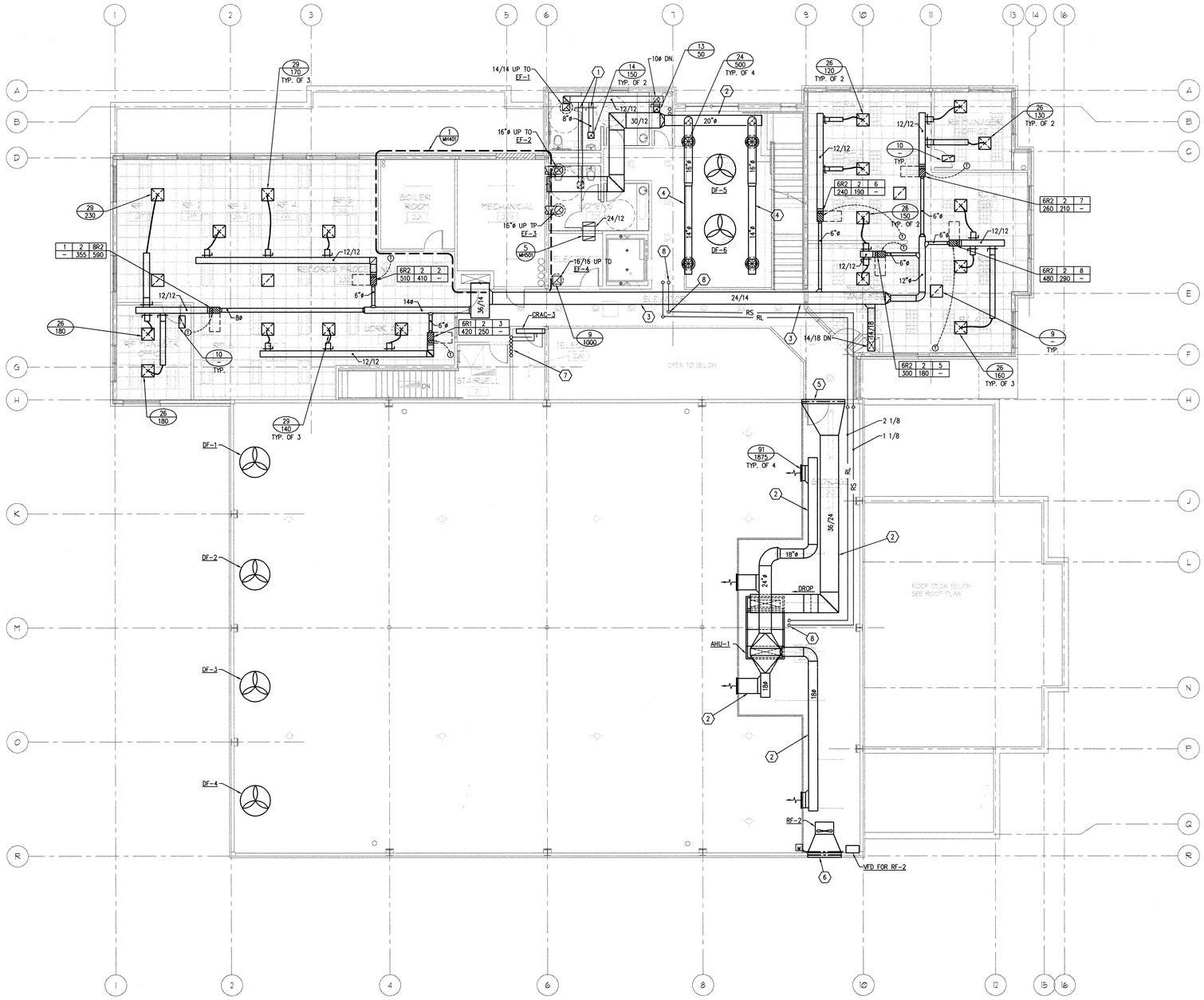

KEYED NOTES

1. PROVIDE MITERED GEAR BALANCING DAMPER.
2. INSTALL DUCT TIGHT TO BOTTOM OF STRUCTURE.
3. HOLD DUCT TIGHT TO NORTH WALL TO ALLOW FOR LIGHTING.
4. ROUTE DUCT IN STRUCTURAL SPACE.
5. LOUVER PROVIDED BY WALL PANEL CONTRACTOR. FREE AREA REQUIRED 7.5 SF. PROVIDE TRANSITION AND CONNECT TO LOUVER. PROVIDE SHEET METAL TRANSITION AS REQUIRED.
6. LOUVER PROVIDED BY WALL PANEL CONTRACTOR. FREE AREA REQUIRED 4.5 SF. PROVIDE TRANSITION AND CONNECT TO LOUVER. PROVIDE SHEET METAL TRANSITION AS REQUIRED.
7. FACTORY REFRIGERATION PIPING LINESETS TO ROOF. SIZED BY EQUIPMENT VENDOR INSTALL IN WALL.
8. PROVIDE REFRIGERATION TRAP AT RISE IN RS PIPE.

GENERAL NOTES

A. PROVIDE RETURN AIR SOUND BOOT OVER ALL PERFORATED RETURNS. SEE 3/MH501
B. PROVIDE AIR CUSHION AT ALL SUPPLY DIFFUSER CONNECTIONS. SEE 4/MH501
C. ALL EXPOSED DUCT SHALL BE INSTALLED "NEAT" AND "CLEAN" AND SHALL BE PREPARED FOR PAINTING. ALL EXPOSED RECTANGULAR DUCT SHALL BE LINED. MASK AROUND ALL JOINTS WHEN APPLYING SEALANT TO PROVIDE A "NEAT" AND "CLEAN" APPEARANCE.
D. SEE 5/MH501 FOR VAV-R BOX TAKEOFF FROM MAIN.
E. SEE 1/MH501 FOR "SPIN-IN" TAKE OFF.

M1 SECOND FLOOR MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH

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crsa
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SALT LAKE CITY,UTAH 84103
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STRUCTURAL ENGINEER
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310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
sdeakins@cea-ut.com

ELECTRICAL ENGINEER
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SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
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SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

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Phone (801) 322-2400 / Fax (801) 322-2416

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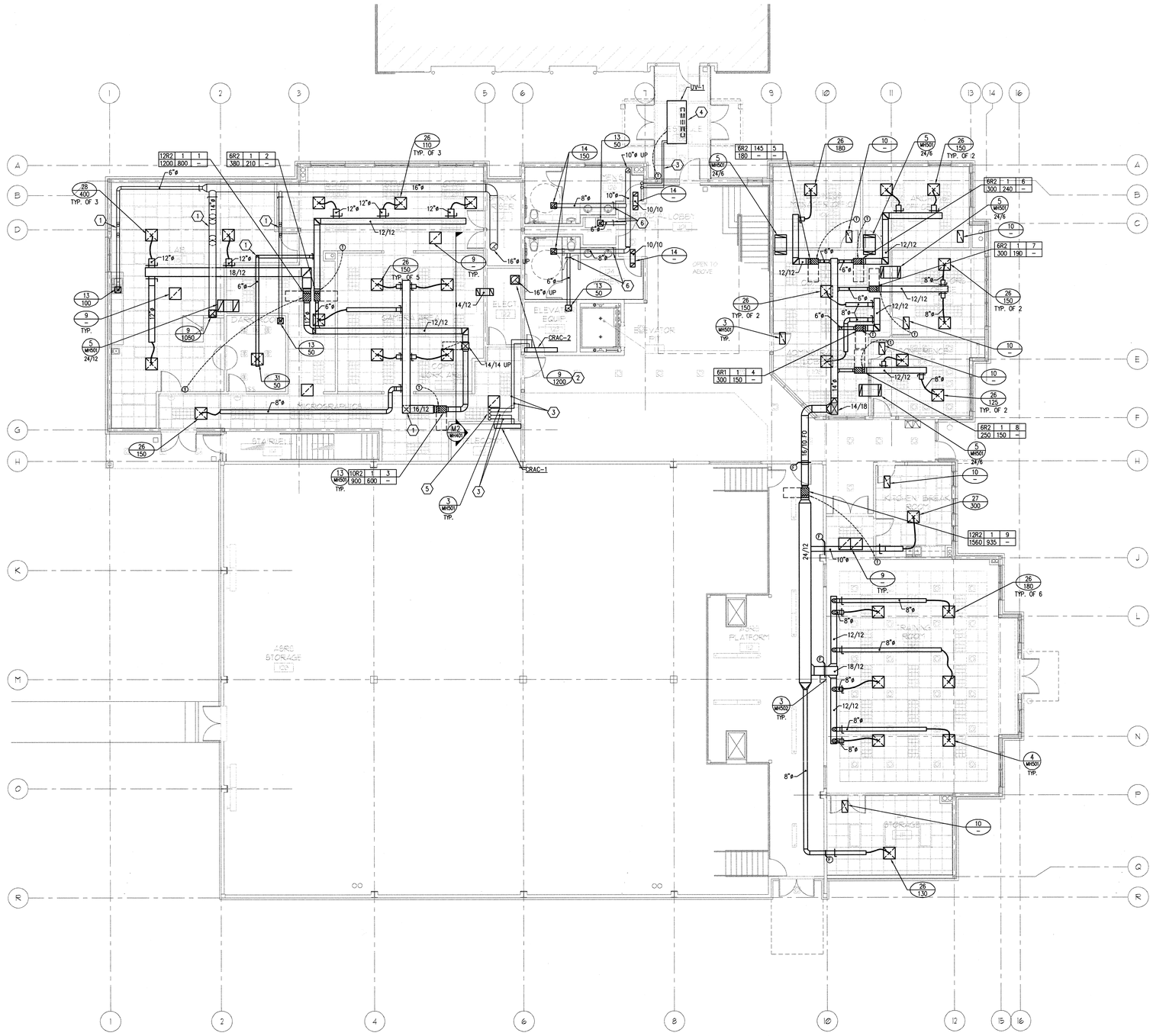
SECOND FLOOR MECHANICAL PLAN

MH102



KEYED NOTES

1. OFFSET DUCT UNDER BEAM AS REQUIRED.
2. PROVIDE PLENUM AND TRANSITION AS REQUIRED.
3. "FACTORY" LINE SET REFRIGERATION PIPING SIZED BY VENDOR.
4. INSTALL UNIT VENTILATOR AS HIGH AS POSSIBLE AND INSTALL UNIT SO THAT THE SUPPLY GRILLE IS IN THE CENTER OF THE LINK.
5. FACTORY LINE SETS UP TO ROOF.
6. PROVIDE MITERED GEAR BALANCING DAMPER.

GENERAL NOTES

A. PROVIDE RETURN AIR SOUND BOOT OVER ALL PERFORATED RETURNS. SEE 3/MH501

B. PROVIDE AIR CUSHION AT ALL SUPPLY DIFFUSER CONNECTIONS. SEE 4/MH501

C. ALL EXPOSED DUCT SHALL BE INSTALLED "NEAT" AND "CLEAN" AND SHALL BE PREPARED FOR PAINTING. ALL EXPOSED RECTANGULAR DUCT SHALL BE LINED. MASK AROUND ALL JOINTS WHEN APPLYING SEALANT TO PROVIDE A "NEAT" AND "CLEAN" APPEARANCE.

D. SEE 5/MH502 FOR VAV-R BOX TAKEOFF FROM MAIN.

E. SEE 7/MH502 FOR "SPIN-IN" TAKE OFF.

M1 FIRST FLOOR MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
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ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

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COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
sdeakins@cea-ut.com

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SALT LAKE CITY, UT
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SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

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BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

Colvin Engineering Associates, Inc.
244 West 300 North Suite 200
Salt Lake City, Utah 84103
Phone (801) 322-2400 / Fax: (801) 322-2416

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FIRST FLOOR MECHANICAL PLAN

MH101

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ABBREVIATIONS

ø	ROUND OR DIAMETER	MBH	THOUSAND BRITISH THERMAL UNITS/HOUR
AD	ACCESS DOOR	MECH	MECHANICAL
AF	AIRFOIL	MIN	MINIMUM
AFF	ABOVE FINISHED FLOOR	NC	NOISE CRITERIA OR NORMALLY CLOSED
ALT	ALTERNATE	NIC	NOT IN CONTRACT
BI	BACKWARD INCLINED	NO.	NUMBER
BOD	BOTTOM OF DUCT	NOM	NOMINAL
BOP	BOTTOM OF PIPE	NTS	NOT TO SCALE
BTU/H	BRITISH THERMAL UNITS PER HOUR	OA	OUTSIDE AIR
CAP.	CAPACITY	OBD	OPPOSED BLADE DAMPER
CFM	CUBIC FEET PER MINUTE	OD	OVERFLOW DRAIN
CV	CONSTANT VOLUME	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
DB	DRY BULB	OFOI	OWNER FURNISHED, OWNER INSTALLED
DIA	DIAMETER	PD	PRESSURE DROP
DSN	DOWN SPOUT NOZZLE	POC	POINT OF CONNECTION
DW	DISHWASHER	PRV	PRESSURE REDUCING VALVE
(E)	EXISTING	PSI	POUNDS PER SQUARE INCH
EAT	ENTERING AIR TEMPERATURE	PSIG	POUNDS PER SQUARE INCH GAUGE
EFF	EFFICIENCY	RA	RETURN AIR
ELEV	ELEVATION	RAD	RADIUS
ENCL	ENCLOSURE	RD	ROOF DRAIN
ESP	EXTERNAL STATIC PRESSURE	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
ET	EXPANSION TANK	SA	SUPPLY AIR
EWC	ELECTRIC WATER COOLER	SEN	SENSIBLE
EWT	ENTERING WATER TEMPERATURE	SIM	SIMILAR
FCO	FLOOR CLEANOUT	SL	SEA LEVEL
FD	FLOOR DRAIN	SP	STATIC PRESSURE
FPM	FEET PER MINUTE	SQ FT	SQUARE FEET
FS	FLOOR SINK	SS	SERVICE SINK OR STAINLESS STEEL
FT	FEET	TOD	TOP OF DUCT
FV	FACE VELOCITY	TSP	TOTAL STATIC PRESSURE
GA	GAUGE	U	URINAL
GAL	GALLON	VAV	VARIABLE AIR VOLUME
GD	GARAGE DRAIN	VD	VOLUME DAMPER
GPM	GALLONS PER MINUTE	VFD	VARIABLE FREQUENCY DRIVE
HP	HORSEPOWER	VOL	VOLUME
HR	HOUR	VTR	VENT THROUGH ROOF
HT	HEIGHT	W/	WITH
IN.	INCH	W/O	WITHOUT
INWC	INCHES OF WATER COLUMN	WB	WET BULB
INWG	INCHES OF WATER GAUGE	WC	WATER CLOSET
L	LAVATORY	MVD	MANUAL VOLUME DAMPER
LAT	LEAVING AIR TEMPERATURE	WCO	WALL CLEANOUT
LBS	POUNDS	WPD	WATER PRESSURE DROP
LWT	LEAVING WATER TEMPERATURE	WT	WEIGHT
MAX	MAXIMUM		

MECHANICAL LEGEND

NOTE: ALL ITEMS MAY NOT APPEAR ON DRAWINGS

GATE VALVE		SANITARY SEWER ABOVE GRADE	
OS & Y PATTERN GATE VALVE		SANITARY SEWER BELOW GRADE	
BALL VALVE		DRAIN	D
BUTTERFLY VALVE		ROOF DRAIN PIPING	RD
MOTORIZED VALVE OPERATOR	M	OVERFLOW DRAIN PIPING	OD
GAS COCK		FIRE SERVICE	F
PLUG VALVE		NATURAL GAS	G
CHECK VALVE (SWING OR LIFT AS REQ'D)		CHILLED WATER SUPPLY	CHS
SOLENOID VALVE	S	CHILLED WATER RETURN	CHR
AUTOMATIC CONTROL VALVE (2-WAY)	S	HEATING WATER SUPPLY	HWS
AUTOMATIC CONTROL VALVE (3-WAY)	S	HEATING WATER RETURN	HWR
PRESSURE REDUCING VALVE		REFRIGERANT LIQUID	RL
P & T RELIEF VALVE		REFRIGERANT SUCTION	RS
AIR VENT (AUTOMATIC)		DUCT SIZE, FIRST FIGURE IS SIDE SHOWN	18/12
CURB COCK		BURIED OR UNDERFLOOR DUCT	
THERMAL EXPANSION VALVE		DUCT W/ ACOUSTICAL LINING	
STRAINER		FLEXIBLE DUCT (HELICAL)	
CALIBRATED BALANCE VALVE		SPIN-IN FITTINGS W/MVD	
VENTURI FLOW METER		FLEXIBLE DUCT CONNECTION	
REDUCER		SUPPLY SLOT DIFFUSER	
PET COCK OR GAUGE COCK		SUPPLY DIFFUSER	
PRESSURE GAUGE W/GAUGE COCK		RETURN GRILLE	
THERMOMETER		RADIAL DUCT MOUNTED DIFFUSER	
TEMPERATURE & PRESSURE TEST PLUG		RETURN AIR DUCT SECTION	
IN-LINE PUMP		RETURN AIR DUCT UP	
FLOW SWITCH	F	RETURN AIR DUCT DOWN	
AQUASTAT	A	SUPPLY AIR DUCT SECTION	
HOSE BIBB OR SILLCOCK		SUPPLY AIR DUCT UP	
FLOOR DRAIN		SUPPLY AIR DUCT DOWN	
FLOOR SINK		EXHAUST AIR DUCT SECTION	
WALL CLEANOUT	CH	EXHAUST AIR DUCT UP	
FLOOR OR GRADE CLEANOUT		EXHAUST AIR DUCT DOWN	
GRADE CLEANOUT W/ CONCRETE PAD		ACCESS PANEL	
REDUCED PRESSURE BACKFLOW PREVENTER	RPBP	MANUAL VOLUME DAMPER	
DIRECTION OF FLOW		GRAVITY BACKDRAFT DAMPER	G
ELBOW DOWN		MOTORIZED DAMPER	M
ELBOW UP		FIRE DAMPER	F
PIPE CAP		SMOKE DAMPER	S
TEE DOWN		COMBINATION FIRE/SMOKE DAMPER	FS
UNION		THERMOSTAT OR TEMP SENSOR	T
DOMESTIC COLD WATER		HUMIDISTAT OR HUMIDITY SENSOR	H
DOMESTIC HOT WATER		POINT OF REMOVAL FROM EXISTING	
HOT WATER CIRC.		POINT OF CONNECTION TO EXISTING	
TEMPERED WATER	T	DETAIL TAG	DETAIL NO. / DRAWING NO.
SANITARY (PLBG) VENT		KEYED NOTE	NOTE NO.

SHEET INDEX

MH001	MECHANICAL LEGEND AND ABBREVIATIONS
MH101	FIRST FLOOR MECHANICAL PLAN
MH102	SECOND FLOOR MECHANICAL PLAN
MH103	MECHANICAL ROOF PLAN
MH201	FLOW/CONTROL DIAGRAM
MH401	ENLARGED MECHANICAL ROOM PLAN AND SECTION
MH501	MECHANICAL DETAILS
MH502	MECHANICAL DETAILS
MH601	MECHANICAL SCHEDULES
PL101	FIRST FLOOR PLUMBING PLAN
PL102	SECOND FLOOR PLUMBING PLAN
PL401	ENLARGED PLUMBING PLANS

COOPER ROBERTS SIMONSEN ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
sdeakins@ces-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8481 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

Colvin Engineering Associates, Inc.
244 West 300 North Suite 200
Salt Lake City, Utah 84103
Phone (801) 322-2400 / Fax (801) 322-2416

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300 SOUTH 500 WEST
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PROJECT NO: 2003-039.00
CAD DWG FILE: MH001.dwg
DRAWN BY: JLW
CHECKED BY: SMD

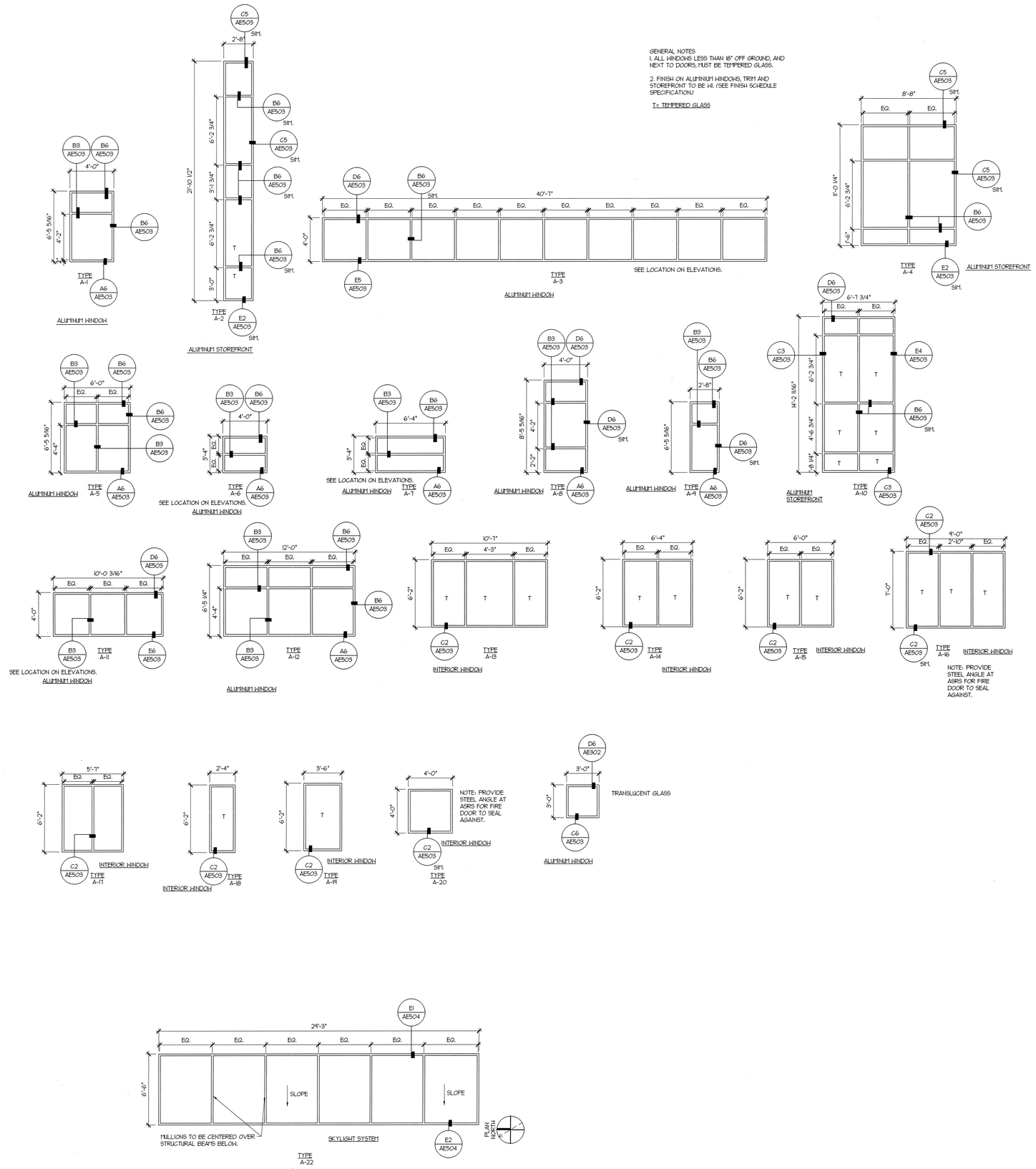
MECHANICAL LEGEND & ABBREVIATIONS

MH001

GENERAL NOTES
1. ALL WINDOWS LESS THAN 18" OFF GROUND, AND NEXT TO DOORS, MUST BE TEMPERED GLASS.

2. FINISH ON ALUMINUM WINDOWS, TRIM AND STOREFRONT TO BE MI. (SEE FINISH SCHEDULE SPECIFICATION)

T= TEMPERED GLASS



GENERAL NOTES

A. ALL OPENINGS MUST BE FIELD VERIFIED.

REFERENCE NOTES

1.

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8481 FAX (801) 401-8471
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1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
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bma@mailsnare.net

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PROJECT NO: B03-039 ARCHIVES
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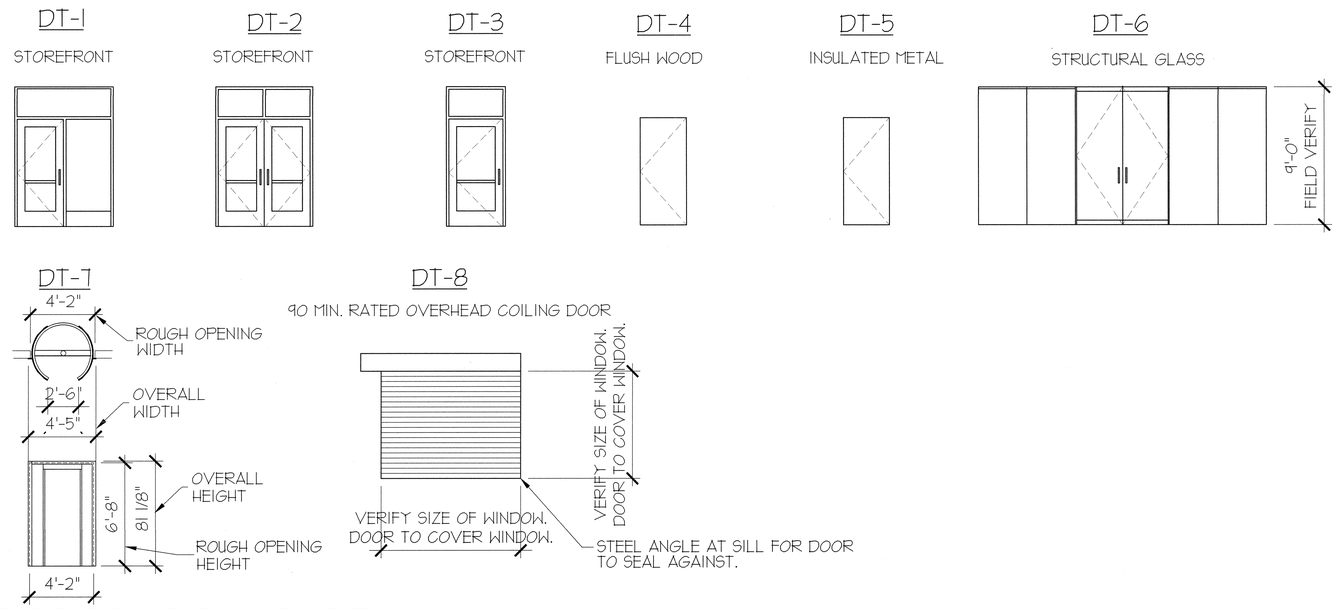
WINDOW SCHEDULE

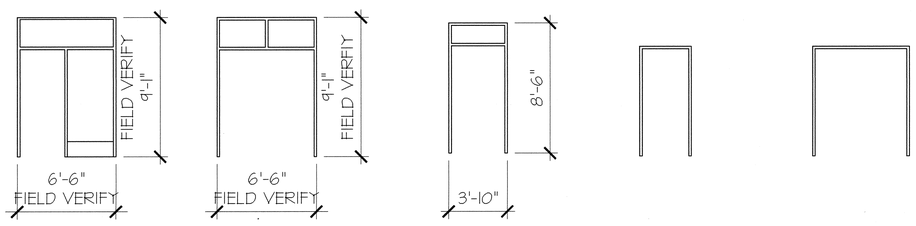
AE602

DOOR TYPES



NOTE: CONTRACTOR VERIFY ALL DIMENSIONS WITH SUBMITTALS.

FRAME TYPES



DOOR SCHEDULE

MARK (CODE AIA)	LOCATION	DOOR PAIR	DOOR SINGLE	DOOR TYPE	DOOR SIZE	DOOR GLAZING	FRAME PROFILE	FRAME TYPE	FRAME DETAILS HEAD	FRAME DETAILS JAMB	THRESHOLD	FIRE RATING	HARDWARE GROUP	REMARKS	MARK (CODE AIA)
	FIRST FLOOR														
1 A	ELEVATOR PIT - 1		•	X	X		HM	X	A4/AE501	A6/AE501	TH1	45FR	-		1 A
1 B	ELEVATOR PIT - 1		•	X	X		ALM	X	A4/AE501	A6/AE501	TH1	45FR	-		1 B
100 A	VESTIBULE - 100	•		DT6	S4		SGS	X	A1/AE404	A1/AE404	TH1		SEE SPEC.	CARD READER	100 A
100 B	VESTIBULE - 100	•		DT6	S4		SGS	X	A1/AE404	A1/AE404	TH1		SEE SPEC.	CARD READER	100 B
100 C	VESTIBULE - 100		•	DT3	S3		ALM	FT3	D6/AE404 SIM.	D6/AE404	TH1		3AL	CARD READER	100 C
101 A	LOBBY - 101		•	DT3	S3		ALM	FT3	C6/AE404 SIM.	C6/AE404	TH1		3AL	CARD READER	101 A
101 B	LOBBY - 101		•	DT1	S2		ALM	FT1	A5/AE504	D3/AE502	TH1		2AL		101 B
101 C	LOBBY - 101		•	DT4	S3		HM	FT4	B5/AE502	A5/AE502			4		101 C
102 A	BUSINESS MANAGER OFFICE - 102		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			5		102 A
104 A	ELEC. ARCHIVIST OFFICE - 104		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			5		104 A
105 A	DIRECTOR'S OFFICE - 105		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			5		105 A
106 A	CONFERENCE - 106		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			5		106 A
106 B	CONFERENCE - 106		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			5		106 B
108 A	ADMINISTRATION LOBBY - 108		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			4		108 A
109 A	BREAK ROOM - 109		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			2		109 A
109 B	BREAK ROOM - 109		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			2		109 B
110 A	CONFERENCE ROOM - 110	•		DT4	S2		HM	FT5	B5/AE502	A5/AE502			6		110 A
110 B	CONFERENCE ROOM - 110	•		DT2	S2		ALM	FT2	D5/AE503	B6/AE503 SIM.	TH1		1AL		110 B
111 A	AV STORAGE - 111	•		DT4	S2		HM	FT5	B5/AE502	A5/AE502			10		111 A
112 A	ASRS PLATFORM - 112		•	DT4	S3		HM	FT4	D5/AE504	E5/AE504		90	11	CARD READER	112 A
112 B	ASRS PLATFORM - 112	•		DT5	S5		HM	FT5	B5/AE503	B5/AE503	TH1		13	CARD READER	112 B
112 C	ASRS PLATFORM - 112		•	DT8			AS PER MANUFACTURES DETAILS				TH5	90			112 C
112 D	ASRS PLATFORM - 112		•	DT8			AS PER MANUFACTURES DETAILS				TH5	90			112 D
112 E	ASRS PLATFORM - 112		•	DT8			AS PER MANUFACTURES DETAILS				TH5	90			112 E
113 A	TELECOM - 113		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			2		113 A
114 A	STAIRSHELL - 114		•	DT5	S2		HM	FT4	D6/AE504	D6/AE504	TH1		1	CARD READER	114 A
115 A	LAB - 115		•	DT4	S3		HM	FT4	B5/AE502	A5/AE502			6		115 A
115 B	LAB - 115		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			6		115 B
116 A	DARKROOM - 116		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			5		116 A
116 B	DARK ROOM - 116		•	DT7	S6				A5/AE505	A5/AE505					116 B
121 A	SPRINKLER RISER ROOM - 121		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			2		121 A
121 B	SPRINKLER RISER ROOM - 121		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			2		121 B
122 A	ELECTRICAL - 122		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			2		122 A
123 A	ELEVATOR EQUIPMENT ROOM - 123		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			2		123 A
124 A	WOMEN'S - 124		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			3		124 A
125 A	CUSTODIAL - 125		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			2		125 A
126 A	MEN'S - 126		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			3		126 A
127 A	MICROGRAPHICS - 127	•		DT5	S2		HM	FT5	D6/AE504	D6/AE504	TH1		8	CARD READER	127 A
128 A	ASRS STORAGE - 128	•		DT5	S5		HM	FT5	B5/AE503	B5/AE503	TH1		12		128 A
	SECOND FLOOR														
204 A	RA MANAGER'S OFFICE - 204		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			5		204 A
208 A	RECORDS ANALYSIS - 208		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			4		208 A
210 A	STORAGE - 210		•	DT4	S3		HM	FT4	B5/AE502	A5/AE502			11		210 A
211 A	STAIRSHELL - 211		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502		45	14		211 A
215 A	RP MANAGER'S OFFICE - 215		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			5		215 A
221 A	BOILER ROOM - 221		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			5		221 A
222 A	RECORDS PROC./RECORDS ANAL.		•	DT4	S3		HM	FT4	B5/AE502	A5/AE502			4		222 A
223 A	MECHANICAL - 223		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			5		223 A
224 A	ELECTRICAL - 224		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			2		224 A
225 A	WOMEN'S - 225		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			3		225 A
226 A	MEN'S - 226		•	DT4	S2		HM	FT4	B5/AE502	A5/AE502			3		226 A
227 A	CUSTODIAL - 227		•	DT4	S1		HM	FT4	B5/AE502	A5/AE502			2		227 A

DOOR HARDWARE NOTES:
-FOR DOOR HARDWARE SEE SPECIFICATION SECTION
-ALUMINUM STOREFRONT HARDWARE HAS BEEN IDENTIFIED WITH GROUP NUMBER FOLLOWED BY AL = ALUMINUM STOREFRONT. FOR THESE GROUPS SEE ALUMINUM STOREFRONT SPECIFICATION.
-FOR DOORS 100A AND 100B SEE 08450 ALL-GLASS ENTRANCES AND STOREFRONTS SPECIFICATION FOR DOOR HARDWARE.

S SIZE

S1 2'-6" x 7'-0" x 1 3/4"
S2 3'-0" x 7'-0" x 1 3/4"
S3 3'-6" x 7'-0" x 1 3/4"
S4 3'-0" x 7'-0" x 3/4"
S5 3'-0" x 8'-0" x 1 3/4"
S6 REVOLVING DARKROOM DOOR

FRAME PROFIL3

HM HOLLOW METAL
ALM ALUMINUM
SGS STRUCTURAL GLASS SYSTEM

G GLAZING

G1 TEMPERED INSULATED GLASS
G2 INSULATED GLASS
G3 3/4" STRUCTURAL GLASS

TH THRESHOLD

TH1 ALUMINUM
TH2 MARBLE
TH3 CARPET (TRANSITION STRIP)
TH4 VINYL (TRANSITION STRIP)
TH5 PROVIDE STEEL ANGLE MOUNTED TO METAL STUDDS THAT EXTENDS THROUGH (2) LAYERS OF GYPSUM BOARD. BOTTOM OF ROLLING DOOR TO SEAL AT ANGLE.

GENERAL NOTES

1. DUE TO MULTIPLE USE, SOME OF THE DETAILS REFERED TO ON THE DOOR SCHEDULE ARE REVERSED AND/OR TURNED FROM THE DIRECTION SHOWN ON THE FLOOR PLAN. COORDINATE WITH WALL TYPE SCHEDULE FOR WALL FINISHES. THE GENERAL INTENT OF DETAILS SHALL IN ALL CASES BE FOLLOWED AND THE ARCHITECT CONSULTED SHOULD QUESTIONS ARISE.

2. DOORS TO BE SET TO CLEAR FINISHED FLOOR SURFACE BY 1/2".

3. FIELD VERIFY ALL DOOR DIMENSIONS.

4. PROVIDE BATT INSULATION IN ALL HOLLOW METAL DOOR FRAMES.

5. PROVIDE BATT INSULATION IN ALL VOIDS BETWEEN ROUGH FRAMING AND DOOR FRAME.

6. ALL EXTERIOR HOLLOW MENTAL TO BE INSULATED. DOORS AT 128B AND 112B ARE TO HAVE WHEATHER STRIPPING AND SWEEPS.

COOPER ROBERTS SIMONSEN ARCHITECTURE

crsa
700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@coea-ut.com

ELECTRICAL ENGINEER
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SALT LAKE CITY, UT
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FRUIT HEIGHTS, UT 84037
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bma@mailsnare.net

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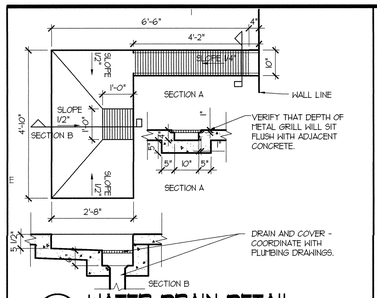
DOOR SCHEDULE

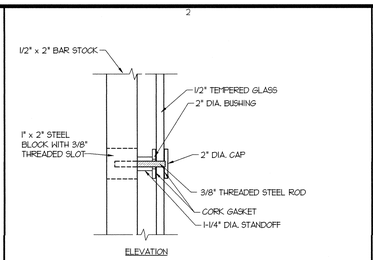
AE601

#



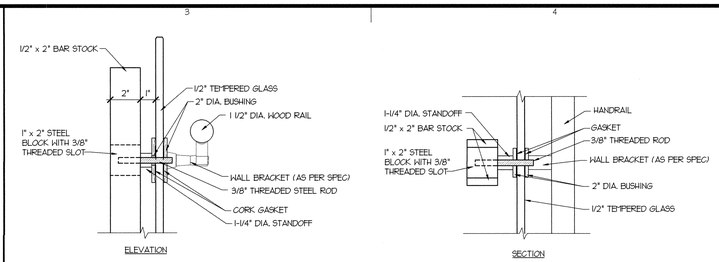
E1 WATER DRAIN DETAIL
1/2"=1'-0"

AE505-E1-04



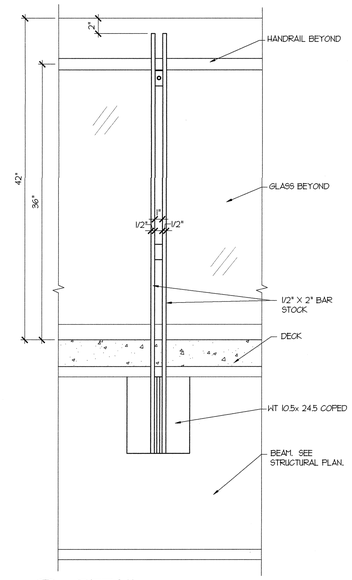
E2 HANDRAIL/GLASS CONNECTION
3"=1'-0"

AE505-E4-04



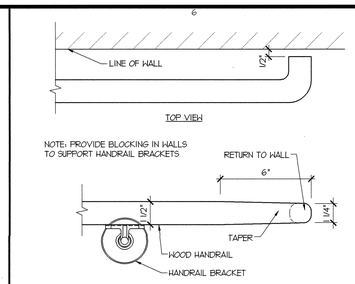
E3 HANDRAIL/GLASS CONNECTION
3"=1'-0"

AE505-E4-04



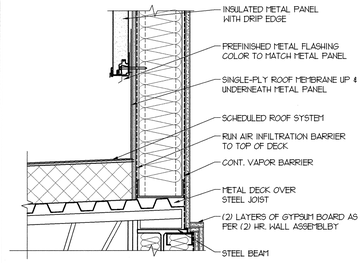
D5 DETAIL
1-1/2"=1'-0"

AE505-B6-08



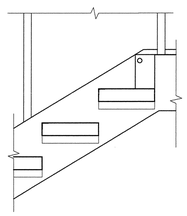
E6 HANDRAIL DETAIL
3"=1'-0"

AE505-E6-04



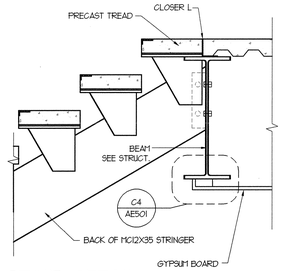
D2 ROOF DETAIL
1 1/2"=1'-0"

AE505-D2-08



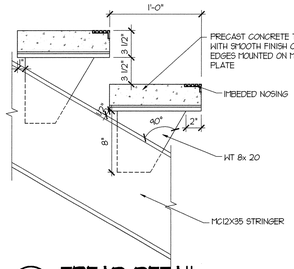
D3 STAIR DETAIL
1"=1'-0"

AE505-D4-12



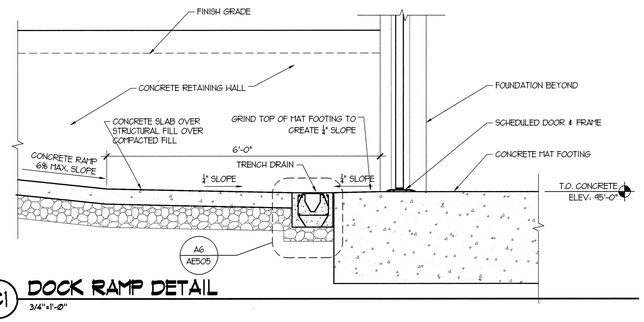
D4 STAIR DETAIL
1"=1'-0"

AE505-D4-12



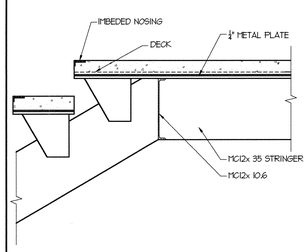
D6 TREAD DETAIL
1-1/2"=1'-0"

AE505-D6-08



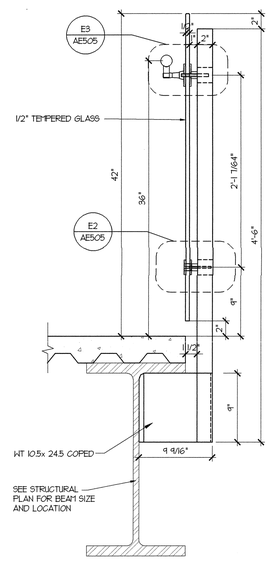
C1 DOCK RAMP DETAIL
3/4"=1'-0"

AE505-C1-16



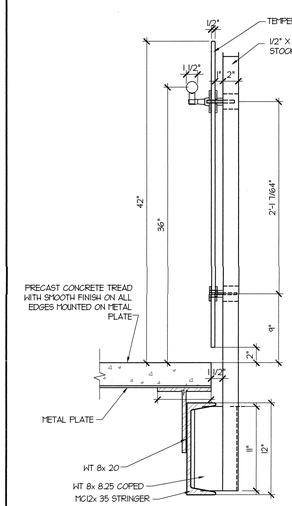
C3 STAIR DETAIL @ LANDING
1"=1'-0"

AE505-D4-12



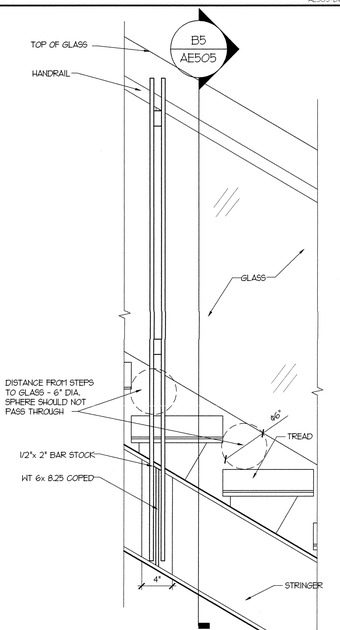
B4 DETAIL
1-1/2"=1'-0"

AE505-B6-08



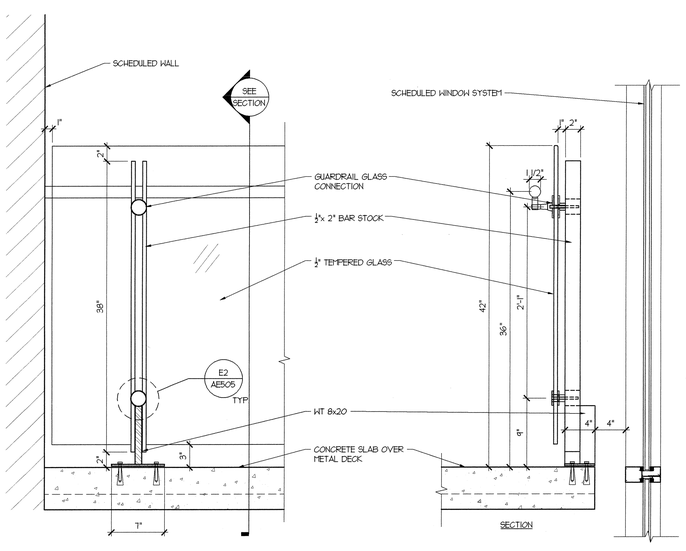
B5 STAIR DETAIL
1-1/2"=1'-0"

AE505-B6-08



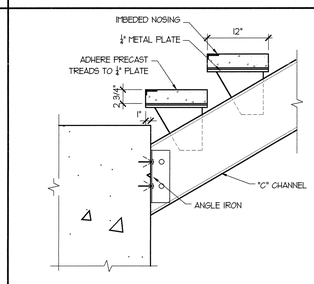
B6 STAIR DETAIL
1-1/2"=1'-0"

AE505-B6-08



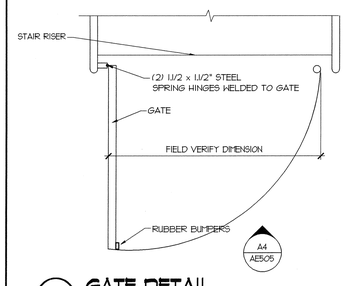
A1 FLOOR MOUNTED GUARDRAIL DETAIL
1-1/2"=1'-0"

AE505-A1-08



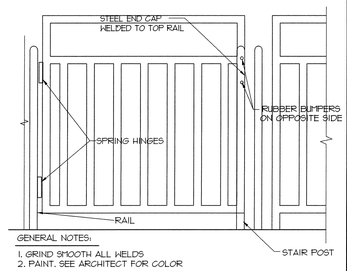
B3 STAIR DETAIL
1"=1'-0"

AE505-D4-12



A3 GATE DETAIL
1"=1'-0"

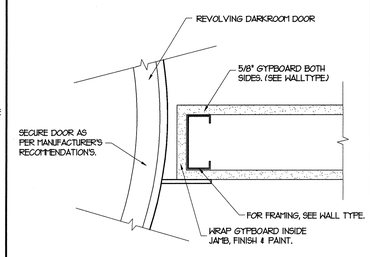
AE505-A3-12



GENERAL NOTES:
1. GRIND SMOOTH ALL WELDS
2. PAINT. SEE ARCHITECT FOR COLOR

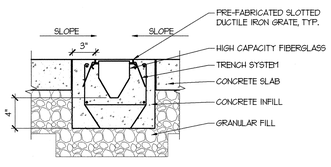
A4 GATE DETAIL
1"=1'-0"

AE505-A3-12



A5 JAMB DETAIL
3"=1'-0"

AE505-A5-04



A6 TRENCH DRAIN DETAIL
1-1/2"=1'-0"

AE505-A6-08

COOPER ROBERTS SIMONSEN ARCHITECTURE

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-9491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
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STATE OF UTAH
DIVISION OF FACILITIES AND CONSTRUCTION

4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

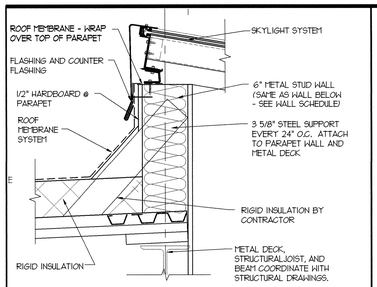
BID PACKAGE #2

CD	OCTOBER 1 2003	BID PACKAGE #2
DD	-	-

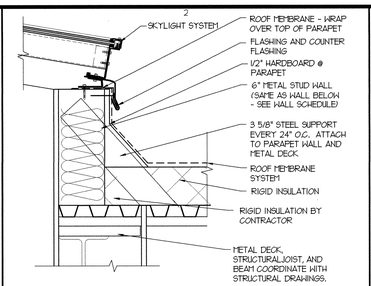
PROJECT NO: B03-039 ARCHIVES
CAD DWG FILE: P:\B03-039\ARCHIVE/AE504.DWG
DRAWN BY:
CHECKED BY: -

TYPICAL DETAILS

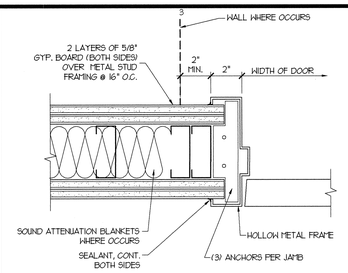
AE505



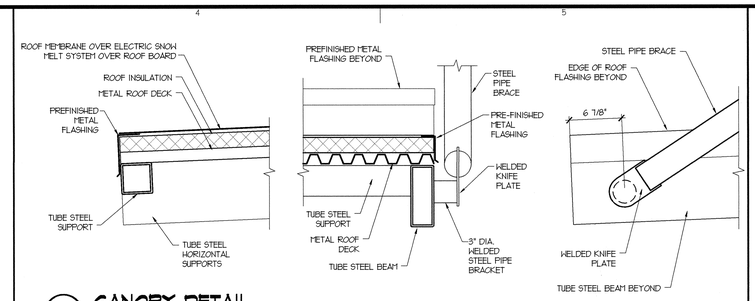
E1 SKYLIGHT DETAIL
1 1/2"=1'-0"
AE504-E1-08



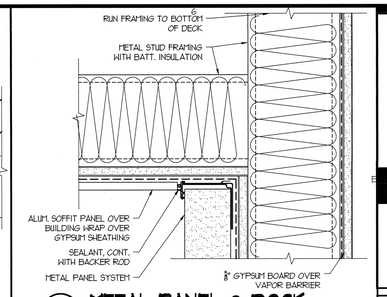
E2 SKYLIGHT DETAIL
1 1/2"=1'-0"
AE504-E1-08



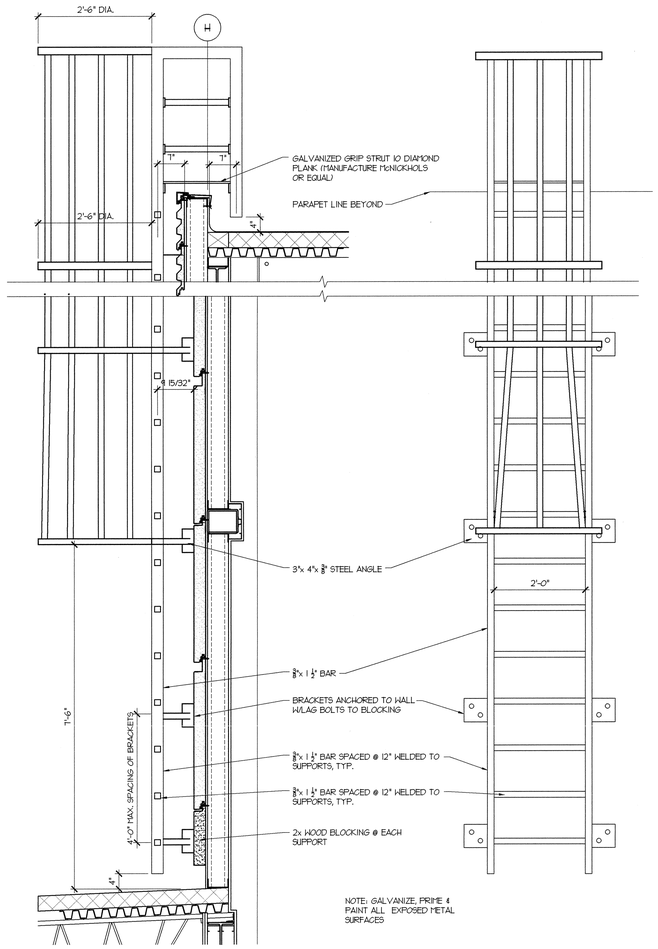
E3 HOLLOW METAL DOOR JAMB
3" = 1'-0"
AE504-E3-04



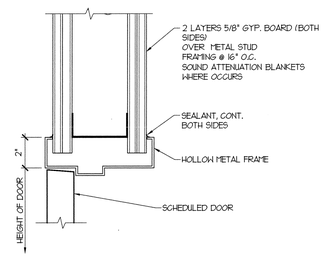
E4 CANOPY DETAIL
1 1/2"=1'-0"
NOTE: ALL EXPOSED METAL TO BE GALVANIZED
AE504-E4-08



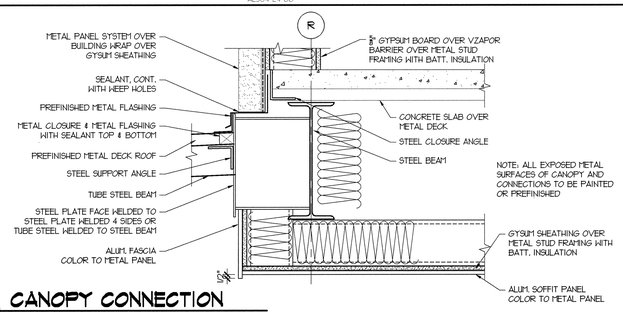
E6 METAL PANEL @ DOCK
3"=1'-0"
AE504-E6-04



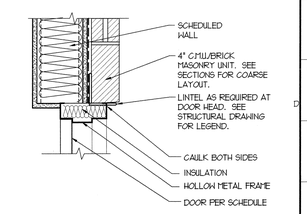
B1 ROOF LADDER
3/4"=1'-0"
AE501-B1-16



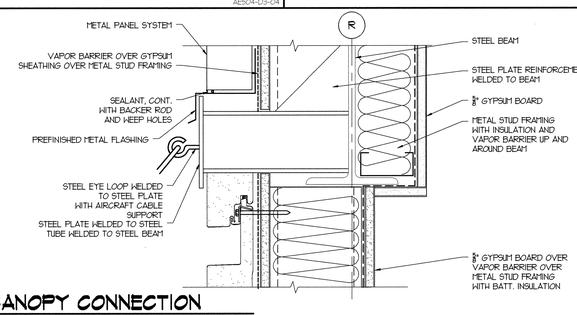
D3 HOLLOW METAL DOOR HEAD
3" = 1'-0"
AE504-D3-04



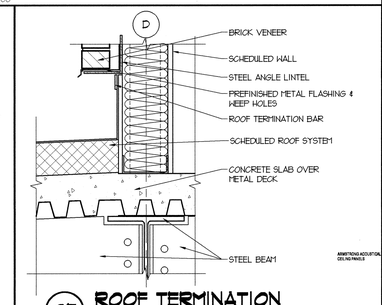
D4 CANOPY CONNECTION
1 1/2"=1'-0"
GALVANIZE ALL EXPOSED STEEL
AE504-D4-08



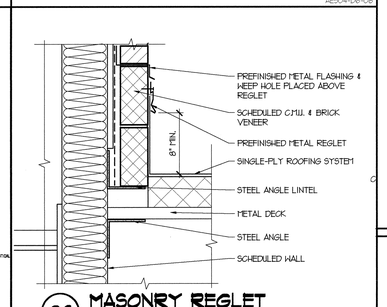
D6 DETAIL - HEAD/JAMB
1-1/2" = 1'-0"
AE504-D6-08



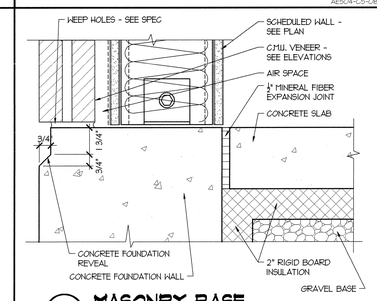
C3 CANOPY CONNECTION
3" = 1'-0"
GALVANIZE ALL EXPOSED STEEL
AE504-C3-04



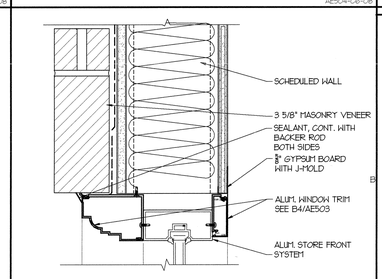
C5 ROOF TERMINATION
1 1/2"=1'-0"
AE504-C5-08



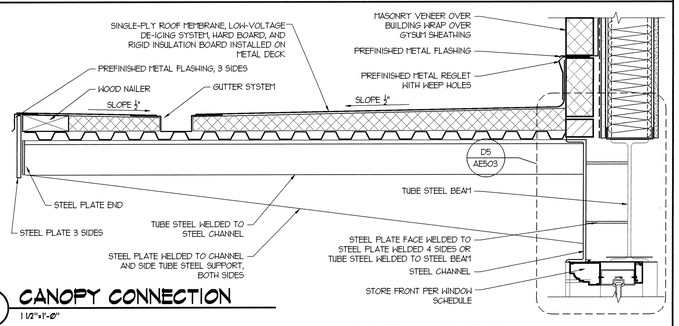
C6 MASONRY REGLET
1-1/2"=1'-0"
AE504-C6-08



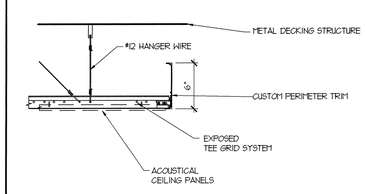
B5 MASONRY BASE
3"=1'-0"
AE503-B5-04



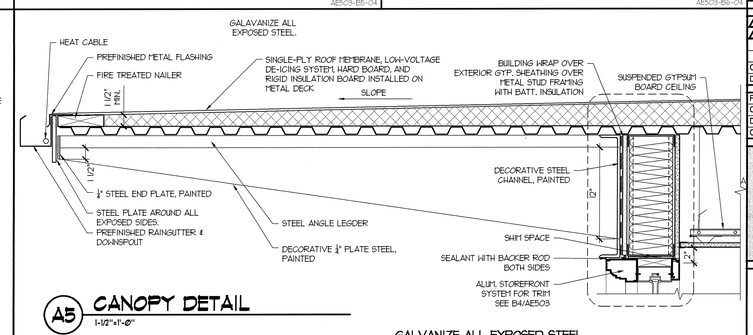
B6 ALUM. STOREFRONT JAMB
3" = 1'-0"
AE503-B6-04



A1 CANOPY CONNECTION
1 1/2"=1'-0"
AE504-A1-08
GALVANIZE ALL EXPOSED STEEL



A4 CEILING EDGE DETAIL
1 1/2"= 1'-0"
AE504-A4-08



A5 CANOPY DETAIL
1-1/2"=1'-0"
AE504-A5-08
GALVANIZE ALL EXPOSED STEEL

COOPER ROBERTS SIMONSEN ARCHITECTURE

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absgconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

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SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
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bma@mailsnare.net

STATE ARCHIVES BUILDING

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STATE OF UTAH
DIVISION OF FACILITIES AND CONSTRUCTION

4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

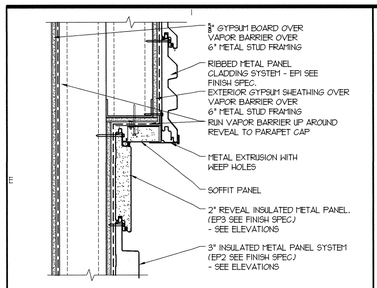
BID PACKAGE #2

CD	OCTOBER 1 2003	BID PACKAGE #2
DD	-	-

PROJECT NO: B03-039 ARCHIVES
CAD DWG FILE: P:\B03-039\ARCHIVE\AE504.DWG
DRAWN BY:
CHECKED BY: -

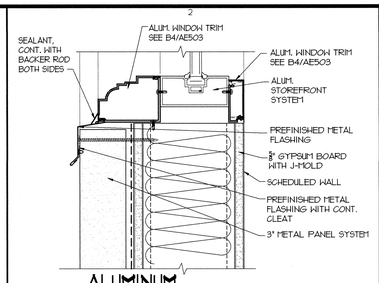
TYPICAL DETAILS

AE504



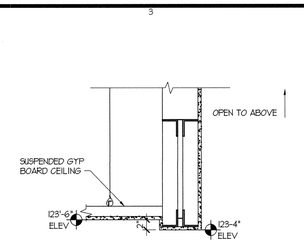
E1 METAL PANEL REVEAL
1 1/2" = 1'-0"

AE503-E1-08



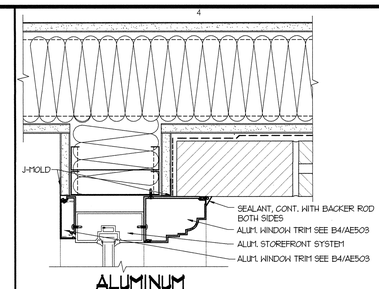
E2 ALUMINUM STOREFRONT SILL
3"=1'-0"

AE503-C2-04



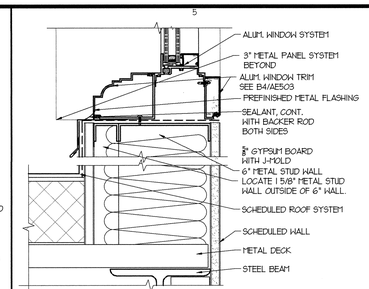
E3 SOFFIT DETAIL
1"=1'-0"

AE503-E3-12



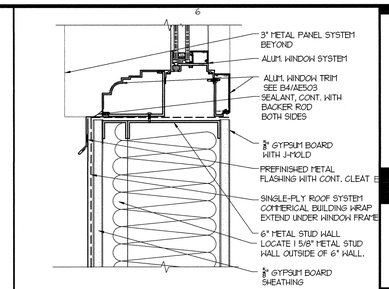
E4 ALUMINUM STOREFRONT WINDOWS
3"=1'-0"

AE503-C2-04



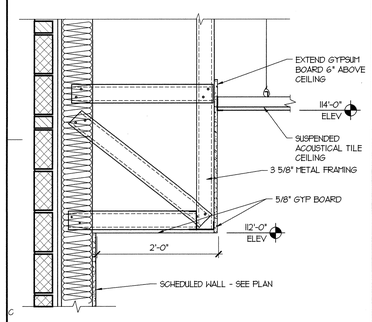
E5 CLERESTORY WINDOW SILL
3"=1'-0"

AE503-E5-04



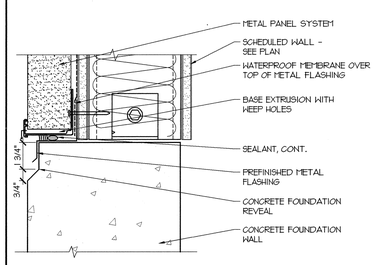
E6 ALUM. WINDOW SILL
3" = 1'-0"

AE503-E6-04



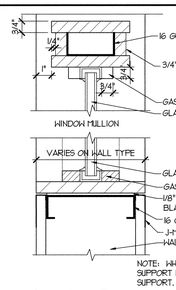
C1 SOFFIT DETAIL
1"=1'-0"

AE503-C1-12



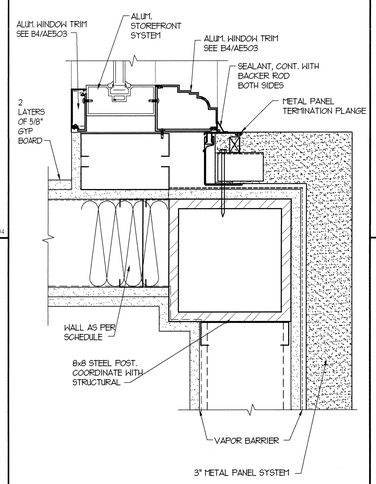
D2 METAL PANEL BASE
3"=1'-0"

AE503-D2-04



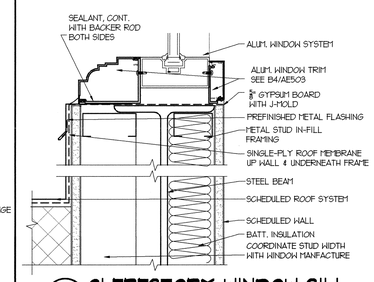
C2 WINDOW SILL, JAMB, & HEAD
3"=1'-0"

AE503-C2-04



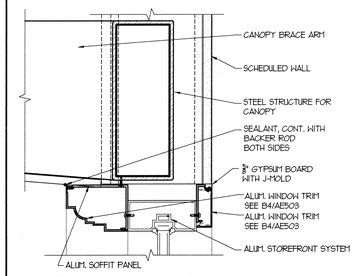
C3 ALUMINUM STOREFRONT WINDOWS
3"=1'-0"

AE503-C2-04



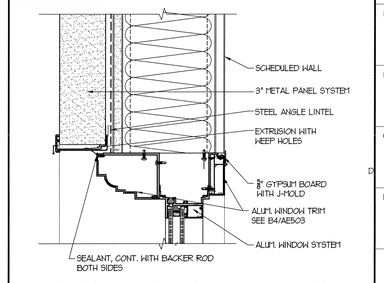
D4 CLERESTORY WINDOW SILL
3"=1'-0"

AE503-D4-04



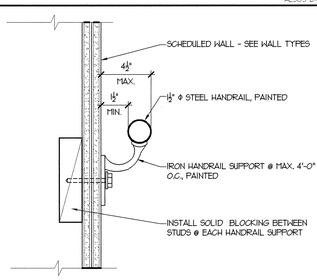
D5 ALUM. STOREFRONT HEAD
3" = 1'-0"

AE503-D5-04



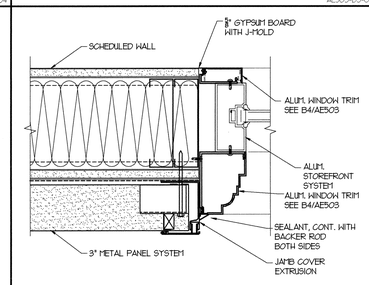
D6 ALUM. WINDOW HEAD/JAMB
3" = 1'-0"

AE503-D6-04



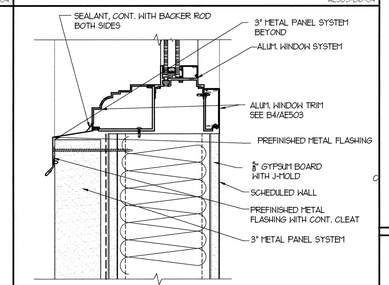
C4 TYP. HANDRAIL CONNECTION
3"=1'-0"

AE503-C4-04



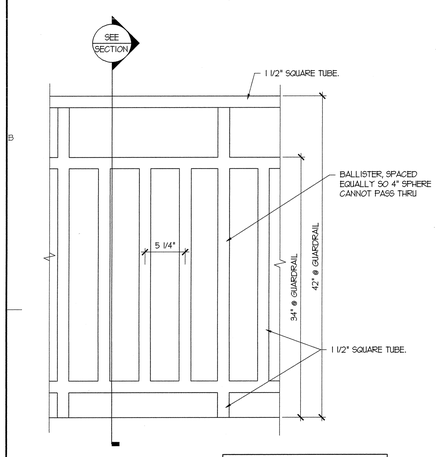
C5 ALUM. STOREFRONT JAMB/HEAD
3" = 1'-0"

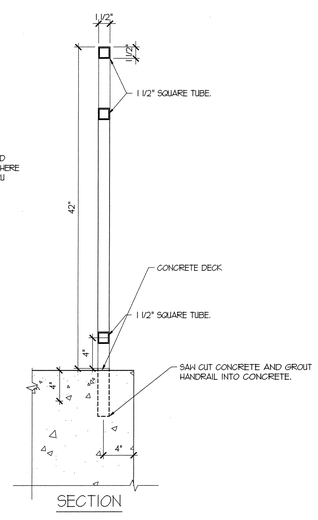
AE503-C5-04



C6 ALUM. WINDOW SILL
3" = 1'-0"

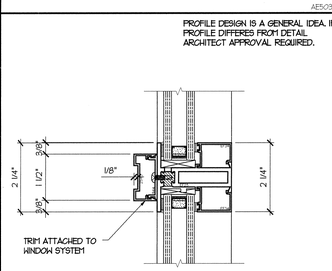
AE503-C6-04





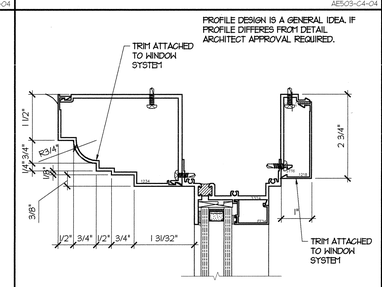
A1 GUARDRAIL DETAIL
1-1/2"=1'-0"

AE503-A1-08



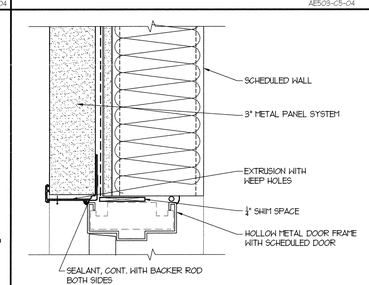
B3 MUNTIN TRIM PROFILE
6" = 1'-0"

AE503-B4-02



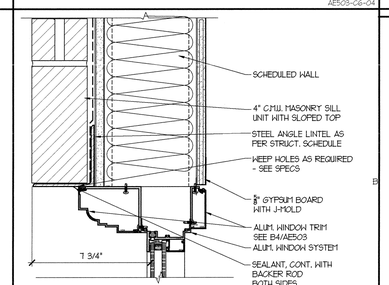
B4 WINDOW TRIM PROFILE
6" = 1'-0"

AE503-B4-02



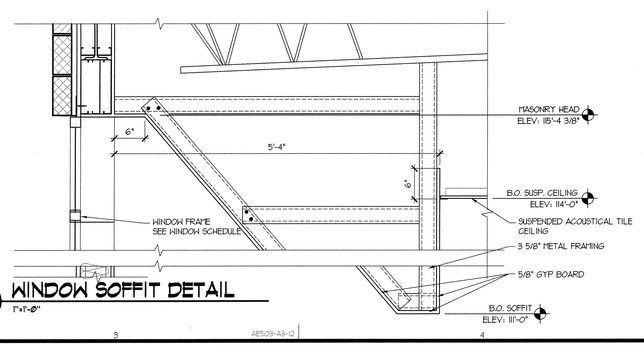
B5 H.M. DOOR HEAD (JAMB SIM)
3" = 1'-0"

AE503-B5-04



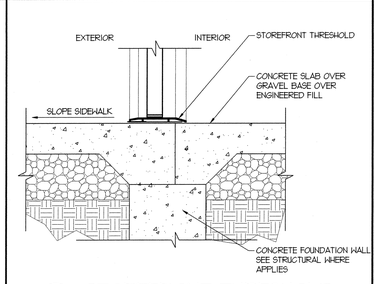
B6 ALUM. WINDOW HEAD/JAMB
3" = 1'-0"

AE503-B6-0



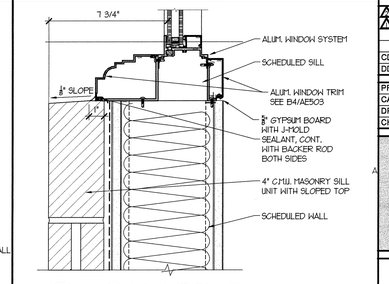
A3 WINDOW SOFFIT DETAIL
1"=1'-0"

AE503-A3-12



A5 STOREFRONT THRESHOLD
1-1/2"=1'-0"

AE503-A5-08



A6 ALUM. WINDOW SILL
3" = 1'-0"

AE503-A6-04

COOPER ROBERTS SIMONSEN ARCHITECTURE

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@coea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
SALT LAKE CITY UTAH

STATE OF UTAH
DIVISION OF FACILITIES AND CONSTRUCTION

4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

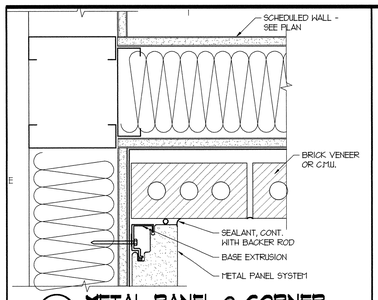
BID PACKAGE #2

CD	OCTOBER 1 2003	BID PACKAGE #2
DD	-	-

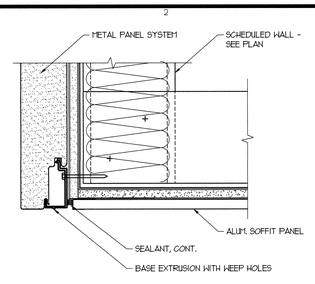
PROJECT NO: B03-039 ARCHIVES
CAD DWG FILE: P:\B03-039\ARCHIVE/AE503.DWG
DRAWN BY:
CHECKED BY: -

TYPICAL DETAILS

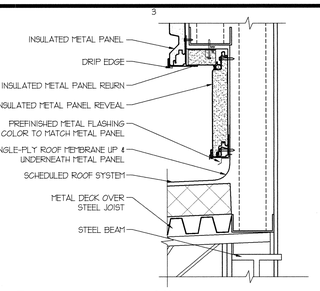
AE503



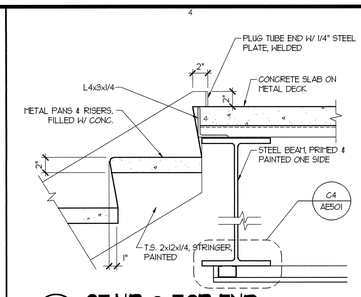
E1 METAL PANEL @ CORNER
3"=1'-0"
AE502-E1-04



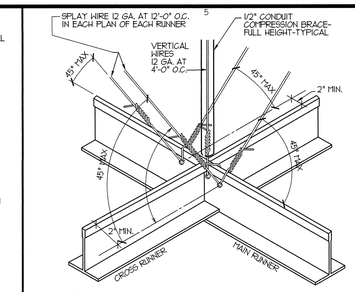
E2 METAL PANEL SOFFIT
3"=1'-0"
AE502-E2-04



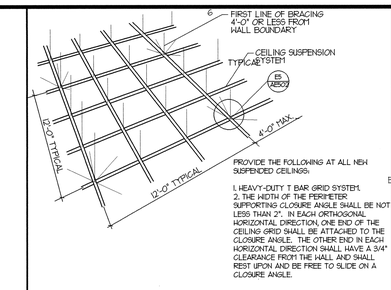
E3 ROOF DETAIL
1 1/2"=1'-0"
AE502-E3-08



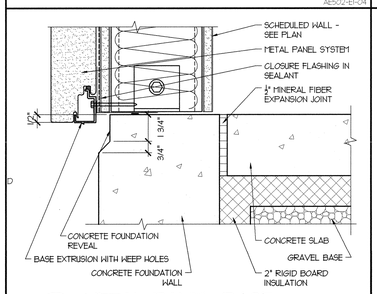
E4 STAIR @ TOP END
1 1/2"=1'-0"
AE502-E4-08



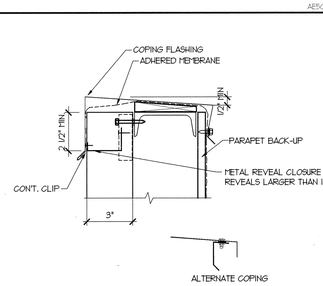
E5 SUSPENDED CEILING DETAIL
NO SCALE
AE502-D6-01



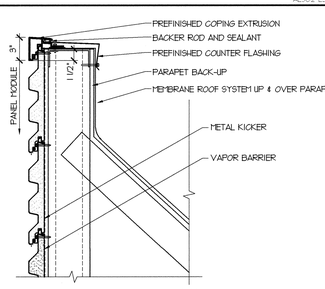
E6 SUSPENDED CEILING DETAIL
NO SCALE
AE502-D6-01



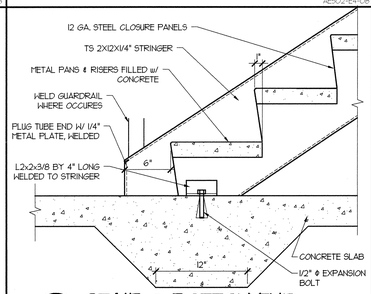
D1 METAL PANEL BASE
3"=1'-0"
AE502-D1-04



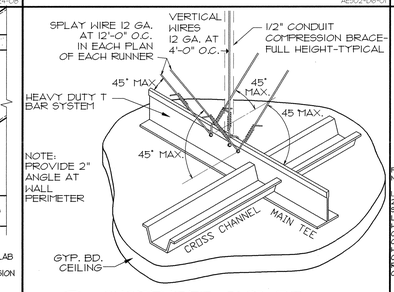
D2 COPING FLASHING
3"=1'-0"
AE502-D2-04



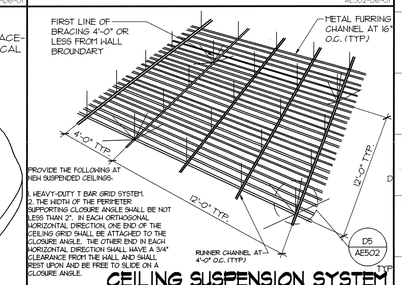
D3 COPING DETAIL
1 1/2"=1'-0"
AE502-D3-08



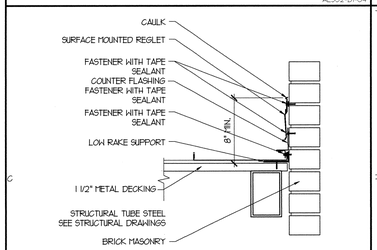
D4 STAIR @ BOTTOM END
1 1/2"=1'-0"
AE502-D4-08



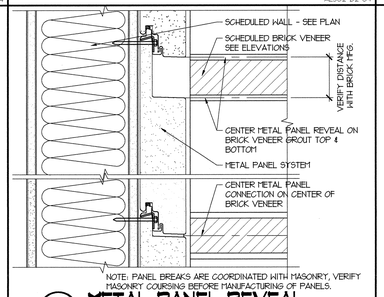
D5 SUSPENDED GYP. BD.
NONE
AE502-E5-01



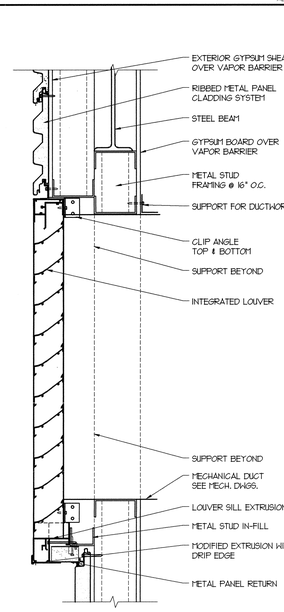
D6 CEILING SUSPENSION SYSTEM SEISMIC BRACING DETAIL
12"=1'-0"
AE502-D6-01



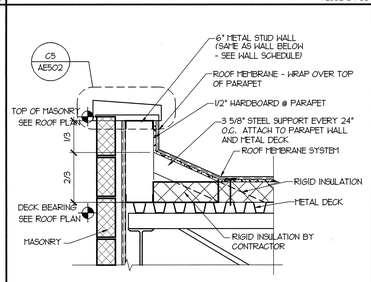
C1 CANOPY FLASHING DETAIL
1-1/2"=1'-0"
AE502-C1-08



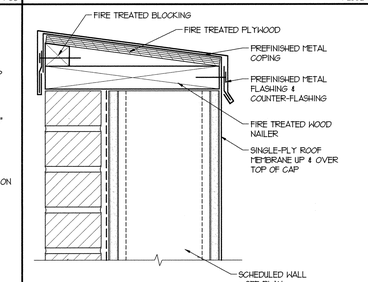
C2 METAL PANEL REVEAL
3"=1'-0"
AE502-C2-04



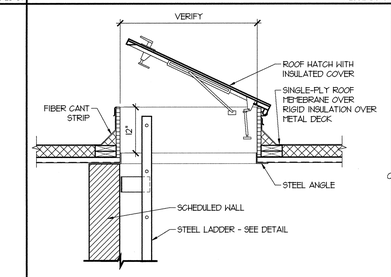
B3 MECHANICAL LOUVER
1-1/2"=1'-0"
AE5021-B3-08



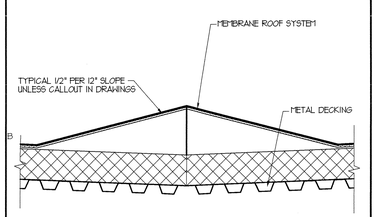
C4 PARAPET DETAIL
1"=1'-0"
AE502-C4-12



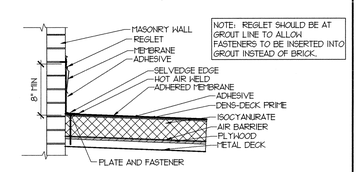
C5 TYP. PARAPET COPING
3"=1'-0"
AE502-C5-04



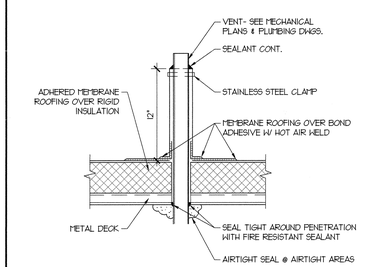
C6 ROOF HATCH DETAIL
3/4"=1'-0"
AE502-C6-16



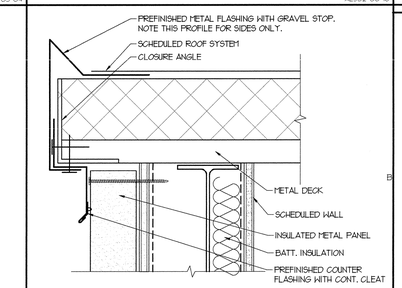
B1 CRICKET DETAIL
1-1/2"=1'-0"
AE502-B1-08



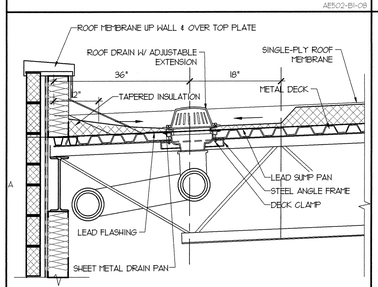
B2 FLASHING @ CANOPY
1"=1'-0"
AE502-B2-12



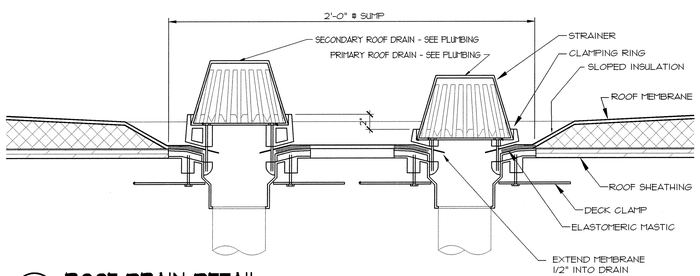
B4 ROOF VENT DETAIL
1 1/2"=1'-0"
AE502-B4-08



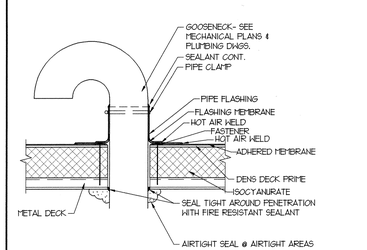
B6 CLERESTORY ROOF EDGE
3"=1'-0"
AE502-B6-04



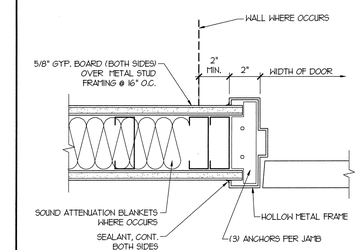
A1 ROOF DRAIN
3/4"=1'-0"
AE502-A1-16



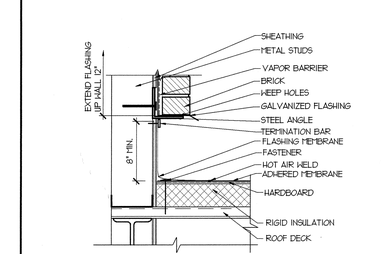
A2 ROOF DRAIN DETAIL
3"=1'-0"
AE502-A2-04



A4 ROOF VENT DETAIL
NO SCALE
AE502-A4-08



A5 HOLLOW METAL DOOR JAMB
3" = 1'-0"
AE502-A5-04



A6 DETAIL
1-1/2"=1'-0"
AE502-A6-08

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

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175 SOUTH MAIN, SUITE 300
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SALT LAKE CITY, UT
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FRUIT HEIGHTS, UT 84037
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STATE OF UTAH
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4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

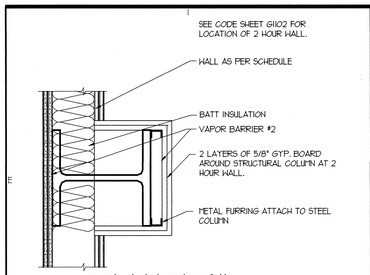
BID PACKAGE #2

CD	OCTOBER 1 2003	BID PACKAGE #2
DD	-	-

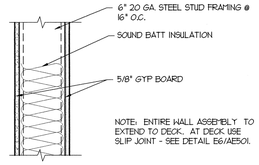
PROJECT NO: B03-039 ARCHIVES
CAD DWG FILE: P:\B03-039\ARCHIVE\AE502.DWG
DRAWN BY:
CHECKED BY: -

TYPICAL DETAILS

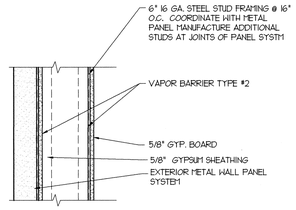
AE502



E1 COLUMN DETAIL AT 2 HOUR WALL
1-1/2" =1'-0"
AE501-A1-08

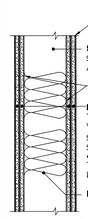


E2 WALL TYPE "J" DETAIL
1-1/2" = 1'-0"
AE501-A1-08



E3 WALL TYPE "K" DETAIL
1-1/2" = 1'-0"
AE501-A1-08

HEIGHT: TO DECK ABOVE
FIRE RATING: 2-HR.
FIRE TEST: U410
SOUND RATING: NA
SOUND TEST: NONE



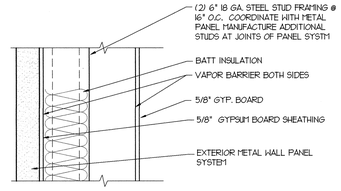
STRUCTURE: NOMINAL 6" METAL STUDS @ MAX. 16" O.C., - SEE STRUCTURAL. FIRE BLOCKED AT MAX. 10-0" O.C. VERTICAL AND HORIZONTAL, AND AT TOP AND BOTTOM OF WALL.

EXTERIOR & INTERIOR: (2) LAYERS OF GYPSUM BOARD 5/8" TYPE X THICK EACH SIDE, 4 ft WIDE, APPLIED EITHER VERTICALLY OR HORIZONTALLY. SCREW ATTACHED TO STUDS AND PLATES WITH 1 1/4" LONG TYPE W STEEL SCREWS, SPACED MAX. 12" O.C.

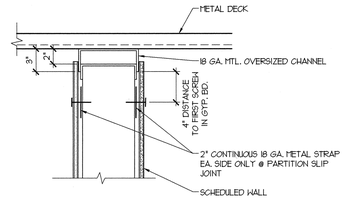
JOINTS & NAIL HEADS: WALLBOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. FASTENER HEADS COVERED WITH JOINT COMPOUND.

INSULATION: FILL CAVITY

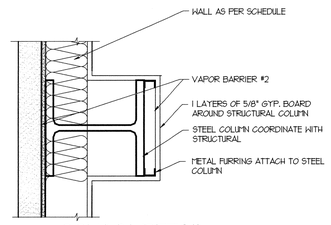
E4 WALL TYPE 'M'
1-1/2" =1'-0"
AE501-E4-08



E5 WALL TYPE 'N'
1-1/2" =1'-0"
AE501-E4-08

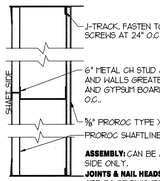


E6 PARTITION SLIP JOINT
1-1/2" =1'-0"
AE501-E6-08



D1 COLUMN DETAIL AT EXTERIOR WALL
1-1/2" =1'-0"
AE501-A1-08

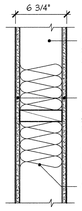
HEIGHT: TO DECK ABOVE
FIRE RATING: 1-HR.
FIRE TEST: UL U411
SOUND RATING: NA
SOUND TEST: NONE



ASSEMBLY: CAN BE ASSEMBLED FROM THE FINISHED ROOM SIDE ONLY.
JOINTS & NAIL HEADS: EXPOSED JOINTS AND SCREWHEADS ARE TO BE FINISHED WITH A JOINT-TAPE SYSTEM.
ACOUSTIC BATT INSULATION: FILL CAVITY

D2 WALL TYPE 'S' (PLAN)
1-1/2" =1'-0"
AE501-D2-08

HEIGHT: TO DECK ABOVE
FIRE RATING: 1-HR.
FIRE TEST: HP 3514 OR U305
SOUND RATING: NA
SOUND TEST: NONE



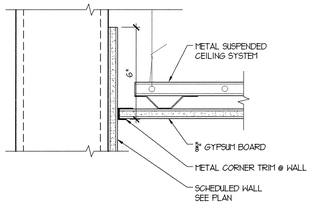
STRUCTURE: NOMINAL 6" METAL STUDS @ MAX. 16" O.C., - SEE STRUCTURAL. FIRE BLOCKED AT MAX. 10-0" O.C. VERTICAL AND HORIZONTAL, AND AT TOP AND BOTTOM OF WALL.

EXTERIOR & INTERIOR: GYPSUM BOARD 5/8" TYPE X THICK, 4 ft WIDE, APPLIED EITHER VERTICALLY OR HORIZONTALLY, SCREW ATTACHED TO STUDS AND PLATES WITH 1 1/4" LONG TYPE W STEEL SCREWS, SPACED MAX. 12" O.C.

JOINTS & NAIL HEADS: WALLBOARD JOINTS COVERED WITH TAPE AND JOINT COMPOUND. FASTENER HEADS COVERED WITH JOINT COMPOUND.

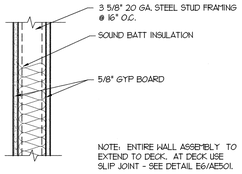
ACOUSTIC BATT INSULATION: FILL CAVITY

D3 WALL TYPE 'Q'
1-1/2" =1'-0"
AE501-D2-08

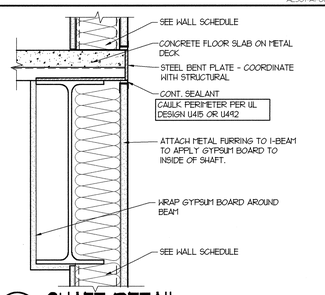


NOTE: TAPE & COMPOUND ALL JOINTS (UNO)

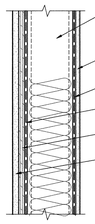
D4 CEILING SLIP-JOINT DETAIL
3"=1'-0"
AE501-D4-04



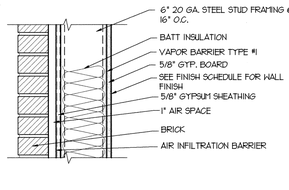
D5 WALL TYPE 'P'
1-1/2" = 1'-0"
AE501-A1-08



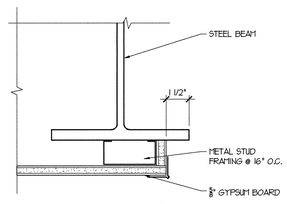
C1 SHAFT DETAIL
1-1/2" = 1'-0"
AE501-A1-08



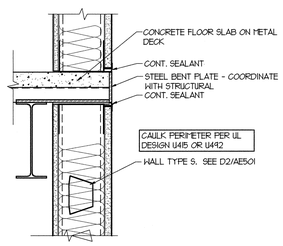
C2 WALL TYPE "E" DETAIL
1-1/2" = 1'-0"
AE501-A1-08



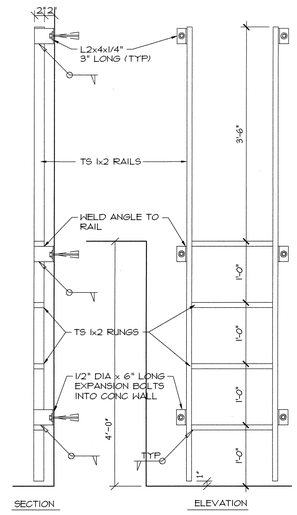
C3 WALL TYPE "F" DETAIL
1-1/2" = 1'-0"
AE501-A1-08



C4 BEAM SOFFIT DETAIL
3"=1'-0"
AE501-C4-04

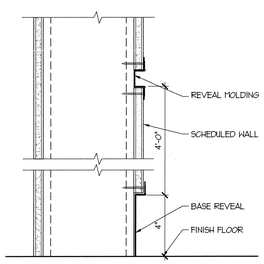


C5 SHAFT DETAIL
1-1/2" = 1'-0"
AE501-A1-08

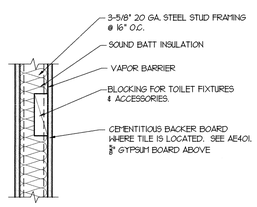


PAINT LADDER PRIOR TO ATTACHING TO WALL

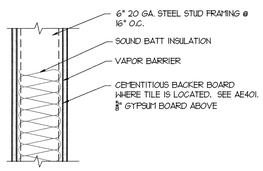
C6 ELEVATOR LADDER
1"=1'-0"
AE501-C6-12



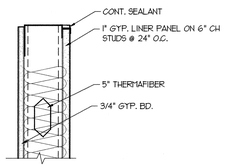
B1 GYP. BOARD WALL REVEAL
3"=1'-0"
AE501-B1-04



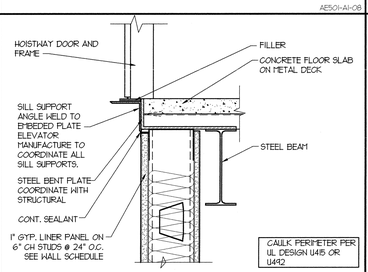
B2 WALL TYPE "C" DETAIL
1-1/2" = 1'-0"
AE501-A1-08



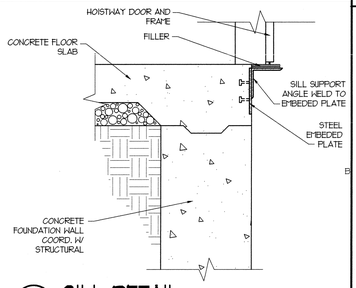
B3 WALL TYPE "D" DETAIL
1-1/2" = 1'-0"
AE501-A1-08



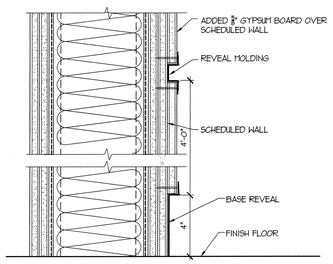
B4 WALL TYPE "L" DETAIL
1-1/2" = 1'-0"
AE501-A1-08



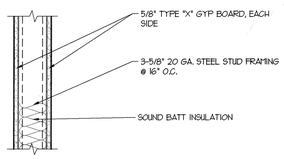
B5 SILL DETAIL
1-1/2"=1'-0"
AE501-A1-08



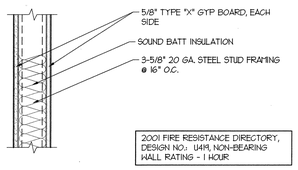
B6 SILL DETAIL
NO SCALE
AE501-A4-04



A1 GYP. BOARD WALL REVEAL
3"=1'-0"
AE501-A1-04



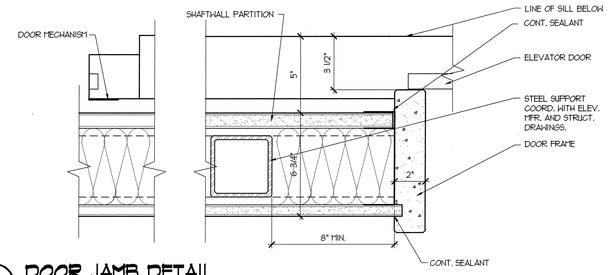
A2 WALL TYPE "A" DETAIL
1-1/2" = 1'-0"
AE501-A1-08



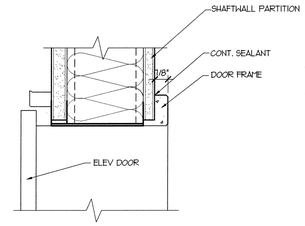
2001 FIRE RESISTANCE DIRECTORY, DESIGN NO.: U419, NON-BEARING WALL RATING - 1 HOUR

EXTEND WALL TO BOTTOM OF DECK. PROVIDE 1 HOUR RATED SLIP JOINT AT DECK.

A3 WALL TYPE "B" DETAIL
1-1/2" = 1'-0"
AE501-A1-08



A4 DOOR JAMB DETAIL
3"=1'-0"
AE501-A4-04



A6 DOOR HEAD DETAIL
3"=1'-0"
AE501-A4-04

COOPER ROBERTS SIMONSEN ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
SALT LAKE CITY UTAH

STATE OF UTAH DIVISION OF FACILITIES AND CONSTRUCTION

4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

BID PACKAGE #2

CD	OCTOBER 1 2003	BID PACKAGE #2
DD	-	-

PROJECT NO: B03-039 ARCHIVES
CAD DWG FILE: P:\B03-039\ARCHIVE\AE501.DWG
DRAWN BY:
CHECKED BY: -

WALL TYPES AND DETAILS

AE501

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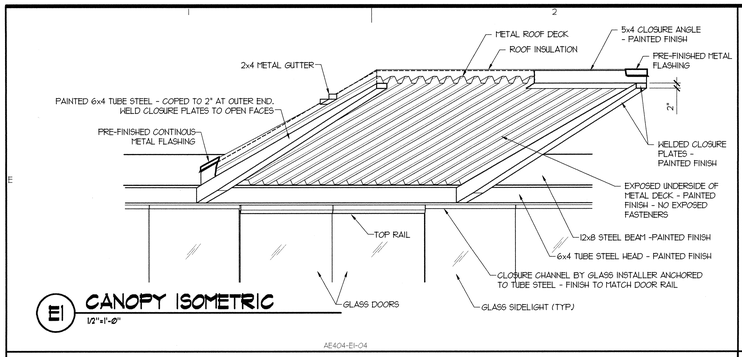
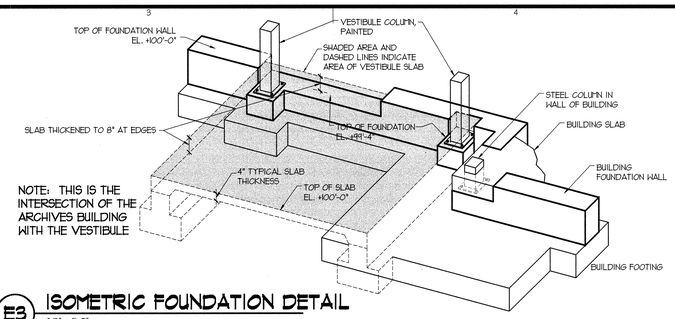


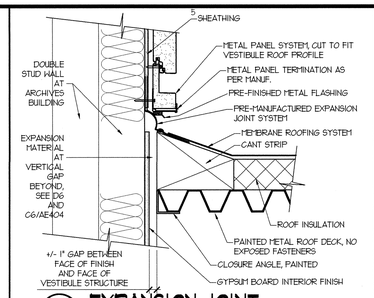
E1 CANOPY ISOMETRIC
1/2" = 1'-0"

AE404-E1-04



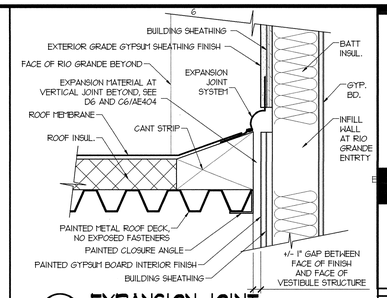
E3 ISOMETRIC FOUNDATION DETAIL
3/8" = 1'-0"

AE404-E3-32



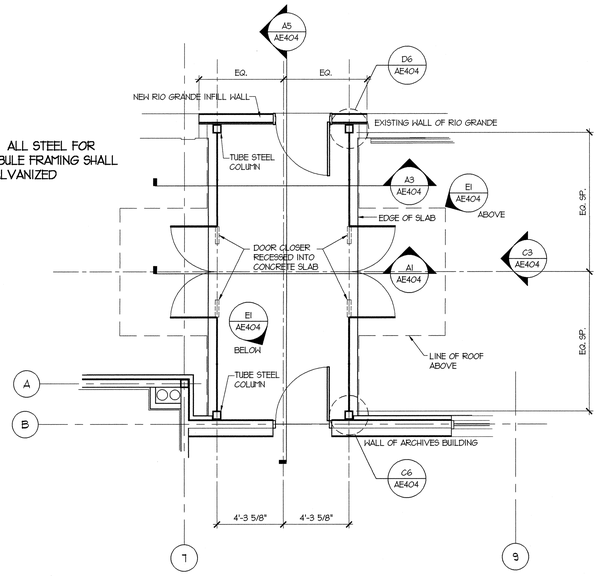
E5 EXPANSION JOINT
1-1/2" = 1'-0"

AE404-E5-08

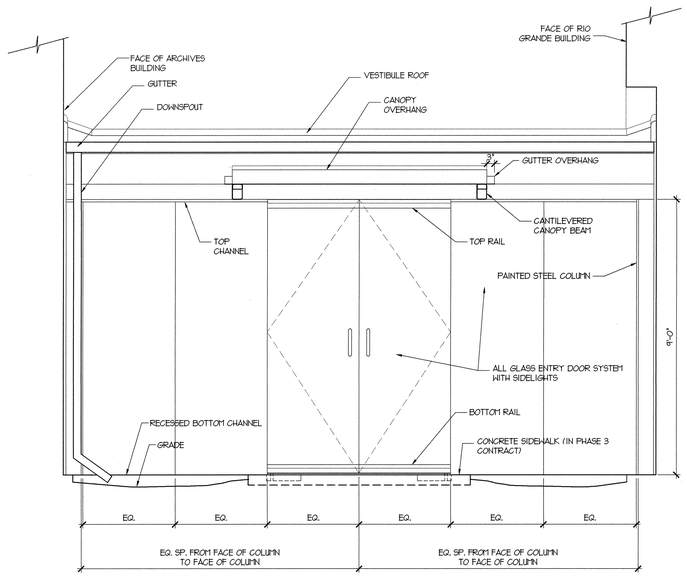


E6 EXPANSION JOINT
1-1/2" = 1'-0"

AE404-E6-08

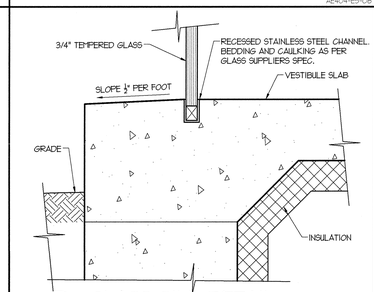


C1 VESTIBULE - ENLARGED FLOOR PLAN
1/4" = 1'-0"



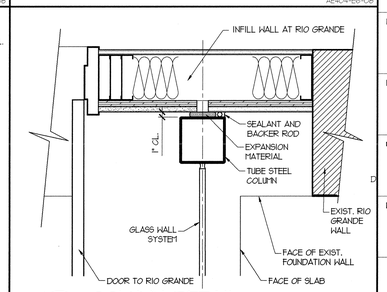
C3 VESTIBULE SECTION
1/2" = 1'-0"

AE404-A3-24



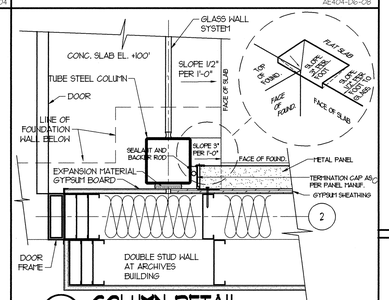
D5 GLASS SILL DETAIL
3" = 1'-0"

AE404-D5-04



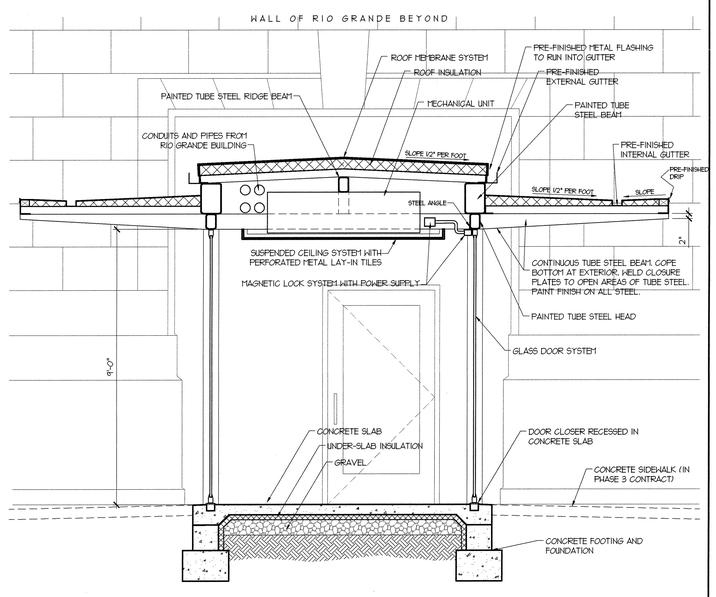
D6 COLUMN DETAIL
1-1/2" = 1'-0"

AE404-D6-08



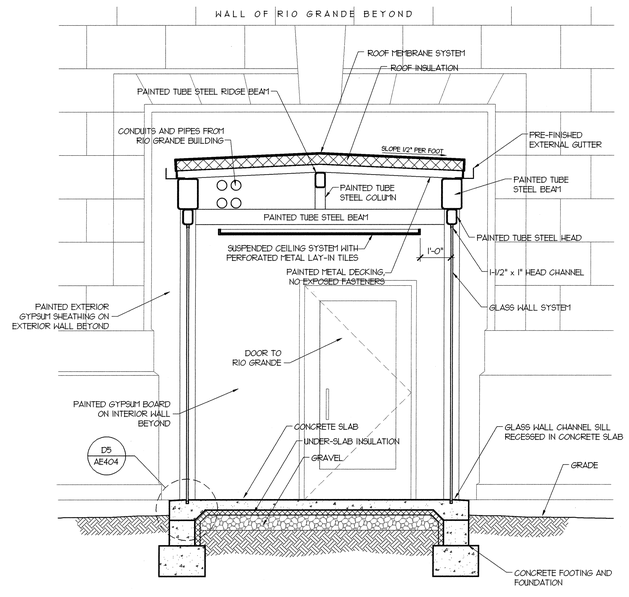
C6 COLUMN DETAIL
1-1/2" = 1'-0"

AE404-C6-08



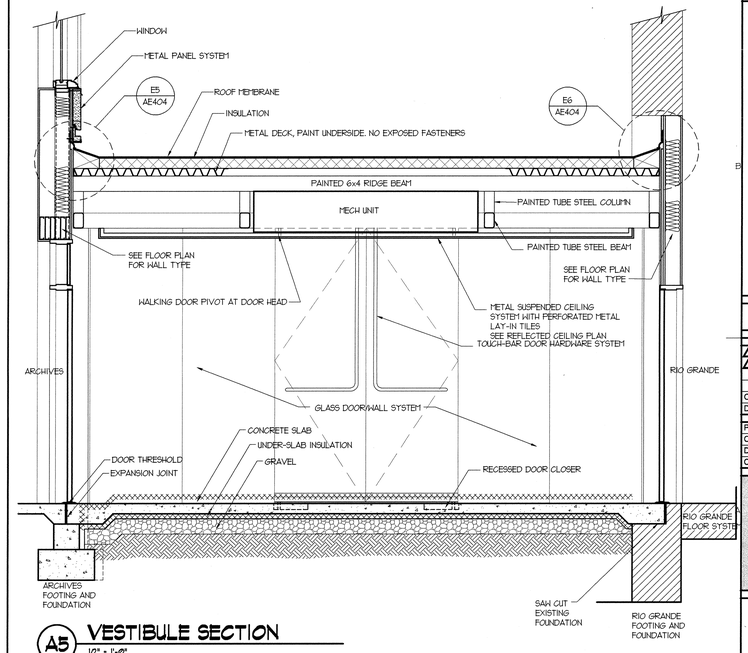
A1 VESTIBULE SECTION
1/2" = 1'-0"

AE404-A1-24



A3 VESTIBULE SECTION
1/2" = 1'-0"

AE404-A1-24



A5 VESTIBULE SECTION
1/2" = 1'-0"

AE404-A1-24

COOPER ROBERTS SIMONSEN ARCHITECTURE

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
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SALT LAKE CITY, UT 84101
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244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

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SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

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300 SOUTH 500 WEST
SALT LAKE CITY UTAH

STATE OF UTAH DIVISION OF FACILITIES AND CONSTRUCTION

4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

BID PACKAGE #2

CD	OCTOBER 1 2003	BID PACKAGE #2
DD	-	-

PROJECT NO: B03-039 ARCHIVES
CAD DWG FILE: P:\B03-039\ARCHIVE\AE404.DWG
DRAWN BY: J.M.
CHECKED BY: -

ENLARGED VESTIBULE PLAN & SECTIONS

AE404

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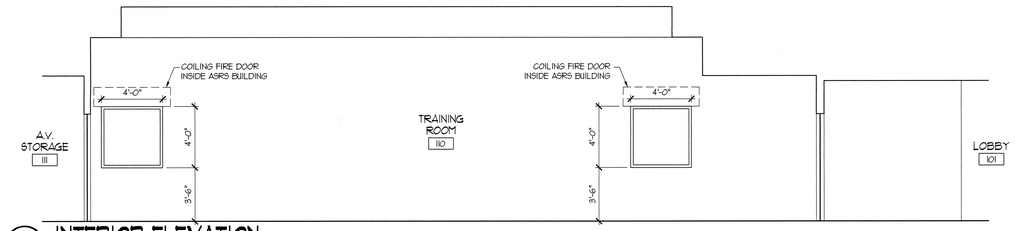
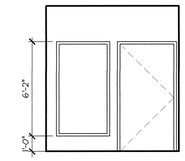


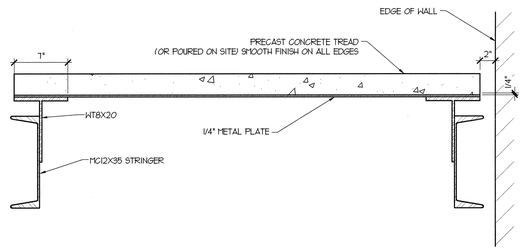
E3 INTERIOR ELEVATION
1/4"=1'-0"

AE403-E6-48



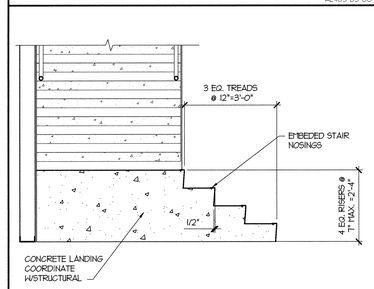
E6 INTERIOR ELEVATION
1/4"=1'-0"

AE403-E6-48



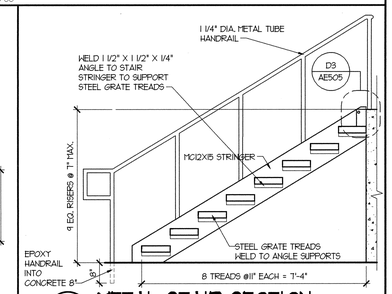
D3 STAIR SECTION @ LOBBY STAIR
1-1/2"=1'-0"

AE403-D3-08



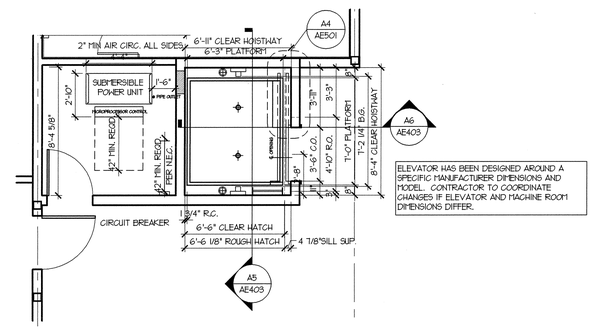
C3 CONC. STAIR SECTION
1/2"=1'-0"

AE403-C4-24



C4 METAL STAIR SECTION
1/2"=1'-0"

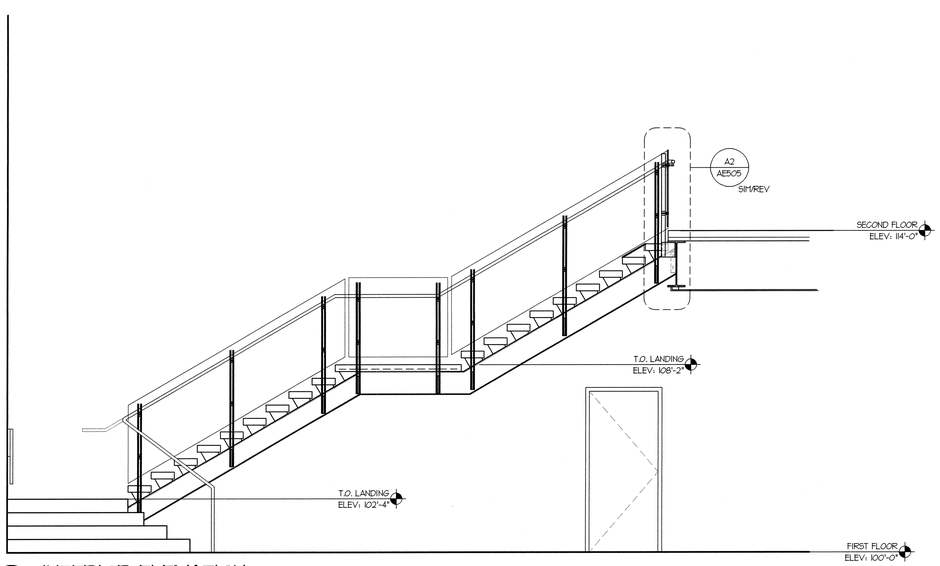
AE403-C4-24



ELEVATOR HAS BEEN DESIGNED AROUND A SPECIFIC MANUFACTURER DIMENSIONS AND MODEL. CONTRACTOR TO COORDINATE CHANGES IF ELEVATOR AND MACHINE ROOM DIMENSIONS DIFFER.

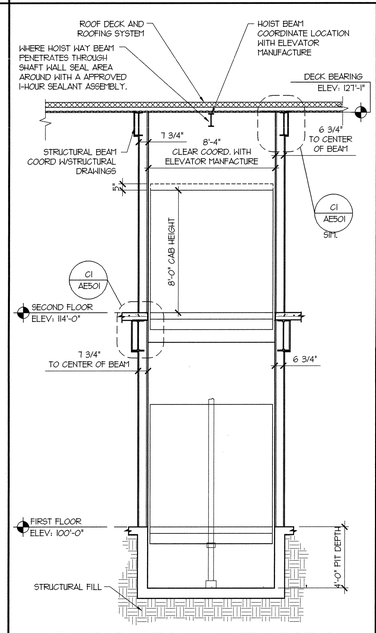
C5 ELEVATOR AND EQUIPMENT ROOM PLAN
1/4" = 1'-0"

AEFPBASE-0196



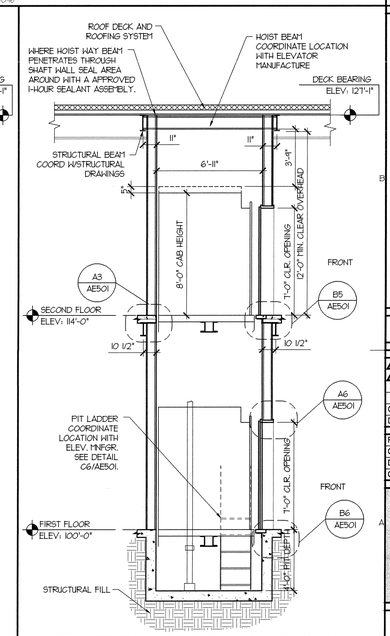
A2 INTERIOR ELEVATION
3/8"=1'-0"

AE403-A2-32



A5 ELEVATOR SHAFT SECTION
1/4"=1'-0"

AE403-A6-48



A6 ELEVATOR SHAFT SECTION
1/4"=1'-0"

AE403-A6-48

COOPER ROBERTS SIMONSEN ARCHITECTURE

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@coea-ut.com

ELECTRICAL ENGINEER
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175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

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STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
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4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

BID PACKAGE #2

CD	OCTOBER 1 2003 BID PACKAGE #2
DD	- -
PROJECT NO:	B03-039 ARCHIVES
CAD DWG FILE:	P:\B03-039\ARCHIVE/AE403.DWG
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ENLARGED STAIR PLAN & SECTIONS

AE403

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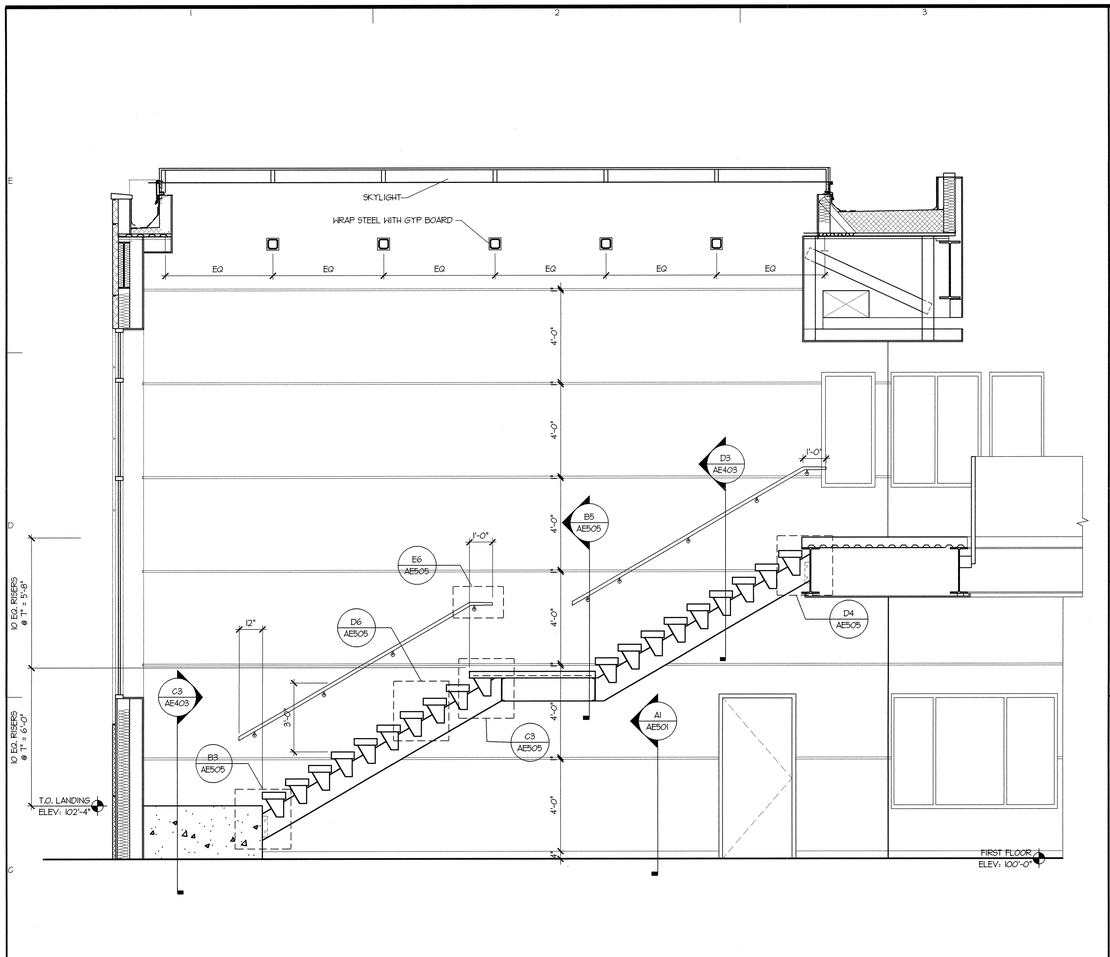
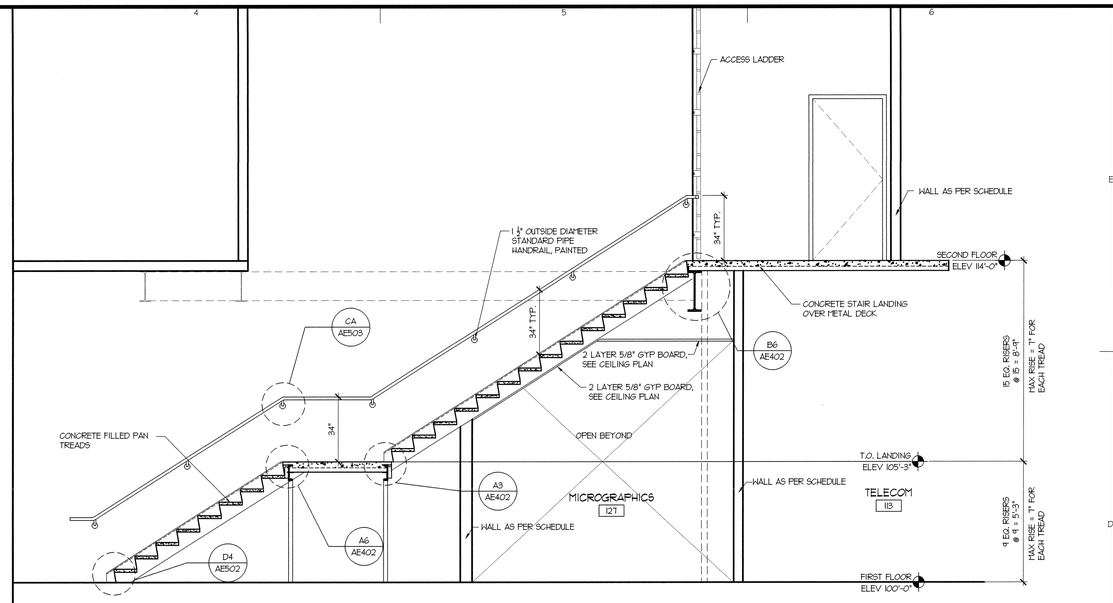


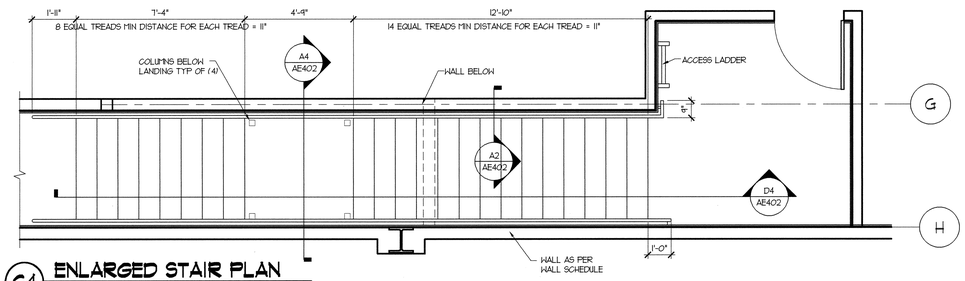
C1 STAIR SECTION
3/8"=1'-0"

AE402-C1-32



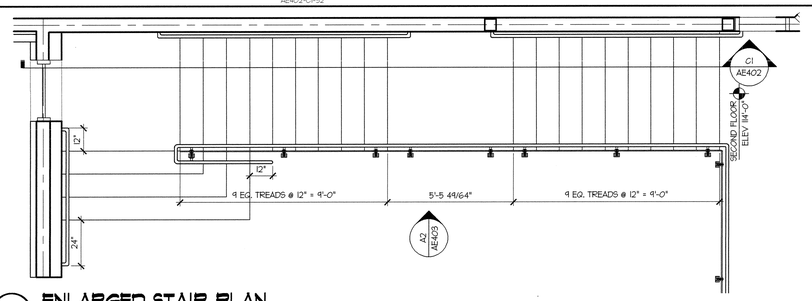
D4 STAIR SECTION
3/8"=1'-0"

AE402-D4-32



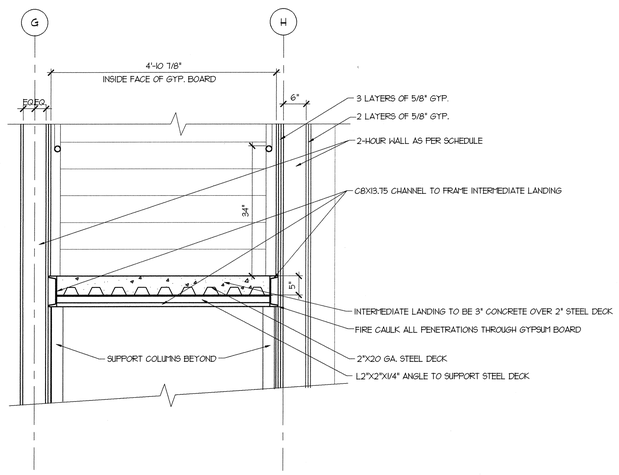
C4 ENLARGED STAIR PLAN
3/8"=1'-0"

AE402-C4-32



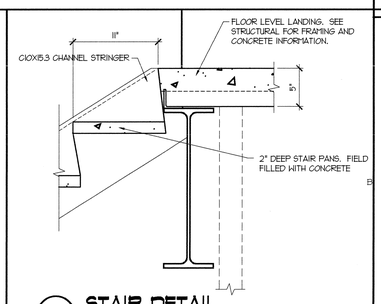
B1 ENLARGED STAIR PLAN
3/8"=1'-0"

AE402-B1-32



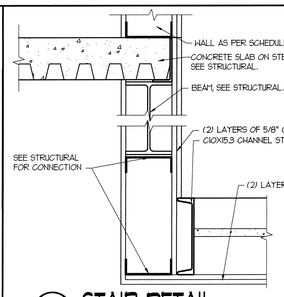
A4 INTERMEDIATE LANDING SECTION
3/4"=1'-0"

AE402-A4-16



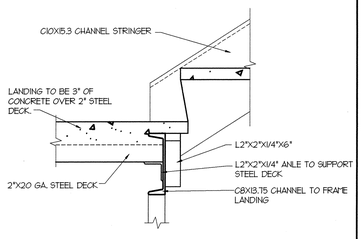
B6 STAIR DETAIL
1-1/2"=1'-0"

AE402-A6-08



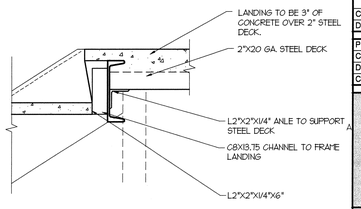
A2 STAIR DETAIL
1-1/2"=1'-0"

AE402-A6-08



A3 STAIR DETAIL
1-1/2"=1'-0"

AE402-A6-08



A6 STAIR DETAIL
1-1/2"=1'-0"

AE402-A6-08

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BID PACKAGE #2

CD	OCTOBER 1 2003	BID PACKAGE #2
DD	-	-

PROJECT NO: B03-039 ARCHIVES
CAD DWG FILE: P:\B03-039\ARCHIVE/AE402.DWG
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ENLARGED STAIR PLAN & SECTION

AE402

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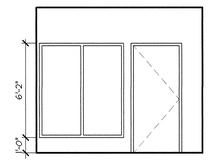
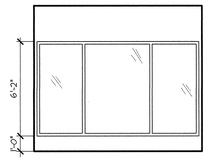


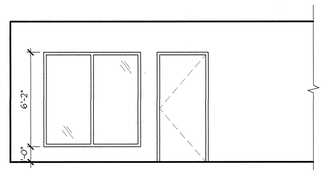
E1 INTERIOR ELEVATION
1/4"=1'-0"

AE401-A1-4B



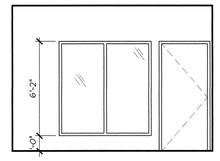
E2 INTERIOR ELEVATION
1/4"=1'-0"

AE401-A1-4B



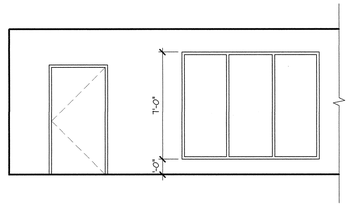
E3 INTERIOR ELEVATION
1/4"=1'-0"

AE401-A1-4B



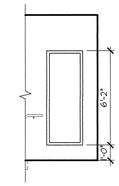
E4 INTERIOR ELEVATION
1/4"=1'-0"

AE401-A1-4B



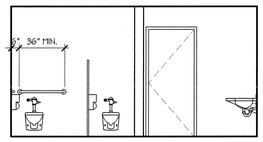
E5 INTERIOR ELEVATION
1/4"=1'-0"

AE401-A1-4B



E6 INTERIOR ELEVATION
1/4"=1'-0"

AE401-A1-4B



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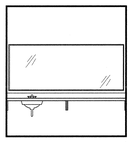

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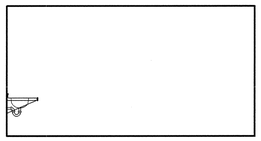

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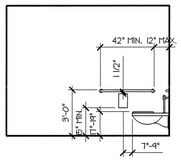
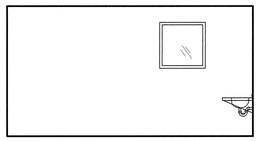


D

D1 WOMENS ROOM # 225
1/4"=1'-0"

AE401-A1-4B



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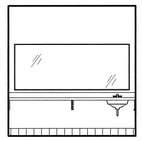

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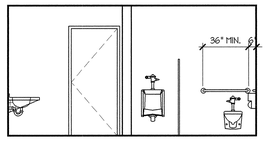

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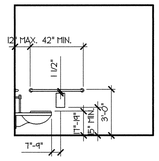
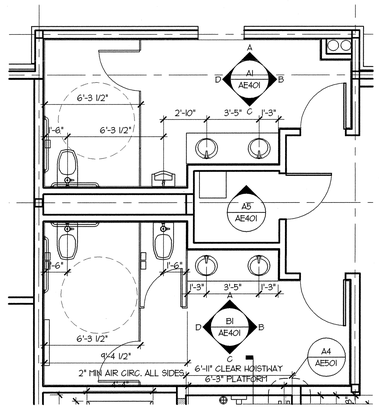


D

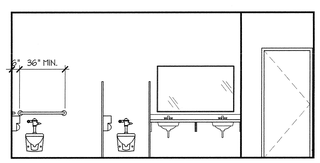
C1 MENS ROOM # 226
1/4"=1'-0"

AE401-A1-4B



FOR REFERENCE ONLY
FIXTURES TO SHOW LOCATION ONLY

C5 ENLARGED FLOOR PLAN - WOMEN'S 124 -MEN'S 126 -CUSTODIAL 125
1/4"=1'-0"



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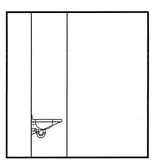

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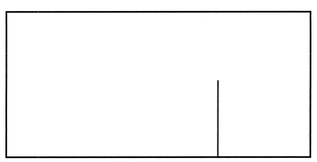

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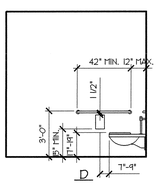

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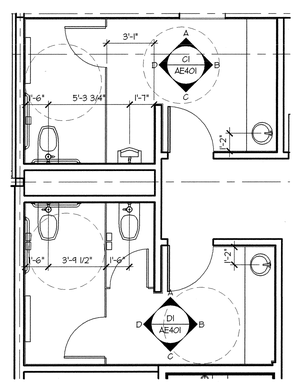
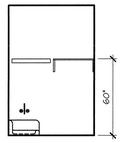
B1 WOMEN'S ROOM # 124
1/4"=1'-0"

AE401-A1-4B



FOR REFERENCE ONLY
FIXTURES TO SHOW LOCATION ONLY

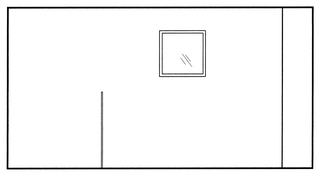
A5 ENLARGED FLOOR PLAN - WOMEN'S 225 - MEN'S 226
1/4"=1'-0"



NOTE: ONE ROW OF TILE BEYOND EDGE OF JANITOR SINK

E1 JANITOR/CHASE ROOM
1/4"=1'-0"

AE401-A1-4B



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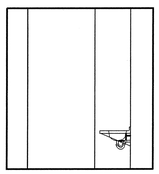

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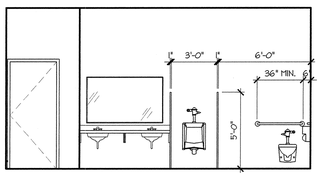

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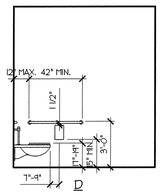

D

A1 MENS ROOM # 126
1/4"=1'-0"

AE401-A1-4B

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SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
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STRUCTURAL ENGINEER
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SALT LAKE CITY, UTAH

BID PACKAGE #2

CD	OCTOBER 1 2003	BID PACKAGE #2
DD	-	-

PROJECT NO: B03-039 ARCHIVES
CAD DWG FILE: P:\B03-039\ARCHIVE/AE401.DWG
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ENLARGED PLANS & INTERIOR ELEVATIONS

AE401

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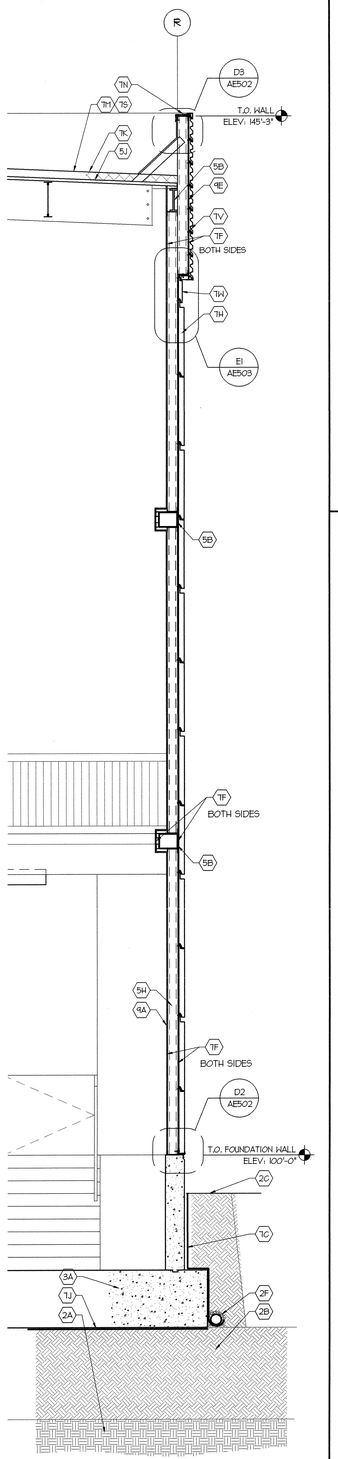
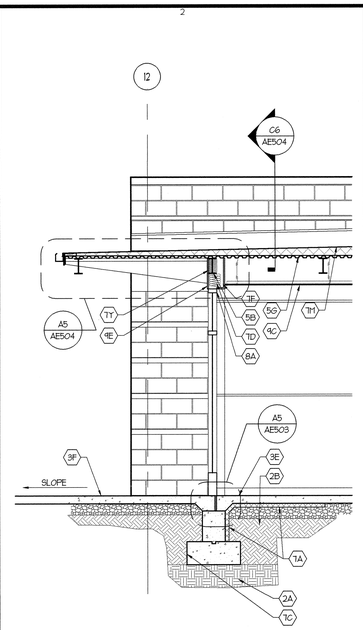


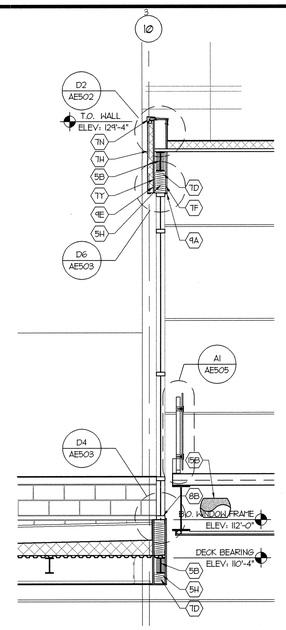
A1 WALL SECTION
3/8" = 1'-0"

AE306-A1-32



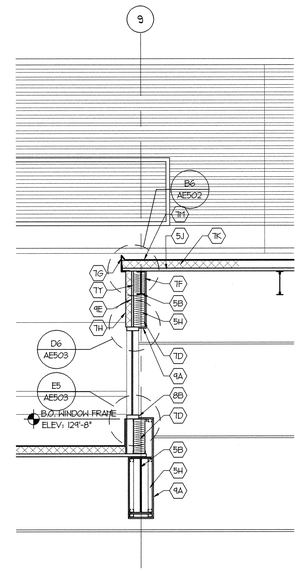
D2 WALL SECTION
3/8" = 1'-0"

AE306-A1-32



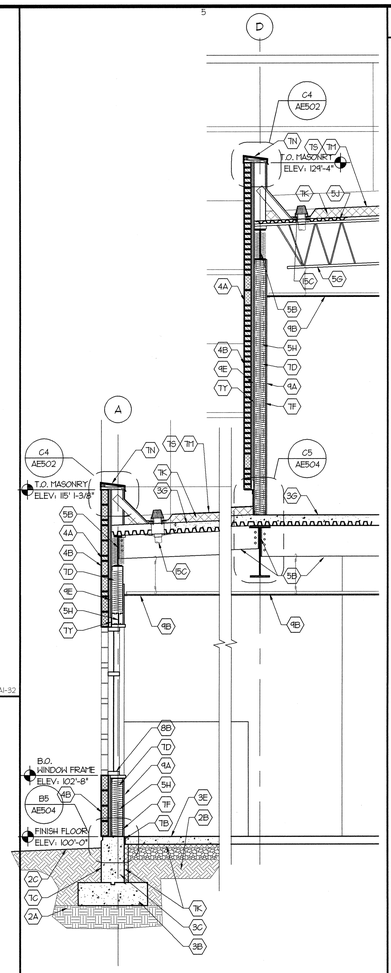
D3 WALL SECTION
3/8" = 1'-0"

AE306-A1-32



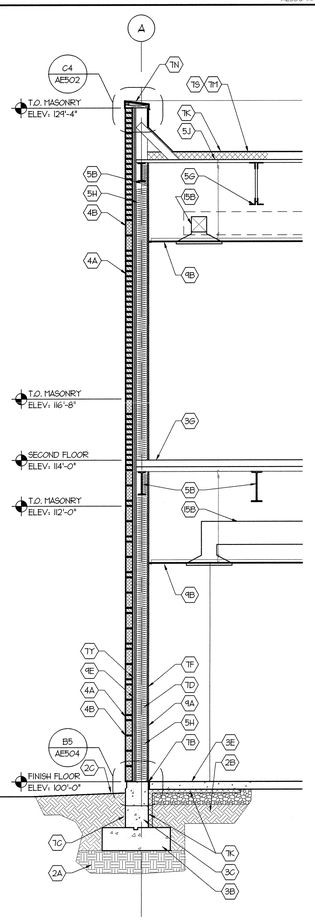
D4 WALL SECTION
3/8" = 1'-0"

AE306-A1-32



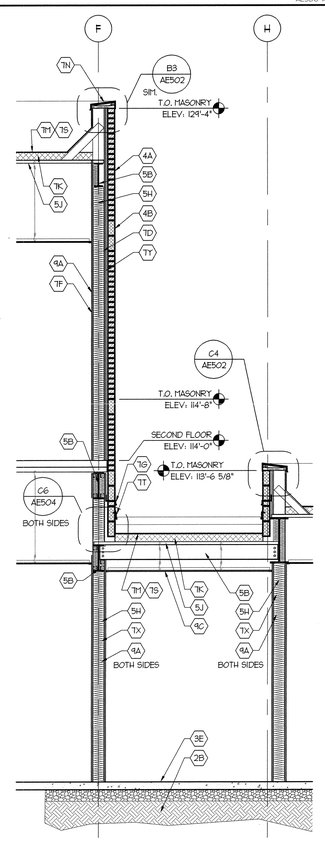
C5 WALL SECTION
3/8" = 1'-0"

AE306-A1-32



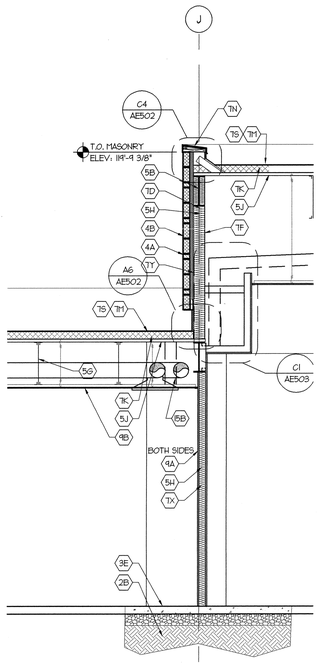
A2 WALL SECTION
3/8" = 1'-0"

AE306-A1-32



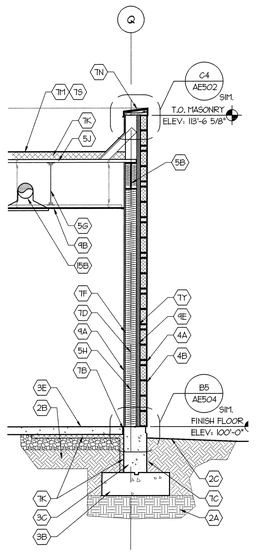
A3 WALL SECTION
3/8" = 1'-0"

AE306-A1-32



A4 WALL SECTION
3/8" = 1'-0"

AE306-A1-32



A5 WALL SECTION
3/8" = 1'-0"

AE306-A1-32

SECTION REFERENCE NOTES

02 SITEWORK

2A UNDISTURBED EARTH
2B COMPACTED STRUCTURAL FILL
2C FINISH GRADE
2D CONCRETE MOW STRIP
2E GRAVEL BASE
2F PERFORATED PIPE WRAPPED WITH FILTER FABRIC, SURROUNDED WITH GRAVEL - COORDINATE WITH PLUMBING PLANS

03 CONCRETE

3A REINFORCED MAT CONCRETE FOOTING
3B REINFORCED CONCRETE FOOTING
3C REINFORCED CONCRETE FOUNDATION WALL
3D NOT USED
3E CONCRETE SLAB ON GRAVEL BASE
3F CONCRETE SIDEWALK
3G CONCRETE SLAB OVER METAL DECK
3H CONCRETE REVEAL

04 MASONRY

4A BRICK VENEER - COLOR TAI
4B CONCRETE MASONRY UNIT - COLOR CMU1

05 METALS

5A STEEL TUBE
5B STEEL BEAM
5C STEEL ANGLE
5D STEEL LINTEL - COORD. WITH STRUCTURAL
5E NOT USED
5F GUARDRAILS WITH GLASS PANELS
5G STEEL JOISTS - COORD. WITH STRUCTURAL
5H METAL STUD FRAMING, SEE WALL FRAMING PLAN
5J METAL DECK
5K METAL ACCESS LADDER
5L 1½" STANDARD PIPE GUARDRAIL, PAINTED
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06 WOOD & PLASTICS

6A SHAPED 2x WOOD NAILER

07 THERMAL & MOISTURE PROTECTION

7A 2" RIGID BOARD INSULATION CONT. @ EXTERIOR FOUNDATION WALL
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7C FOUNDATION FLUID APPLIED WATERPROOFING SYSTEM
7D BATT. INSULATION
7E ROOF HATCH
7F VAPOR BARRIER FOR WALLS
7G PREFINISHED METAL FLASHING
7H 3" INSULATED METAL PANEL CLADDING SYSTEM - COLOR EP2
7J UNDER-SLAB VAPOR BARRIER SYSTEM
7K RIGID BOARD INSULATION
7L ROOF TO WALL TERMINATION AS PER ROOF MANUF. DETAIL
7M SINGLE PLY ROOF MEMBRANE SYSTEM
7N PREFINISHED METAL COPING
7P EXPANSION JOINT - DETAIL PER STANDARD
7Q PREFINISHED METAL RAINGUTTER & DOWN SPOUT
7R PREFINISHED METAL ROOF SYSTEM
7S ROOF BOARD - SEE ROOF PLAN
7T PREFINISHED METAL REGLET
7U METAL LAMB'S TONGUE SCUPPER
7V RIBBED METAL PANEL CLADDING SYSTEM - COLOR EP1
7W 2" REVEAL INSULATED METAL PANEL CLADDING SYSTEM - COLOR EP3
7X SOUND BATT. INSULATION, COORDINATE WITH WALL FRAMING PLANS
7Y AIR INFILTRATION BARRIER

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8B WINDOW & FRAME, COORDINATE WITH FLOOR PLAN AND WINDOW SCHEDULE
8C GLASS WALL SYSTEM
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9D WALL BASE
9E EXTERIOR GRADE GYPSUM SHEATHING

12 FURNISHINGS

12A FUTURE MILLWORK (MILLWORK NOT IN THIS CONTRACT)
12B EXTERIOR ENTRY MAT

14 CONVEY SYSTEM

14A HYDRAULIC ELEVATOR SYSTEM

15 MECHANICAL

15A MECHANICL LOUVER
15B MECHANICAL DUCT
15C ROOF DRAIN

SECTION GENERAL NOTES

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COOPER ROBERTS SIMONSEN ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@ces-ut.com

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kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
SALT LAKE CITY UTAH

STATE OF UTAH DIVISION OF FACILITIES AND CONSTRUCTION

4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

BID PACKAGE #2

CD	OCTOBER 1 2003	BID PACKAGE #2
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PROJECT NO: B03-039 ARCHIVES
CAD DWG FILE: P:/B03-039/ARCHIVES/AE304
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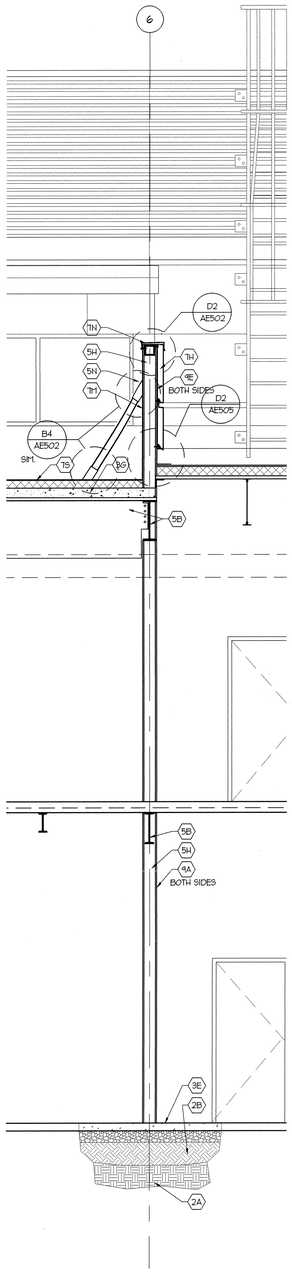
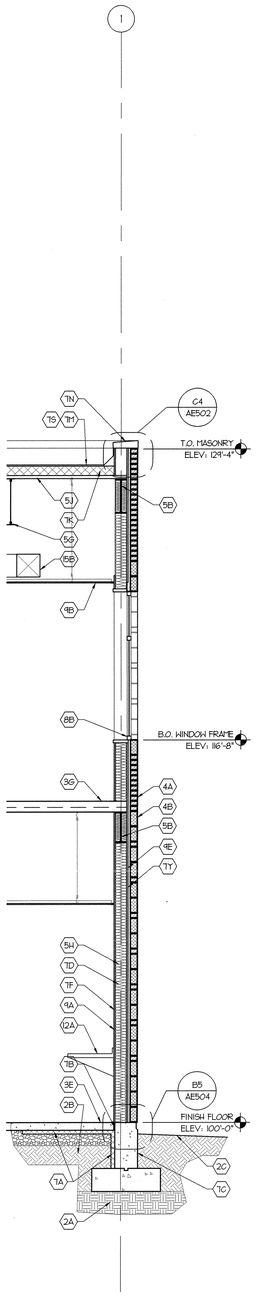
CHECKED BY: -

WALL SECTIONS

AE306



A1 WALL SECTION
3/8" = 1'-0"



A2 WALL SECTION
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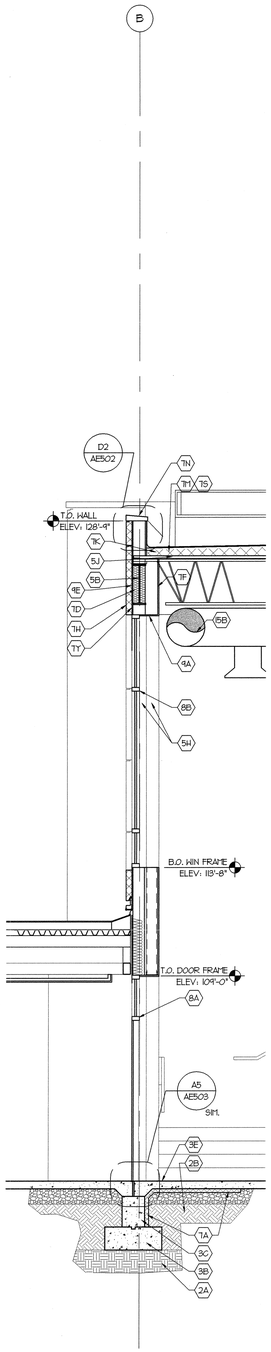
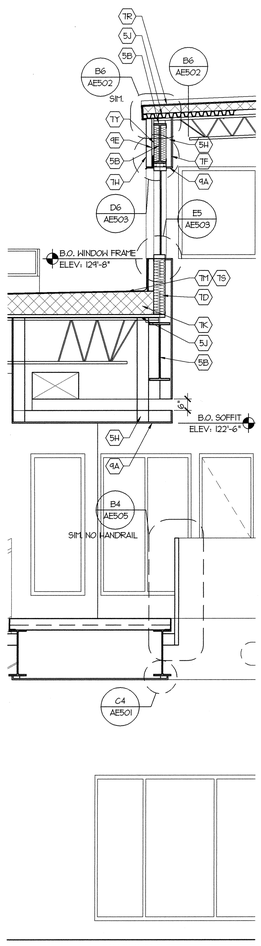
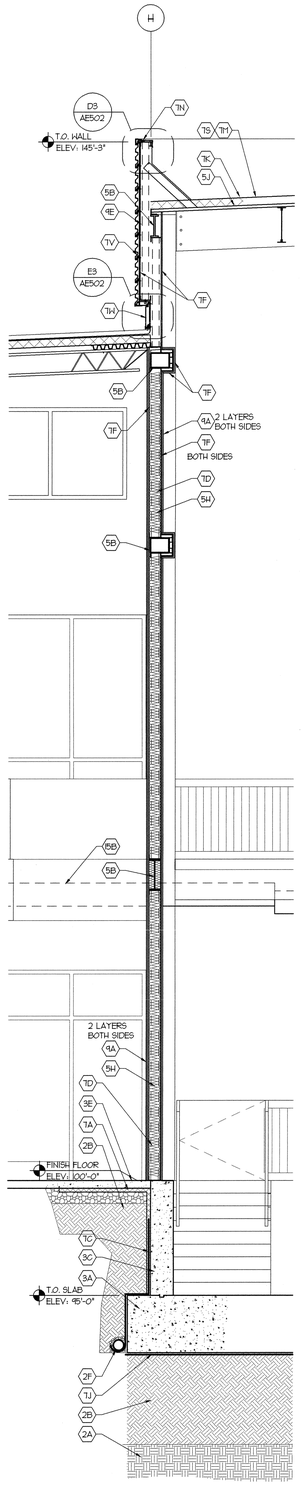


A3 WALL SECTION
3/8" = 1'-0"



A4 WALL SECTION
3/8" = 1'-0"



A5 WALL SECTION
3/8" = 1'-0"

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15B MECHANICAL DUCT
15C ROOF DRAIN

SECTION GENERAL NOTES

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COOPER
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ARCHITECTURE

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COLVIN ENGINEERING
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SALT LAKE CITY, UT 84103
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300 SOUTH 500 WEST
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4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

BID PACKAGE #2

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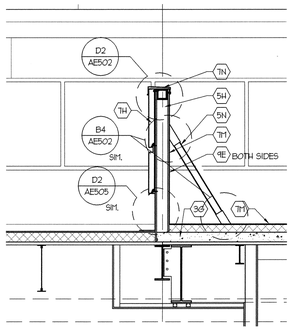
CAD DWG FILE: PJB03-039\ARCHIVES\AE304
DRAWN BY: DTN
CHECKED BY: -

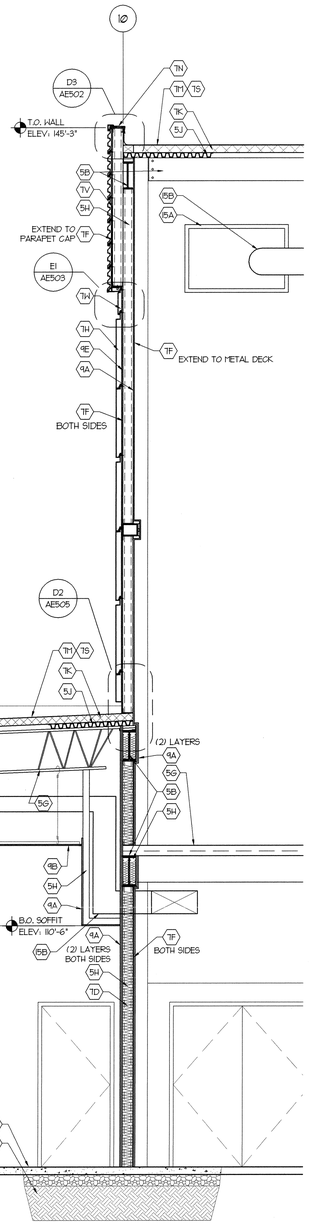
WALL SECTIONS

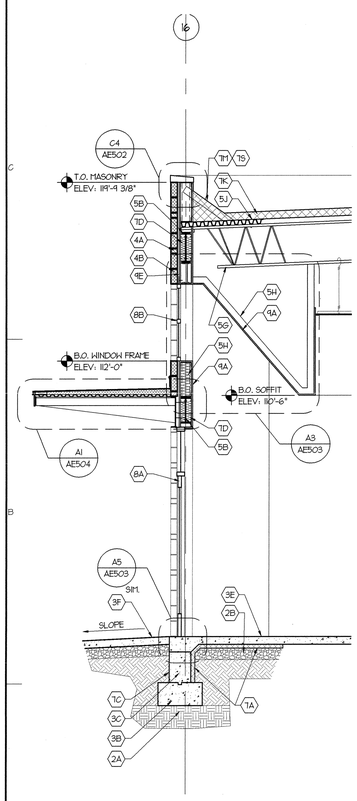
AE305



D1 WALL SECTION
3/8" = 1'-0"

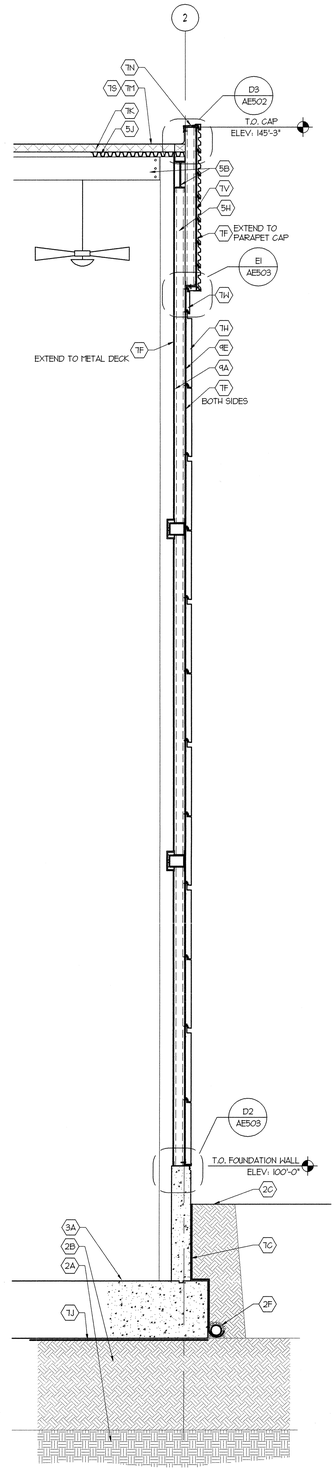
AE304-A1-32





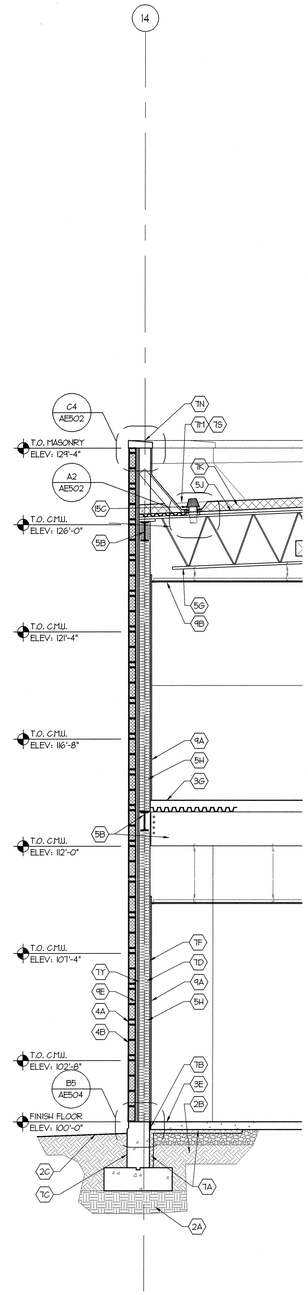
A1 WALL SECTION
3/8" = 1'-0"

AE304-A1-32



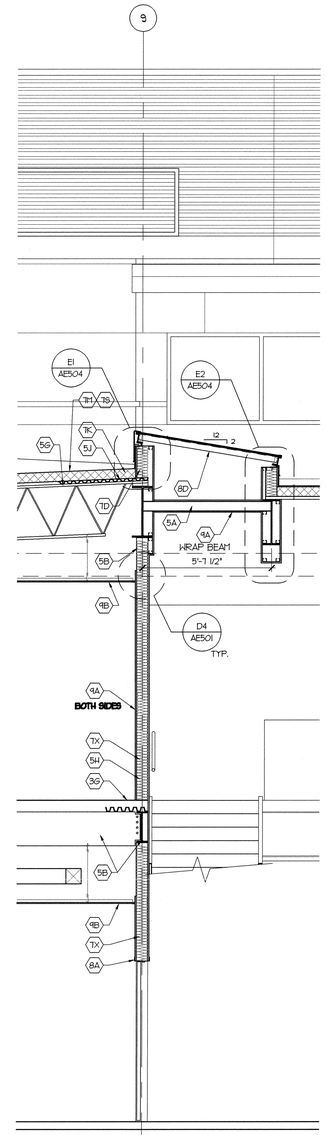
A3 WALL SECTION
3/8" = 1'-0"

AE304-A1-32



A4 WALL SECTION
3/8" = 1'-0"

AE304-A1-32



A5 WALL SECTION
3/8" = 1'-0"

AE304-A1-32

SECTION REFERENCE NOTES

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2B COMPACTED STRUCTURAL FILL
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PROJECT NO: B03-039 ARCHIVES
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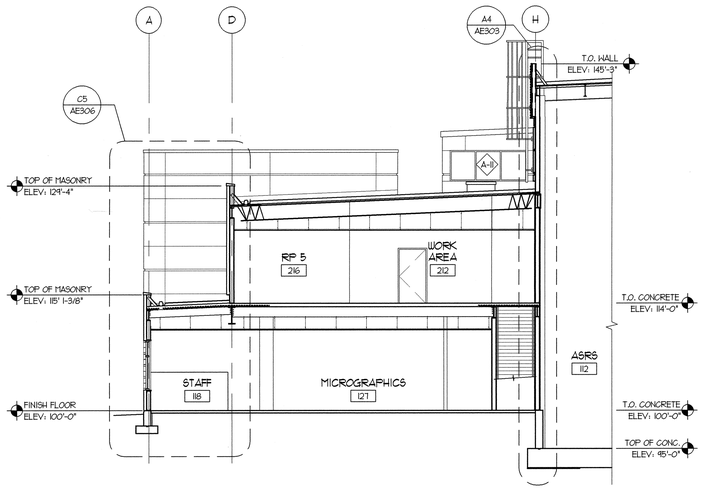
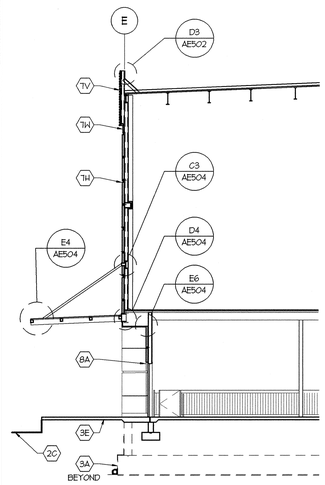
WALL SECTIONS

AE304



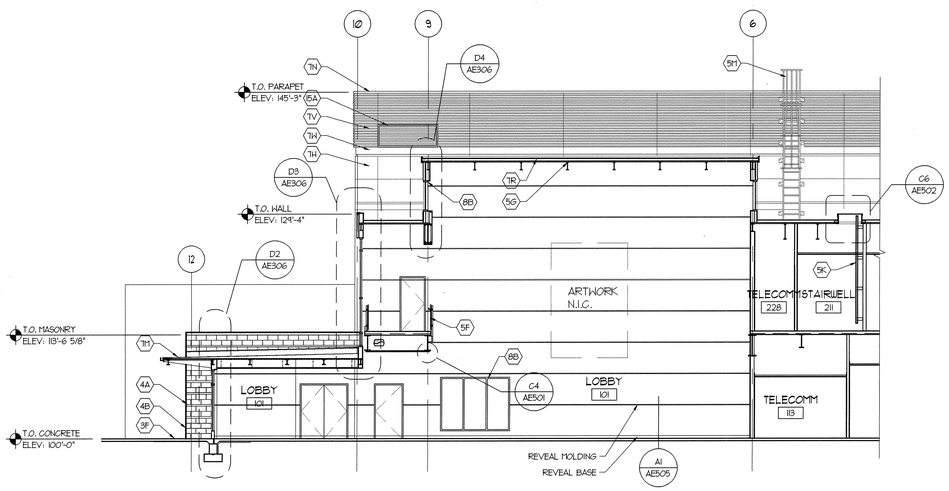
C1 BUILDING SECTION
1/8" = 1'-0"

AE301-C1-96



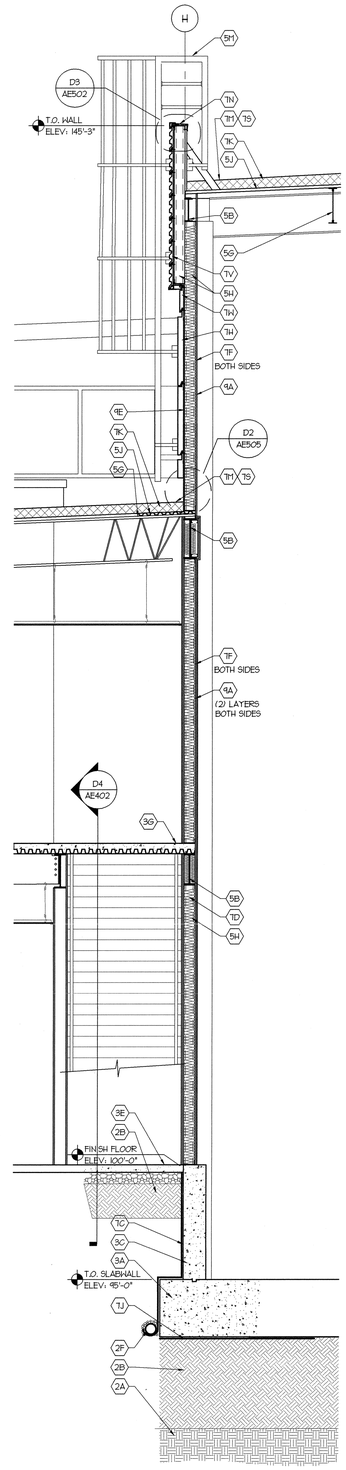
C3 PARTIAL BUILDING SECTION
1/8" = 1'-0"

AE303-C3-96



A1 BUILDING SECTION
1/8"=1'-0"

AE303-A1-96



A4 WALL SECTION
3/8"=1'-0"

AE303-A1-96

SECTION REFERENCE NOTES

02 SITEWORK

2A UNDISTURBED EARTH
2B COMPACTED STRUCTURAL FILL
2C FINISH GRADE
2D CONCRETE MOM STRIP
2E GRAVEL BASE
2F PERFORATED PIPE WRAPPED WITH FILTER FABRIC, SURROUNDED WITH GRAVEL - COORDINATE WITH PLUMBING PLANS

03 CONCRETE

3A REINFORCED MAT CONCRETE FOOTING
3B REINFORCED CONCRETE FOOTING
3C REINFORCED CONCRETE FOUNDATION WALL
3D NOT USED
3E CONCRETE SLAB ON GRAVEL BASE
3F CONCRETE SIDEWALK
3G CONCRETE SLAB OVER METAL DECK
3H CONCRETE REVEAL

04 MASONRY

4A BRICK VENEER - COLOR MAI
4B CONCRETE MASONRY UNIT - COLOR CMU

05 METALS

5A STEEL TUBE
5B STEEL BEAM
5C STEEL ANGLE
5D STEEL LINTEL - COORD. WITH STRUCTURAL
5E NOT USED
5F GUARDRAILS WITH GLASS PANELS
5G STEEL JOISTS - COORD. WITH STRUCTURAL
5H METAL STUD FRAMING, SEE WALL FRAMING PLAN
5J METAL DECK
5K METAL ACCESS LADDER
5L ½" STANDARD PIPE GUARDRAIL, PAINTED
5R1 METAL ROOF ACCESS LADDER
5N STEEL PIPE SUPPORT - SEE ROOF PLAN AND STRUCTURAL DRAWINGS

06 WOOD & PLASTICS

6A SHAPED 2x WOOD NAILER

07 THERMAL & MOISTURE PROTECTION

7A 2" RIGID BOARD INSULATION CONT. @ EXTERIOR FOUNDATION WALL
7B 1/2" MINERAL FIBER EXPANSION JOINT
7C FOUNDATION FLUID APPLIED WATERPROOFING SYSTEM
7D BATT. INSULATION
7E ROOF HATCH
7F VAPOR BARRIER FOR WALLS
7G PREFINISHED METAL FLASHING
7H 2" INSULATED METAL PANEL CLADDING SYSTEM - COLOR EP2
7J UNDER-SLAB VAPOR BARRIER SYSTEM
7K RIGID BOARD INSULATION
7L ROOF TO WALL TERMINATION AS PER ROOF MANUF. DETAIL
7M SINGLE PLY ROOF MEMBRANE SYSTEM
7N PREFINISHED METAL COPING
7P EXPANSION JOINT - DETAIL PER STANDARD
7Q PREFINISHED METAL RAINGUTTER & DOWN SPOUT
7R PREFINISHED METAL ROOF SYSTEM
7S ROOF BOARD - SEE ROOF PLAN
7T PREFINISHED METAL REGLET
7U METAL LAMB'S TONGUE SCUPPER
7V RIBBED METAL PANEL CLADDING SYSTEM - COLOR EP1
7W 2" REVEAL INSULATED METAL PANEL CLADDING SYSTEM - COLOR EP3
7X SOUND BATT. INSULATION, COORDINATE WITH WALL FRAMING PLANS
7Y AIR INFILTRATION BARRIER

08 DOORS & WINDOWS

8A DOOR & FRAME, COORDINATE WITH FLOOR PLAN AND DOOR SCHEDULE
8B WINDOW & FRAME, COORDINATE WITH FLOOR PLAN AND WINDOW SCHEDULE
8C GLASS WALL SYSTEM
8D GLASS SKYLIGHT

09 FINISHES

9A GYPSUM BOARD
9B SUSPENDED ACOUSTICAL CEILING
9C SUSPENDED GYPSUM BOARD CEILING SYSTEM
9D WALL BASE
9E EXTERIOR GRADE GYPSUM SHEATHING

12 FURNISHINGS

12A FUTURE MILLWORK (MILLWORK NOT IN THIS CONTRACT)
12B EXTERIOR ENTRY MAT

14 CONVEY SYSTEM

14A HYDRAULIC ELEVATOR SYSTEM

15 MECHANICAL

15A MECHANICL LOUVER
15B MECHANICAL DUCT
15C ROOF DRAIN

SECTION GENERAL NOTES

1. SEE G1002 FOR REQUIRED FIRE RATED ASSEMBLIES (WALL & CEILING)

2. STRUCTURAL AND MECHANICAL INFORMATION HAS BEEN SHOWN FOR REFERENCE ONLY. FOR ACTUAL SIZES AND LOCATIONS SEE STRUCTURAL AND MECHANICAL DRAWINGS.

COOPER
ROBERTS
SIMONSEN
ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8481 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
SALT LAKE CITY UTAH

STATE OF UTAH
DIVISION OF
FACILITIES AND
CONSTRUCTION

4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

BID PACKAGE #2

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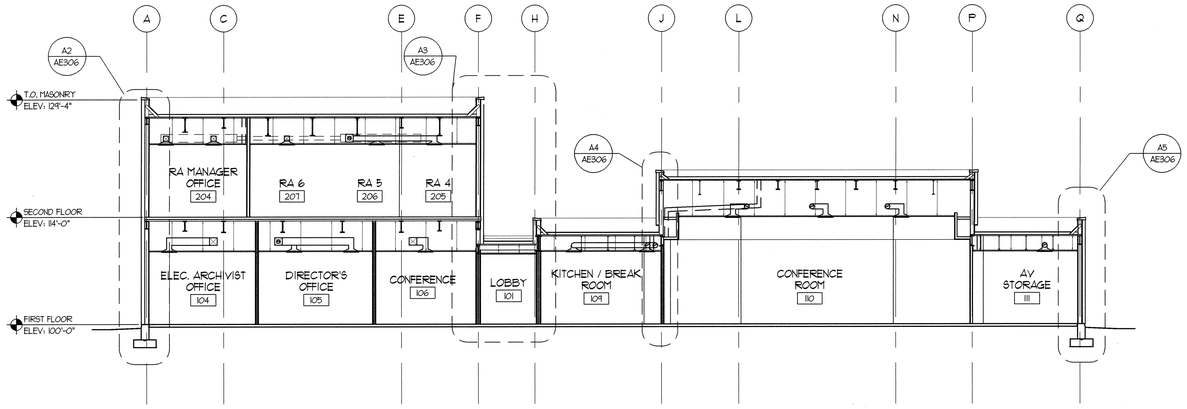
BUILDING SECTIONS

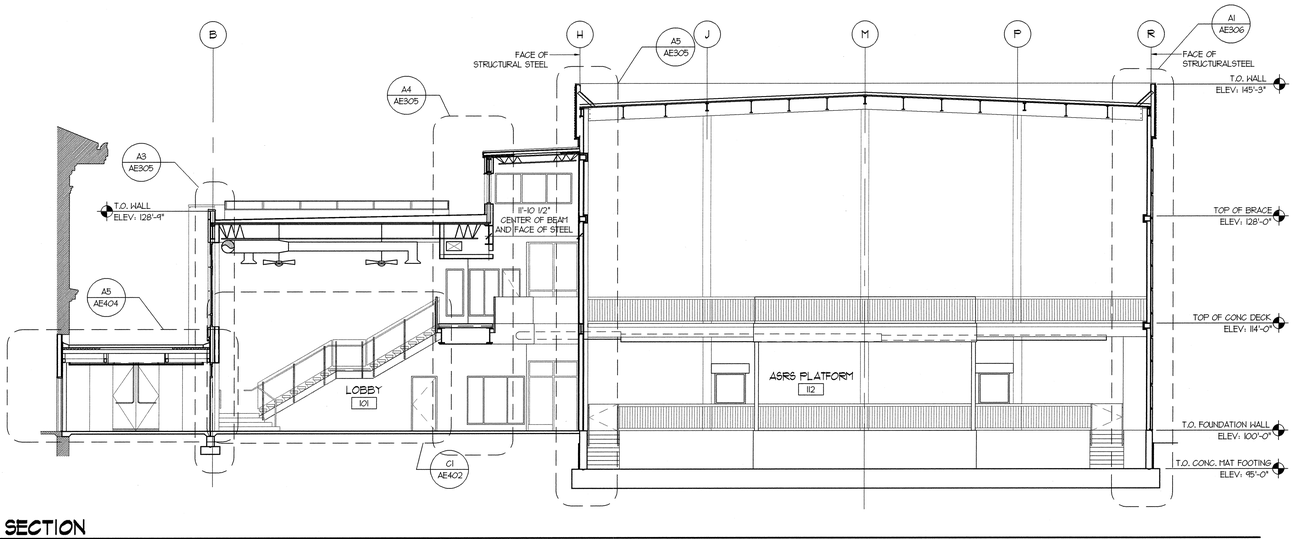
AE303



C1 BUILDING SECTION

1/8" = 1'-0"

AE302-A1-96



A1 BUILDING SECTION

1/8" = 1'-0"

AE302-A1-96

SECTION REFERENCE NOTES

02 SITEWORK

2A UNDISTURBED EARTH
2B COMPACTED STRUCTURAL FILL
2C FINISH GRADE
2D CONCRETE MOW STRIP
2E GRAVEL BASE
2F PERFORATED PIPE WRAPPED WITH FILTER FABRIC, SURROUNDED WITH GRAVEL - COORDINATE WITH PLUMBING PLANS

03 CONCRETE

3A REINFORCED MAT CONCRETE FOOTING
3B REINFORCED CONCRETE FOOTING
3C REINFORCED CONCRETE FOUNDATION WALL
3D NOT USED
3E CONCRETE SLAB ON GRAVEL BASE
3F CONCRETE SIDEWALK
3G CONCRETE SLAB OVER METAL DECK
3H CONCRETE REVEAL

04 MASONRY

4A BRICK VENEER - COLOR MA1
4B CONCRETE MASONRY UNIT - COLOR CMU1

05 METALS

5A STEEL TUBE
5B STEEL BEAM
5C STEEL ANGLE
5D STEEL LINTEL - COORD. WITH STRUCTURAL
5E NOT USED
5F GUARDRAILS WITH GLASS PANELS
5G STEEL JOISTS - COORD. WITH STRUCTURAL
5H METAL STUD FRAMING
5J METAL DECK
5K METAL ACCESS LADDER
5L 1½" STANDARD PIPE GUARDRAIL, PAINTED
5M METAL ROOF ACCESS LADDER
5N STEEL PIPE SUPPORT - SEE ROOF PLAN

06 WOOD & PLASTICS

6A SHAPED 2x WOOD NAILER

07 THERMAL & MOISTURE PROTECTION

7A 2" RIGID BOARD INSULATION CONT. @ EXTERIOR FOUNDATION WALL
7B 1/2" MINERAL FIBER EXPANSION JOINT
7C FOUNDATION FLUID APPLIED WATERPROOFING SYSTEM
7D BATT. INSULATION
7E ROOF HATCH
7F VAPOR BARRIER FOR WALLS
7G PREFINISHED METAL FLASHING
7H 3" INSULATED METAL PANEL CLADDING SYSTEM - COLOR EP2
7J UNDER-SLAB VAPOR BARRIER SYSTEM
7K RIGID BOARD INSULATION
7L ROOF TO WALL TERMINATION AS PER ROOF MANUF. DETAIL
7M SINGLE PLY ROOF MEMBRANE SYSTEM
7N PREFINISHED METAL COPING
7P EXPANSION JOINT - DETAIL PER STANDARD
7Q PREFINISHED METAL RAINGUTTER & DOWN SPOUT
7R PREFINISHED METAL ROOF SYSTEM
7S ROOF BOARD - SEE ROOF PLAN
7T PREFINISHED METAL REGLET
7U METAL LAMB'S TONGUE SCUPPER
7V RIBBED METAL PANEL CLADDING SYSTEM - COLOR EP1
7W 2" REVEAL INSULATED METAL PANEL CLADDING SYSTEM - COLOR EP3
7X SOUND BATT. INSULATION
7Y AIR INFILTRATION BARRIER

08 DOORS & WINDOWS

8A DOOR & FRAME, COORDINATE WITH FLOOR PLAN AND DOOR SCHEDULE
8B WINDOW & FRAME, COORDINATE WITH FLOOR PLAN AND WINDOW SCHEDULE
8C GLASS WALL SYSTEM
8D GLASS SKYLIGHT

09 FINISHES

9A GYPSUM BOARD
9B SUSPENDED ACOUSTICAL CEILING
9C SUSPENDED GYPSUM BOARD CEILING SYSTEM
9D WALL BASE
9E EXTERIOR GRADE GYPSUM SHEATHING

12 FURNISHINGS

12A MILLWORK
12B EXTERIOR ENTRY MAT

14 CONVEY SYSTEM

14A HYDRAULIC ELEVATOR SYSTEM

15 MECHANICAL

15A MECHANICL LOUVER
15B MECHANICAL DUCT
15C ROOF DRAIN

SECTION GENERAL NOTES

1. SEE G002 FOR REQUIRED FIRE RATED ASSEMBLIES (WALL & CEILING)

2. STRUCTURAL AND MECHANICAL INFORMATION HAS BEEN SHOWN FOR REFERENCE ONLY. FOR ACTUAL SIZES AND LOCATIONS SEE STRUCTURAL AND MECHANICAL DRAWINGS.

COOPER ROBERTS SIMONSEN ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@ceia-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-8471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
SALT LAKE CITY UTAH

STATE OF UTAH DIVISION OF FACILITIES AND CONSTRUCTION

4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

BID PACKAGE #2

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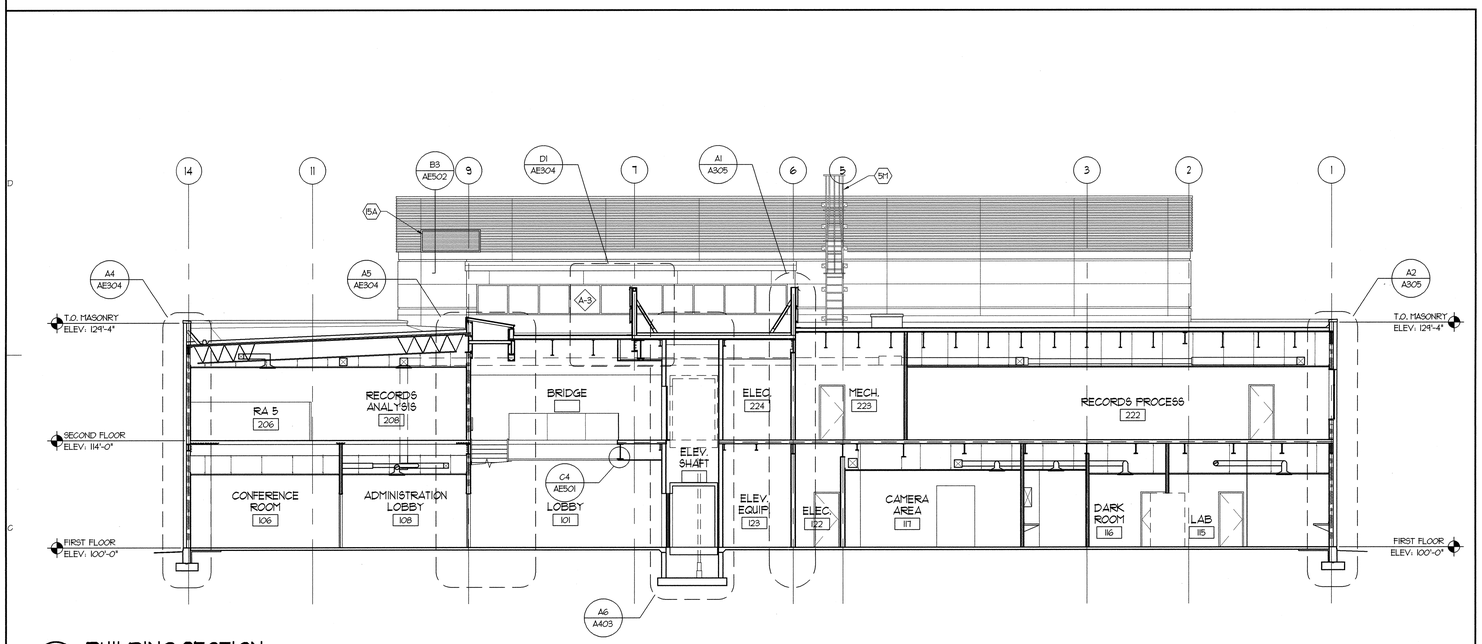
BUILDING SECTIONS

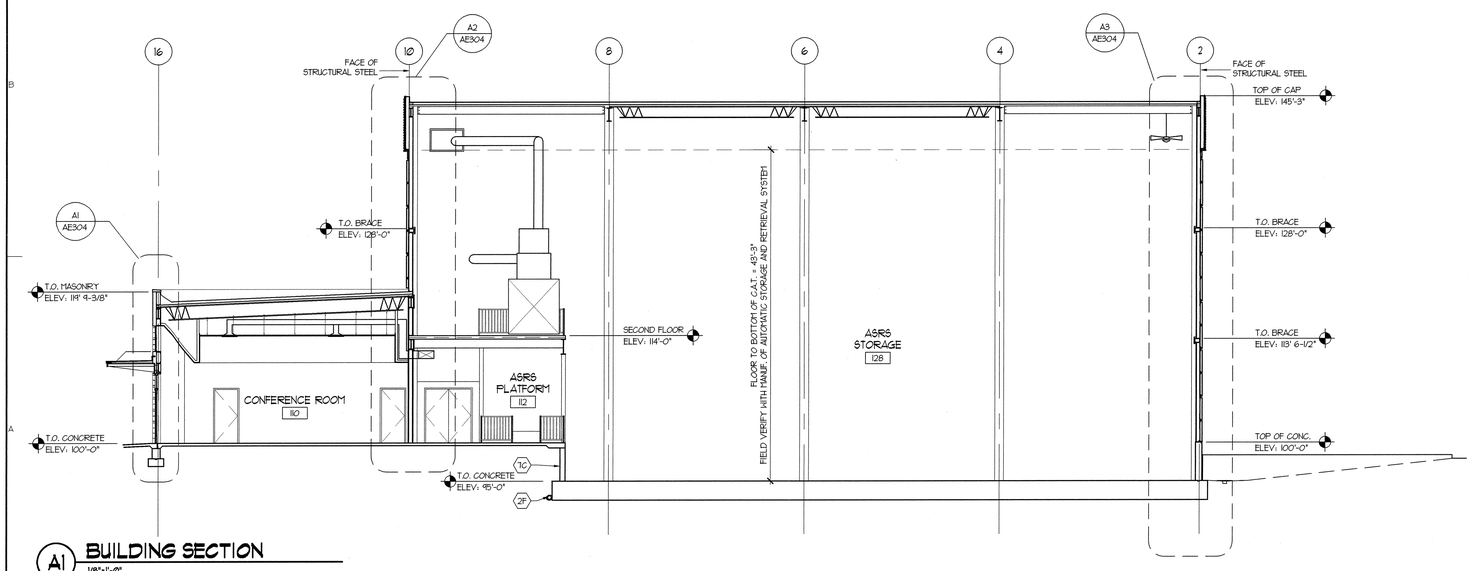
AE302



C1 BUILDING SECTION

1/8" = 1'-0"

AE301-C1-96



A1 BUILDING SECTION

1/8"=1'-0"

AE301-A1-96

SECTION REFERENCE NOTES

02 SITEWORK

2A UNDISTURBED EARTH
2B COMPACTED STRUCTURAL FILL
2C FINISH GRADE
2D CONCRETE MOW STRIP
2E GRAVEL BASE
2F PERFORATED PIPE WRAPPED WITH FILTER FABRIC, SURROUNDED WITH GRAVEL - COORDINATE WITH PLUMBING PLANS

03 CONCRETE

3A REINFORCED MAT CONCRETE FOOTING
3B REINFORCED CONCRETE FOOTING
3C REINFORCED CONCRETE FOUNDATION WALL
3D NOT USED
3E CONCRETE SLAB ON GRAVEL BASE
3F CONCRETE SIDEWALK
3G CONCRETE SLAB OVER METAL DECK
3H CONCRETE REVEAL

04 MASONRY

4A BRICK VENEER - COLOR MAI
4B CONCRETE MASONRY UNIT - COLOR CMU

05 METALS

5A STEEL TUBE
5B STEEL BEAM
5C STEEL ANGLE
5D STEEL LINTEL - COORD. WITH STRUCTURAL
5E NOT USED
5F GUARDRAILS WITH GLASS PANELS
5G STEEL JOISTS - COORD. WITH STRUCTURAL
5H METAL STUD FRAMING
5J METAL DECK
5K METAL ACCESS LADDER
5L 1½" STANDARD PIPE GUARDRAIL, PAINTED
5M METAL ROOF ACCESS LADDER
5N STEEL PIPE SUPPORT - SEE ROOF PLAN

06 WOOD & PLASTICS

6A SHAPED 2x WOOD NAILER

07 THERMAL & MOISTURE PROTECTION

7A 2" RIGID BOARD INSULATION CONT. @ EXTERIOR FOUNDATION WALL
7B 1/2" MINERAL FIBER EXPANSION JOINT
7C FOUNDATION FLUID APPLIED WATERPROOFING SYSTEM
7D BATT. INSULATION
7E ROOF HATCH
7F VAPOR BARRIER FOR WALLS
7G PREFINISHED METAL FLASHING
7H 3" INSULATED METAL PANEL CLADDING SYSTEM - COLOR EP2
7J UNDER-SLAB VAPOR BARRIER SYSTEM
7K RIGID BOARD INSULATION
7L ROOF TO WALL TERMINATION AS PER ROOF MANUF. DETAIL
7M SINGLE PLY ROOF MEMBRANE SYSTEM
7N PREFINISHED METAL COPING
7P EXPANSION JOINT - DETAIL PER STANDARD
7Q PREFINISHED METAL RAINGUTTER & DOWN SPOUT
7R PREFINISHED METAL ROOF SYSTEM
7S ROOF BOARD - SEE ROOF PLAN
7T PREFINISHED METAL REGLET
7U METAL LAMB'S TONGUE SCUPPER
7V RIBBED METAL PANEL CLADDING SYSTEM - COLOR EP1
7W 2" REVEAL INSULATED METAL PANEL CLADDING SYSTEM - COLOR EP3
7X SOUND BATT. INSULATION
7Y AIR INFILTRATION BARRIER

08 DOORS & WINDOWS

8A DOOR & FRAME, COORDINATE WITH FLOOR PLAN AND DOOR SCHEDULE
8B WINDOW & FRAME, COORDINATE WITH FLOOR PLAN AND WINDOW SCHEDULE
8C GLASS WALL SYSTEM
8D GLASS SKYLIGHT

09 FINISHES

9A GYPSUM BOARD
9B SUSPENDED ACOUSTICAL CEILING
9C SUSPENDED GYPSUM BOARD CEILING SYSTEM
9D WALL BASE
9E EXTERIOR GRADE GYPSUM SHEATHING

12 FURNISHINGS

12A MILLWORK
12B EXTERIOR ENTRY MAT

14 CONVEY SYSTEM

14A HYDRAULIC ELEVATOR SYSTEM

15 MECHANICAL

15A MECHANICL LOUVER
15B MECHANICAL DUCT
15C ROOF DRAIN

SECTION GENERAL NOTES

1. SEE G1002 FOR REQUIRED FIRE RATED ASSEMBLIES (WALL & CEILING)

2. STRUCTURAL AND MECHANICAL INFORMATION HAS BEEN SHOWN FOR REFERENCE ONLY. FOR ACTUAL SIZES AND LOCATIONS SEE STRUCTURAL AND MECHANICAL DRAWINGS.

COOPER ROBERTS SIMONSEN ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@ces-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
SALT LAKE CITY UTAH

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4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

BID PACKAGE #2

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BUILDING SECTIONS

AE301

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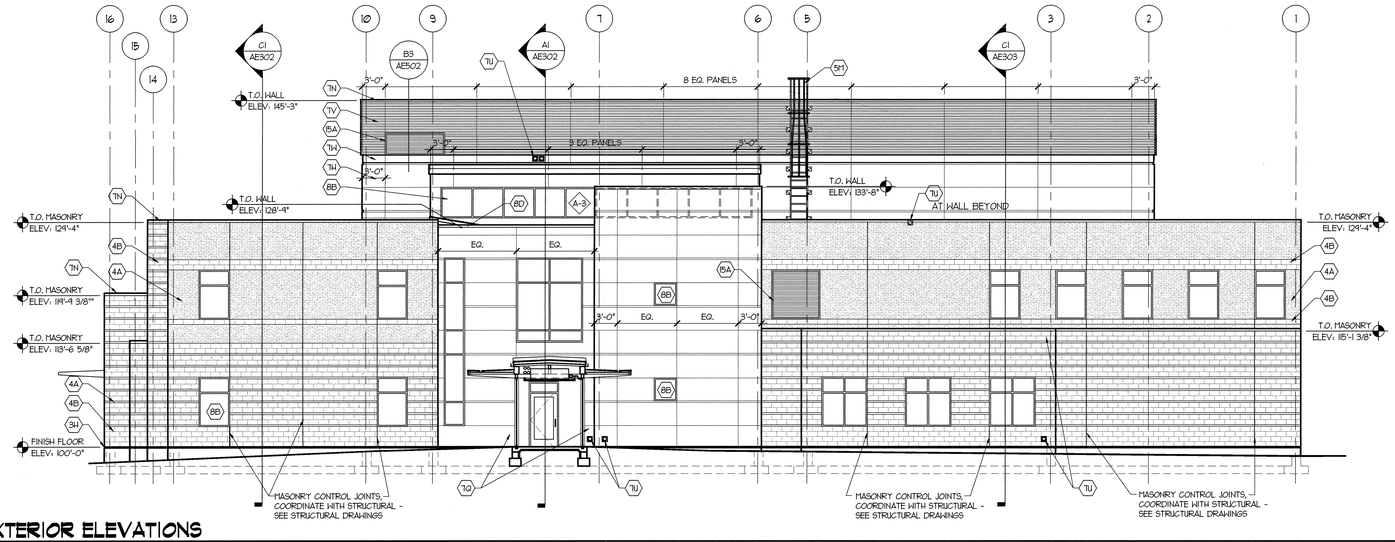
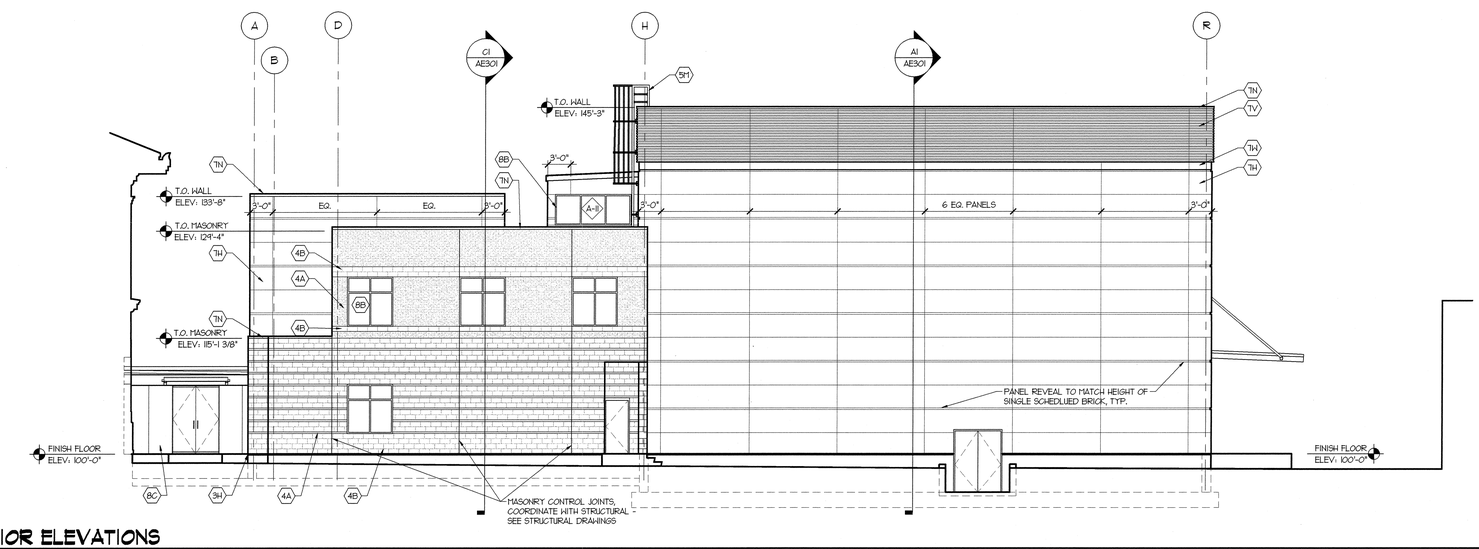


C1 NORTH EXTERIOR ELEVATIONS

1/8" = 1'-0"

AEELEVBASE-0916



A1 WEST EXTERIOR ELEVATIONS

1/8" = 1'-0"

AEELEVBASE-0916

SECTION REFERENCE NOTES

02 SITEWORK

2C FINISH GRADE

03 CONCRETE

3F CONCRETE SIDEWALK
3H CONCRETE REVEAL, SEE BUILDING SECTIONS

04 MASONRY

4A BRICK VENEER - COLOR MA1 (SEE FINISH SCHEDULE IN SPEC)
4B CONCRETE MASONRY UNIT - COLOR CM11 (SEE FINISH SCHEDULE IN SPEC)

05 METALS

5L 1½" STANDARD PIPE GUARDRAIL, PAINTED
5M METAL ROOF ACCESS LADDER

07 THERMAL & MOISTURE PROTECTION

7G PREFINISHED METAL FLASHING
7H 3" INSULATED METAL PANEL CLADDING SYSTEM - COLOR EP2- (SEE FINISH SCHEDULE IN SPEC)
7N PREFINISHED METAL COPING, SEE BUILDING SECTIONS
7Q PREFINISHED METAL RAINSUTTER & DOWN SPOUT
7U METAL LAMB'S TONGUE SCUPPER
7V RIBBED METAL PANEL CLADDING SYSTEM - COLOR EP1 (SEE FINISH SCHEDULE IN SPEC)
7W 2" REVEAL INSULATED METAL PANEL CLADDING SYSTEM - COLOR EP3 (SEE FINISH SCHEDULE IN SPEC)

08 DOORS & WINDOWS

8A DOOR & FRAME, COORDINATE WITH FLOOR PLAN AND DOOR SCHEDULE
8B WINDOW & FRAME, COORDINATE WITH FLOOR PLAN AND WINDOW SCHEDULE
8C GLASS WALL SYSTEM
8D GLASS SKYLIGHT

15 MECHANICAL

15A MECHANICAL LOUVER, COORDINATE WITH MECHANICAL DRAWINGS

SECTION GENERAL NOTES

1. SEE SPECS FOR GRADE, TYPE AND COLOR OF MATERIALS LISTED.

COOPER ROBERTS SIMONSEN ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
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4110 STATE OFFICE BUILDING
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BID PACKAGE #2

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EXTERIOR ELEVATIONS

AE202

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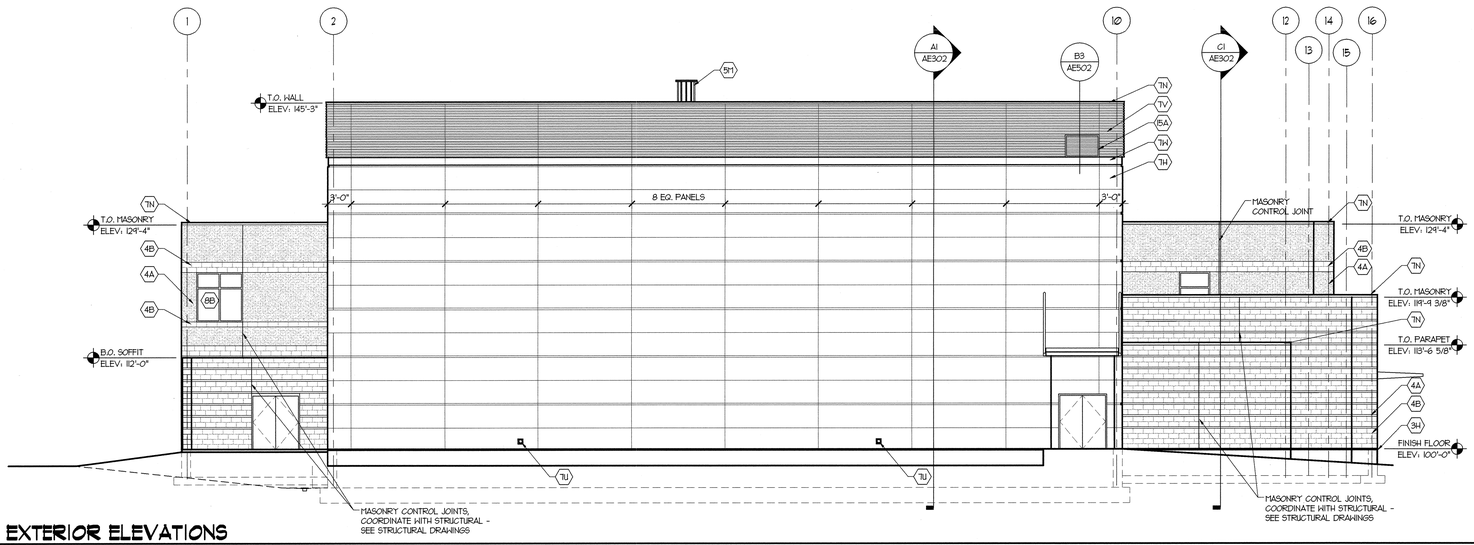
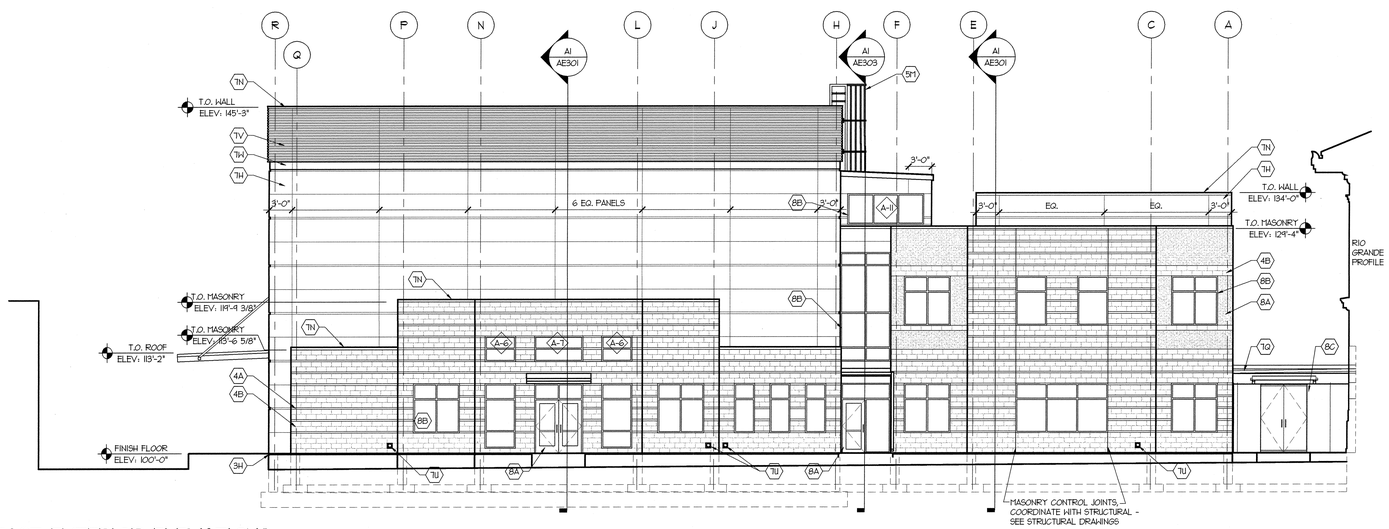


C1 SOUTH EXTERIOR ELEVATIONS

1/8" = 1'-0"



A1 EAST EXTERIOR ELEVATIONS

1/8" = 1'-0"

AEELEVBASE-0916

SECTION REFERENCE NOTES

02 SITEWORK

2C FINISH GRADE

03 CONCRETE

3F CONCRETE SIDEWALK
3H CONCRETE REVEAL, SEE BUILDING SECTIONS

04 MASONRY

4A BRICK VENEER - COLOR MA1 (SEE FINISH SCHEDULE IN SPEC)
4B CONCRETE MASONRY UNIT - COLOR CM11 (SEE FINISH SCHEDULE IN SPEC)

05 METALS

5L 1½" STANDARD PIPE GUARDRAIL, PAINTED
5M METAL ROOF ACCESS LADDER

07 THERMAL & MOISTURE PROTECTION

7G PREFINISHED METAL FLASHING
7H 3" INSULATED METAL PANEL CLADDING SYSTEM - COLOR EP2- (SEE FINISH SCHEDULE IN SPEC)
7N PREFINISHED METAL COPING, SEE BUILDING SECTIONS
7Q PREFINISHED METAL RAINGUTTER & DOWN SPOUT
7U METAL LAMB'S TONGUE SCUPPER
7V RIBBED METAL PANEL CLADDING SYSTEM - COLOR EP1 (SEE FINISH SCHEDULE IN SPEC)
7W 2" REVEAL INSULATED METAL PANEL CLADDING SYSTEM - COLOR EP3 (SEE FINISH SCHEDULE IN SPEC)

08 DOORS & WINDOWS

8A DOOR & FRAME, COORDINATE WITH FLOOR PLAN AND DOOR SCHEDULE
8B WINDOW & FRAME, COORDINATE WITH FLOOR PLAN AND WINDOW SCHEDULE
8C GLASS WALL SYSTEM
8D GLASS SKYLIGHT

15 MECHANICAL

15A MECHANICAL LOUVER, COORDINATE WITH MECHANICAL DRAWINGS

SECTION GENERAL NOTES

1. SEE SPECS FOR GRADE, TYPE AND COLOR OF MATERIALS LISTED.

COOPER ROBERTS SIMONSEN ARCHITECTURE

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

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300 SOUTH 500 WEST
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EXTERIOR ELEVATIONS

AE201

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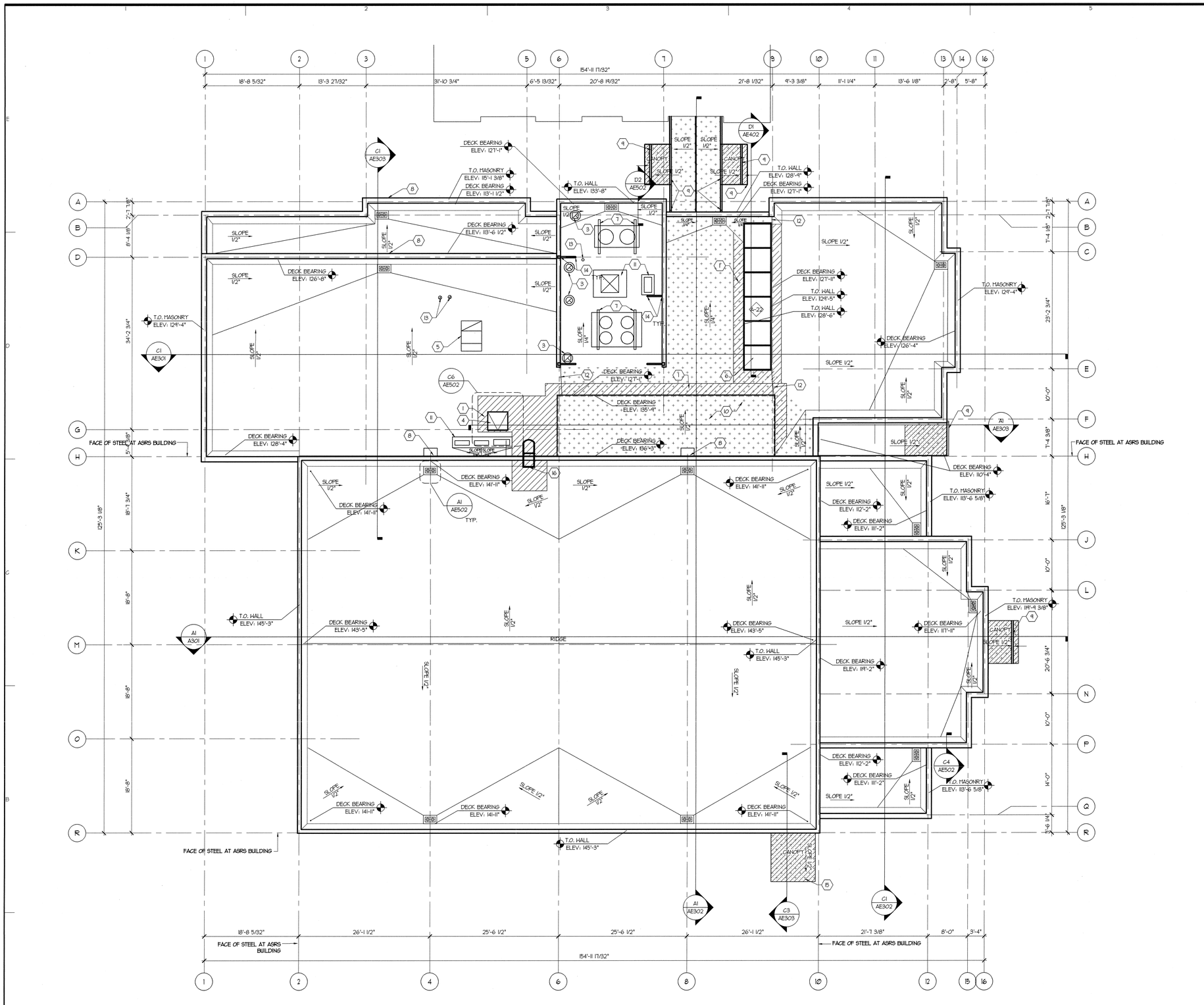

A1 ROOF PLAN
1/8" = 1'-0"

ROOF PLAN GENERAL NOTES

A. ROOF TO HAVE A MINIUM OF 4" OF RIGID INSULATION UNLESS SHOWN OTHERWISE IN A DETAIL.

B. INSTALL A THERMOPLASTIC MEMBRANE ROOFING SYSTEM

C. IN THE LOCATIONS WITH THE FOLLOWING PATTERN ON THE DRAWING ATTACH ROOFING MEMBRANE TO ROOF STRUCTURE USING LOW RISE FOAM ADHESIVE. DO NOT MECHANICALLY FASTEN.

D. AT LOCATIONS WITH THE FOLLOWING PATTERN INSTALL LOW VOLTAGE ELECTRIC DE-IGING SYSTEM. LOCATE BETWEEN THE THERMOPLASTIC MEMBRANE AND INSULATION HARD BOARD. COORDINATE WITH ROOFING INSTALLATION. COORDINATE WITH ELECTRICAL DRAWINGS.

E. SEE BUILDING SECTIONS FOR FLASHING DETAILS.

ROOF PLAN REFERENCE NOTES

1. INSTALL CONTINUOUS FLEXIBLE WALKWAY SURFACE AT THE LOCATION OF PATTERN.

2. ROOF ACCESS LADDER. SEE B1/S04

3. EXHAUST FAN - COORDINATE WITH MECHANICAL DRAWINGS. SEE 6/M1501 FOR PENETRATION DETAIL.

4. ROOF HATCH SEE C6/AE502

5. GOOSENECK VENT COORDINATE WITH MECHANICAL. SEE A4/AE502 FOR PENETRATION DETAIL.

6. SKYLIGHT. COORDINATE WITH WINDOW SCHEDULE.

7. SUPPORT FOR MECHANICAL EQUIPMENT. COORDINATE SIZE AND LOCATION WITH MECHANICAL DRAWINGS. SEE 7/M1501 FOR ATTACHMENT AND FLASHING DETAIL.

8. LAMB TONGUE SCUPPER BELOW WITH SPLASH BLOCK.

9. PREFINISHED METAL RAIN GUTTER & DOWNSPOUT. INSTALL HEAT MELT CABLE THROUGH RAIN GUTTER AND AT DOWN SPOUTS- COORDINATE WITH ELECTRIC DRAWINGS.

10. CLARESTORY ROOF.

11. MECHANICAL UNIT MOUNTED ON A PAD - COORDINATE SIZE AND LOCATION WITH MECHANICAL DRAWINGS. SEE 8/M1501 FOR DETAILING UNIT SUPPORT.

12. STEP IN ROOFING SYSTEM

13. VENT - COORDINATE WITH MECHANICAL/PLUMBING DRAWINGS. SEE B4/AE502 FOR FLASHING DETAIL.

14. PARAPET STRUCTURAL SUPPORT - COORDINATE WITH STRUCTURAL DRAWINGS. FLASH SIMILAR TO B4/AE502

15. 1" OF RIGID INSULATION W/ROOFING SYSTEM.

16. ROOF ACCESS LADDER. SEE B1/AE504.

COOPER ROBERTS SIMONSEN ARCHITECTURE

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

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300 SOUTH 500 WEST
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ROOF PLAN

AE107

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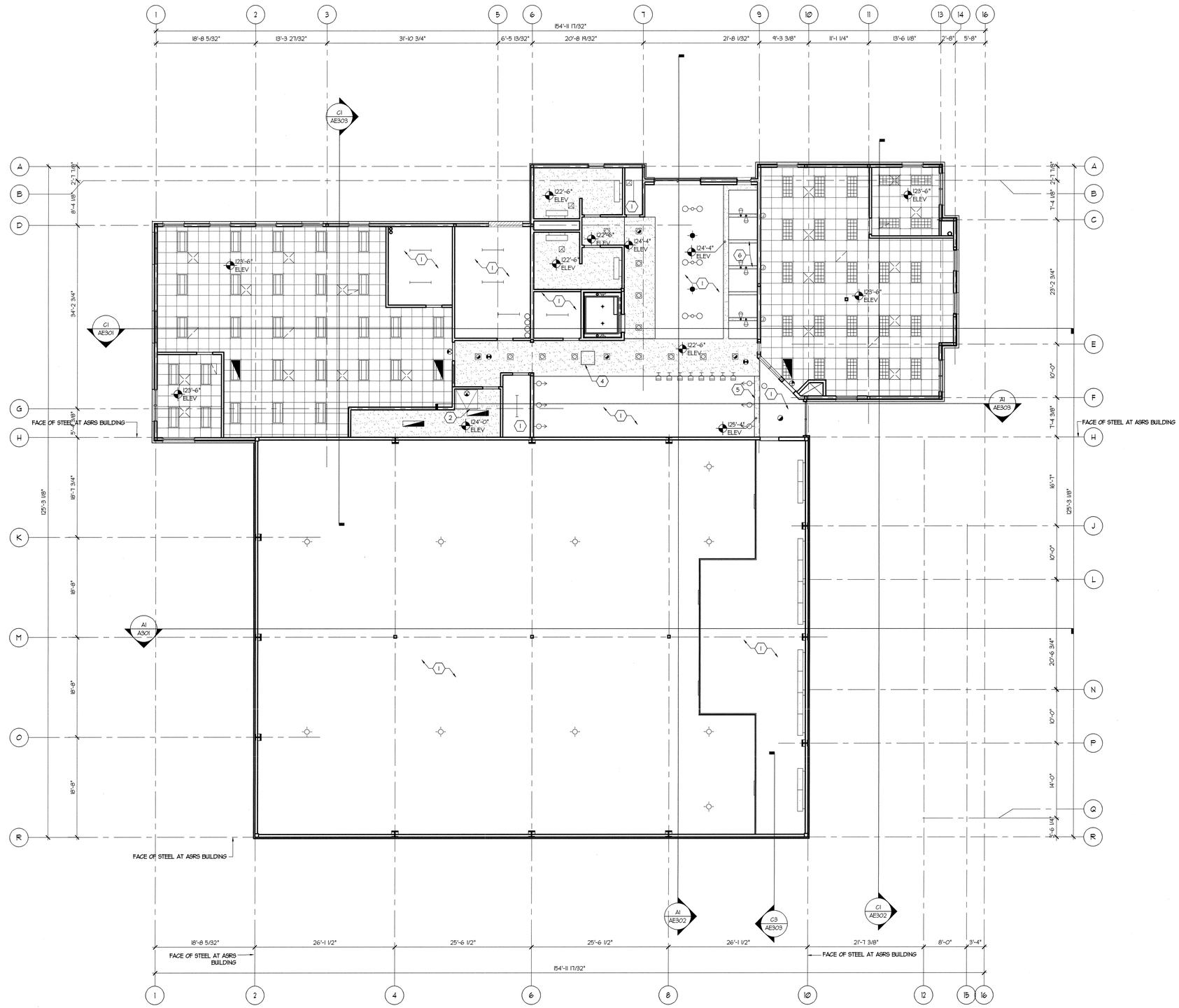

A1 SECOND FLOOR REFLECTED CEILING PLAN
1/8" = 1'-0"

PLAN NORTH

GENERAL NOTES

A. LAY IN ACOUSTICAL CEILING. COLOR AND GRID = AC1 SEE SPEC. FINISH SCHEDULE. INSTALL AT LOCATIONS WITH THE FOLLOWING PATTERN. FOR SEISMIC ATTACHMENT SEE E6/AE502

B. GYPSUM BOARD CEILING. INSTALL AT LOCATIONS WITH THE FOLLOWING PATTERN. FOR SEISMIC ATTACHMENT SEE D6/AE502

C. ALUMINUM SOFFIT. COLOR = AS1 SEE SPEC. FINISH SCHEDULE

D. INSTALL SLIPJOINT AT TOP OF WALLS THAT MEET METAL DECK AND BEAMS. SIMILAR TO E6/AE501.

E. FOR LIGHTING FIXTURES AND DIFFUSERS HAVE BEEN SHOWN IN THE REFLECTED CEILING. COORDINATE EXACT LOCATION AND TYPE WITH ELECTRICAL AND MECHANICAL DRAWINGS.

F. GALVANIZE EXPOSED EXTERIOR METAL DECK SOFFIT AT THE FOLLOWING PATTERN.

G. METAL PANEL SUSPENDED CEILING COLOR AND GRID = AC2 SEE SPEC. FINISH SCHEDULE. INSTALL AT LOCATIONS WITH THE FOLLOWING PATTERN. FOR SEISMIC ATTACHMENT SIMILAR TO E6/AE502. FOR EDGE CONDITION SEE A4/AE504

REFERENCE NOTES

1. OPEN TO ABOVE - PAINT STRUCTURE ABOVE.
2. ROOF HATCH
3. (2) LAYERS OF GYPSUM BOARD UNDER THE STAIRS.
4. 30 X 30 ACCESS DOOR FRAMED INTO GYPSUM BOARD CEILING. SURFACE TO MATCH ADJACENT SURFACES.
5. FURR GYPSUM BOARD AROUND BEAM. SEE A1/AE303.
6. WRAP STRUCTURAL BEAMS WITH GYPSUM BOARD.
7. STOP GYPSUM BOARD 6" ABOVE CEILING.

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

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SECOND FLOOR REFLECTED CEILING PLAN

AE106

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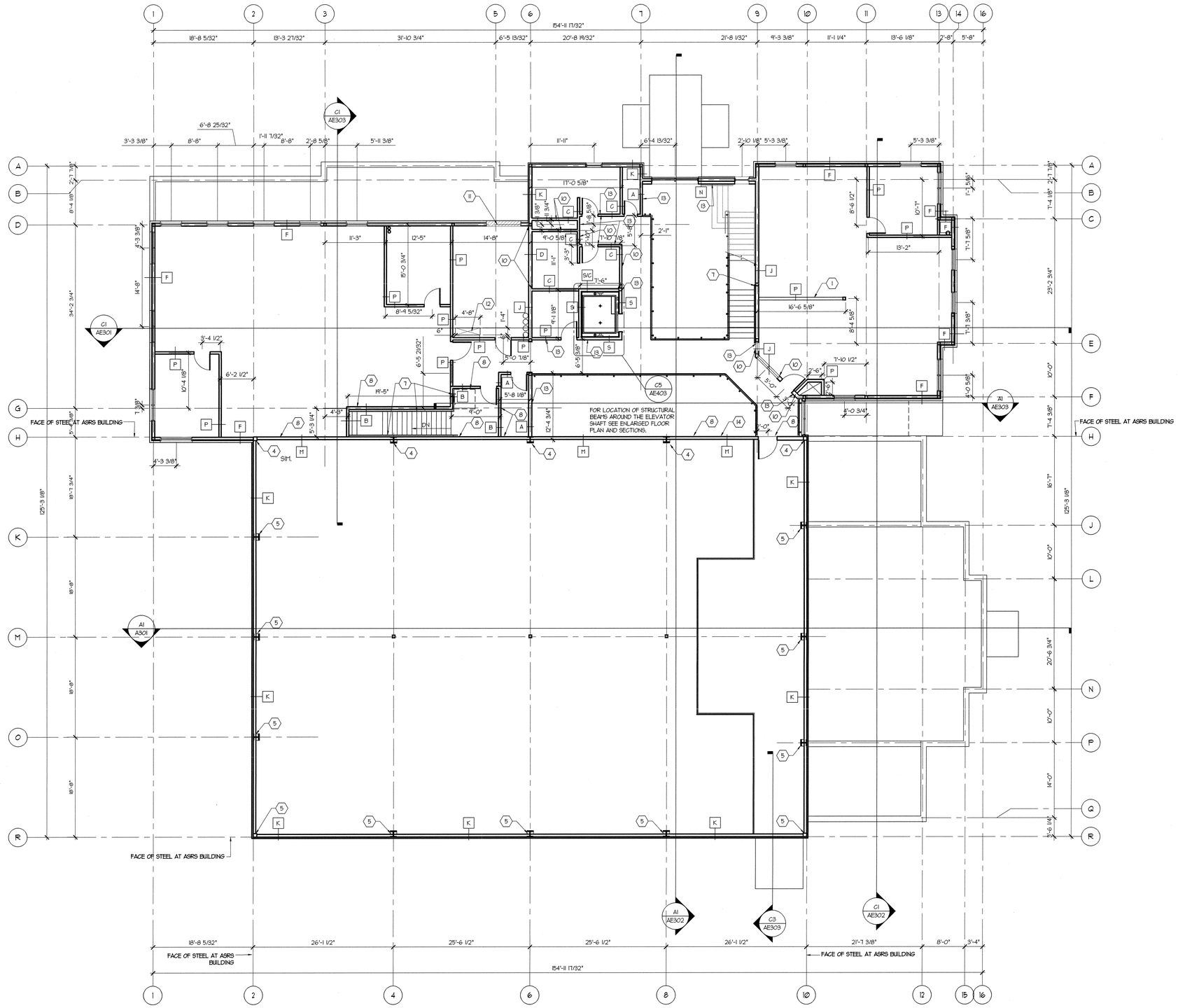

A1 SECOND WALL FRAMING PLAN

1/8" = 1'-0"

GENERAL NOTES

A. FOR WALL TYPES SEE SHEET AE501.

B. INSTALL SUPPORT/BLOCKING FOR RESTROOM WALL MOUNTED ACCESSORIES AND EQUIPMENT. SEE AE401 FOR GENERAL LOCATION OF ITEMS.

C. FOR WALLS THAT END AT DECK SEE A6/AE501. FOR WALLS THAT ARE FIRE RATED, SEE A1/G1003 FOR CONNECTION AT DECK.

D. AT FIRE RATED WALLS THAT EXTEND TO DECK, SEE A1/G1003 FOR CONNECTION DETAILS.

REFERENCE NOTES

1. PARTIAL HEIGHT WALL - 6'-2" TALL.
2. INSTALL IMPACT RESISTANT GYPSUM BOARD.
3. INSTALL (1) ADDITIONAL LAYER OF 5/8" GYPSUM BOARD SEE E1/AE402
4. WRAP COLUMNS WITH (2) LAYERS OF GYPSUM BOARD. SEE E1/AE501
5. WRAP COLUMNS WITH (1) LAYER OF GYPSUM BOARD. SEE D1/AE501
6. EXTEND GYPSUM BOARD TO DECK.
7. INSTALL REQUIRED SUPPORT/BLOCKING IN WALL FOR HANDRAIL CONNECTION, AND STEEL LADDER CONNECTION.
8. RUN 2 LAYERS OF SHEET ROCK TO UNDERSIDE OF METAL DECK. SEAL SHEET ROCK WITH FIRE RATED SEALANT OR FOAM.
9. INSTALL REQUIRED STRUCTURAL FRAMING IN THE JAMB AND HEADER REQUIRED BY MANUFACTURE TO SUPPORT THE 2-HOUR ROLLING COILING DOOR.
10. STOP GYPSUM BOARD 6" ABOVE CEILING LEVEL.
11. MECHANICAL GRILL COORDINATE WITH MECHANICAL DRAWINGS.
12. BLOCK OUT OPENING IN CONCRETE AND DECKING FOR MECHANICL DUCT. COORDINATE SIZE AND LOCATION WITH MECHANICAL DRAWINGS.
13. ADD GYPSUM BOARD ACCESSORIES WALL & BASE REVEAL. FOR LOCATIONS, SEE A1/AE303. FOR DETAIL, SEE B1/AE501.
14. GYPSUM BOARD ACCESSORIES WALL & BASE REVEAL, ADD 1 LAYER OF 5/8" GYPSUM BOARD TO 2-HOUR WALL ASSEMBLY TO CREATE REVEAL. FOR LOCATION ON WALL SEE A1/AE303. FOR DETAIL, SEE A1/AE501.

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crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@coea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
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SECOND FLOOR WALL FRAMING PLAN

AE105

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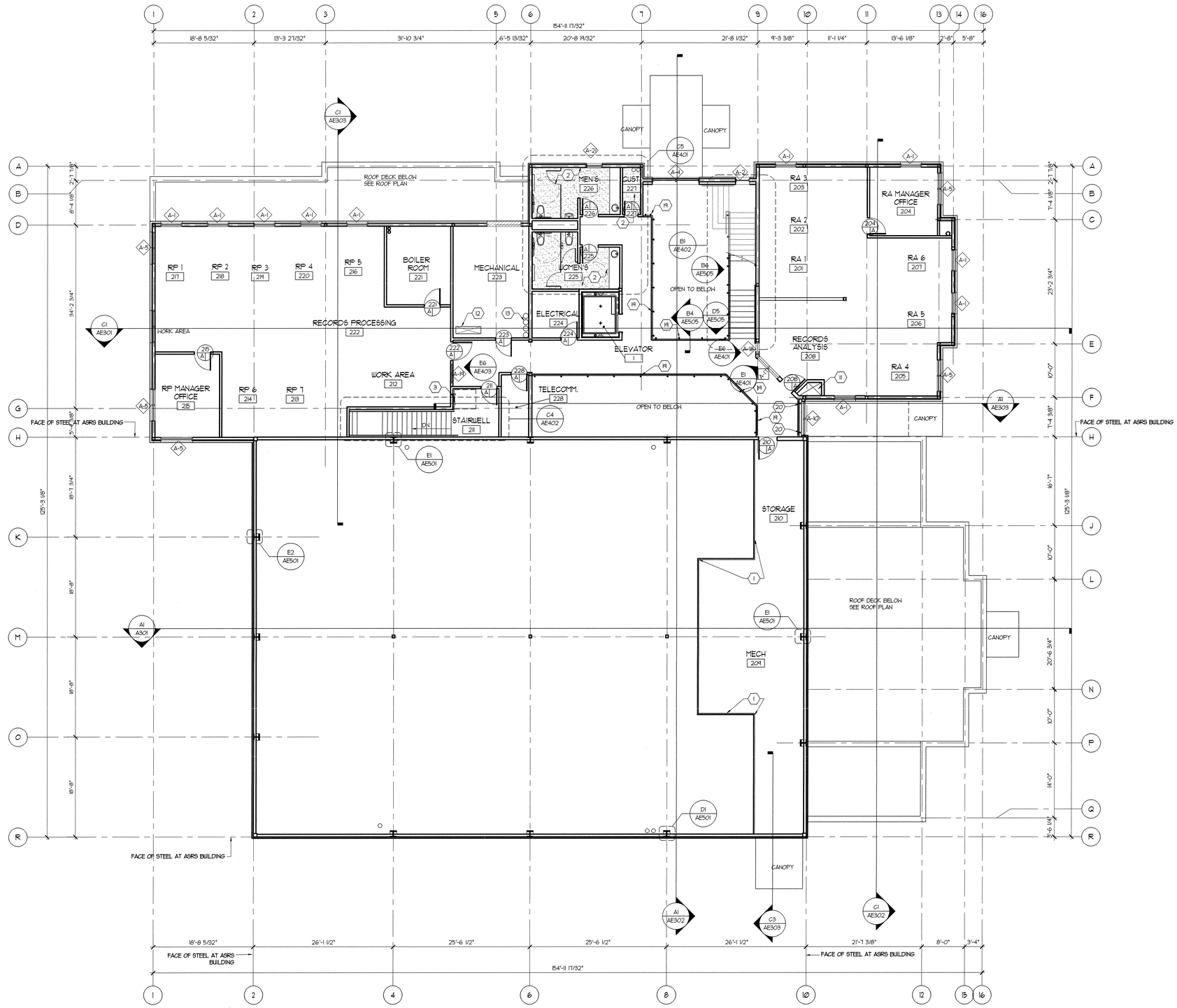

A1 SECOND FLOOR PLAN

1/8" = 1'-0"

GENERAL NOTES

A. ALL MILLWORK TO BE BID IN NEXT BID PACKAGE.

B. CABINETRY AND FIXTURES ARE SHOWN FOR REFERENCE ONLY.

C. ALL WALLS AROUND ASRS STORAGE AND ASRS PLATFORM HAVE 2 LAYERS OF VAPOR BARRIER. SEE WALL SCHEDULE FOR LOCATION. ALL JOINTS, CONNECTIONS TO DOOR FRAMES, AND PENETRATIONS TO BE SEALED.

REFERENCE NOTES

1. GUARDRAIL. SEE DETAIL A1/AE503.
2. MORTAR BED. RECESS FLOOR SLAB 2 1/2".
3. ROOF ACCESS LADDER - SEE DETAIL C6/AE501 SIM.
4. ROOF ACCESS LADDER - SEE DETAIL B1/AE504.
5. ROOF DRAIN. COORDINATE WITH ROOF PLAN AND PLUMBING DRAWINGS.
6. 1 1/2 HOUR FIRE RATED OVERHEAD COILING DOOR. TIE RELEASE MECHANISM INTO FIRE ALARM SYSTEM.
7. CARD READER, COORDINATE WITH DOOR SCHEDULE AND ELECTRICAL DRAWINGS.
8. WATER COOLER. COORDINATE WITH PLUMBING.
9. 12" RAIL SIMILAR TO A1/AE503.
10. FLOOR DRAIN RECESSED 6". SEE MECH.
11. MECHANICAL DUCT SHAFT. COORDINATE WITH MECHANICAL DRAWINGS.
12. MECHANICAL DUCT THROUGH FLOOR. SEE LOCATION ON THE AE105. COORDINATE SIZE AND EXACT LOCATION WITH MECHANICAL AND STRUCTURAL DRAWINGS.
13. ELECTRICAL LINES RUN THROUGH THE CONCRETE SLAB. COORDINATE SIZE AND EXACT LOCATION WITH ELECTRICAL DRAWINGS.
14. CARD READER AND/OR AUTO DOOR OPENER COORDINATE WITH ELECTRICAL DRAWINGS AND DOOR SCHEDULE.
15. PROVIDE GATE WITH (2) HINGES AT GUARDRAIL. GATE TO MATCH DESIGN OF GUARD RAIL. SEE A3, A4/AE505.
16. DO NOT INSTALL THIS WINDOW UNTIL ART WORK IS TRANSPORTED INTO THE LOBBY.
17. PHONE AND DIRECTORY COORDINATE WITH ELECTRICAL DRAWINGS.
18. PROVIDE SILLS FOR OVERHEAD DOOR ANGLE.
19. GLASS GUARDRAIL. MOUNT SUPPORT TO SIDE OF C-CHANNEL SIM. TO B4/AE505.
20. GLASS GUARDRAIL - MOUNT SUPPORT TO CONCRETE DECK. SEE AE/AE505.

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
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SALT LAKE CITY, UT
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BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

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SECOND FLOOR PLAN

AE104

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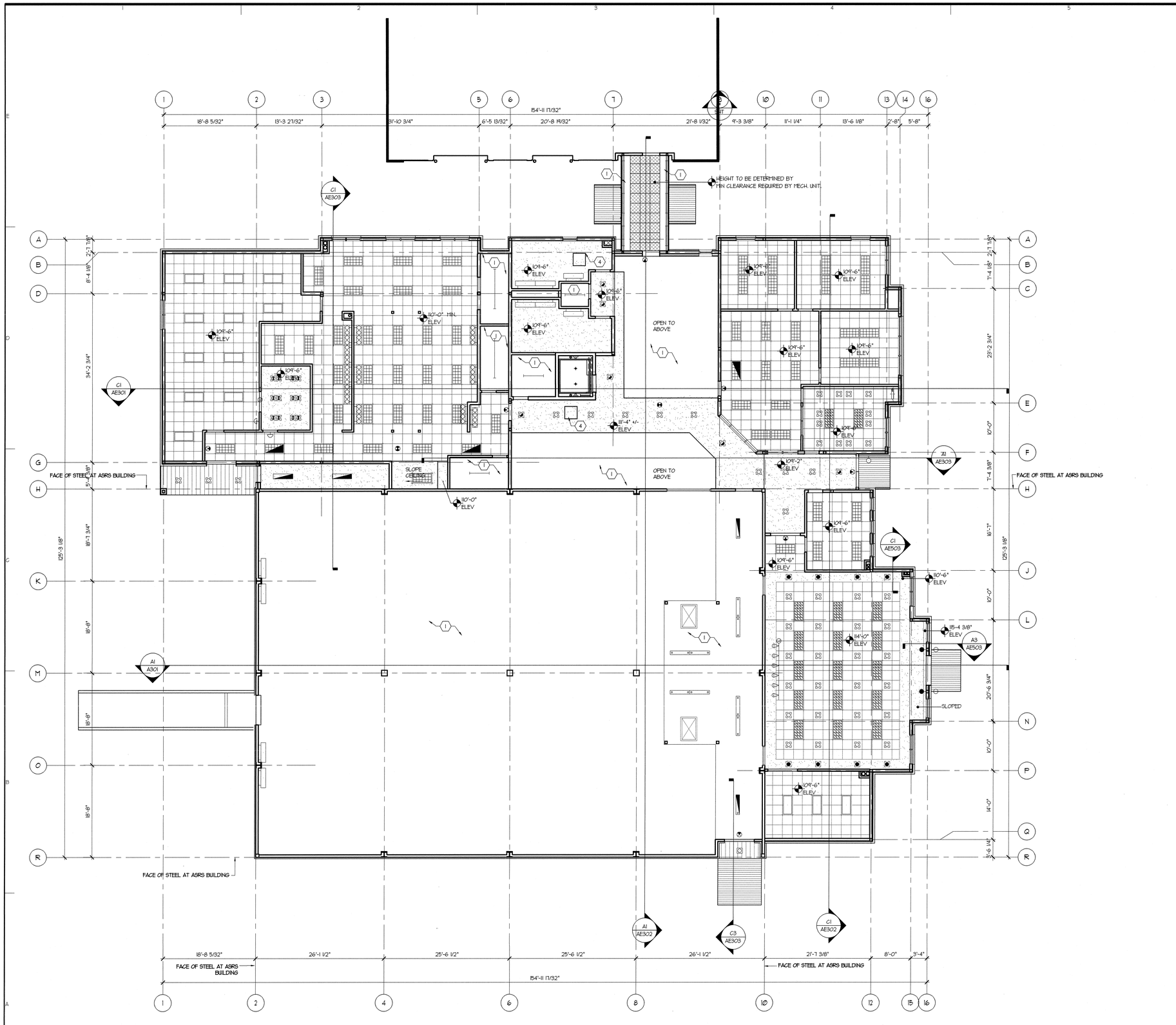
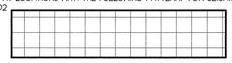


A1 FIRST FLOOR REFLECTED CEILING PLAN

1/8" = 1'-0"

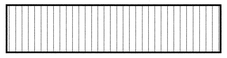
GENERAL NOTES

A. LAY IN ACOUSTICAL CEILING. COLOR AND GRID = AC1 SEE SPEC. FINISH SCHEDULE. INSTALL AT LOCATIONS WITH THE FOLLOWING PATTERN. FOR SEISMIC ATTACHMENT SEE E6/AE502



B. GYPSUM BOARD CEILING. INSTALL AT LOCATIONS WITH THE FOLLOWING PATTERN. FOR SEISMIC ATTACHMENT SEE D6/AE502

C. ALUMINUM SOFFIT. COLOR = AS1 SEE SPEC. FINISH SCHEDULE



D. INSTALL SLIPJOINT AT TOP OF WALLS THAT MEET METAL DECK AND BEAMS. SIMILAR TO E6/AE501.

E. FOR LIGHTING FIXTURES AND DIFFUSERS HAVE BEEN SHOWN IN THE REFLECTED CEILING. COORDINATE EXACT LOCATION AND TYPE WITH ELECTRICAL AND MECHANICAL DRAWINGS.

F. GALVANIZE EXPOSED EXTERIOR METAL DECK SOFFIT AT THE FOLLOWING PATTERN.

G. METAL PANEL SUSPENDED CEILING COLOR AND GRID = AC2 SEE SPEC. FINISH SCHEDULE. INSTALL AT LOCATIONS WITH THE FOLLOWING PATTERN. FOR SEISMIC ATTACHMENT SIMILIAR TO E6/AE502. FOR EDGE CONDITION SEE A4/AE504

REFERENCE NOTES

1. OPEN TO ABOVE - PAINT STRUCTURE ABOVE.
2. ROOF HATCH
3. (2) LAYERS OF GYPSUM BOARD UNDER THE STAIRS.
4. 30 X 30 ACCESS DOOR FRAMED INTO GYPSUM BOARD CEILING. SURFACE TO MATCH ADJACENT SURFACES.
5. FURR GYPSUM BOARD AROUND BEAM. SEE A1/AE303.
6. WRAP STRUCTURAL BEAMS WITH GYPSUM BOARD.
7. STOP GYPSUM BOARD 6" ABOVE CEILING.

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crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
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STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
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FIRST FLOOR REFLECTED CEILING PLAN

AE103

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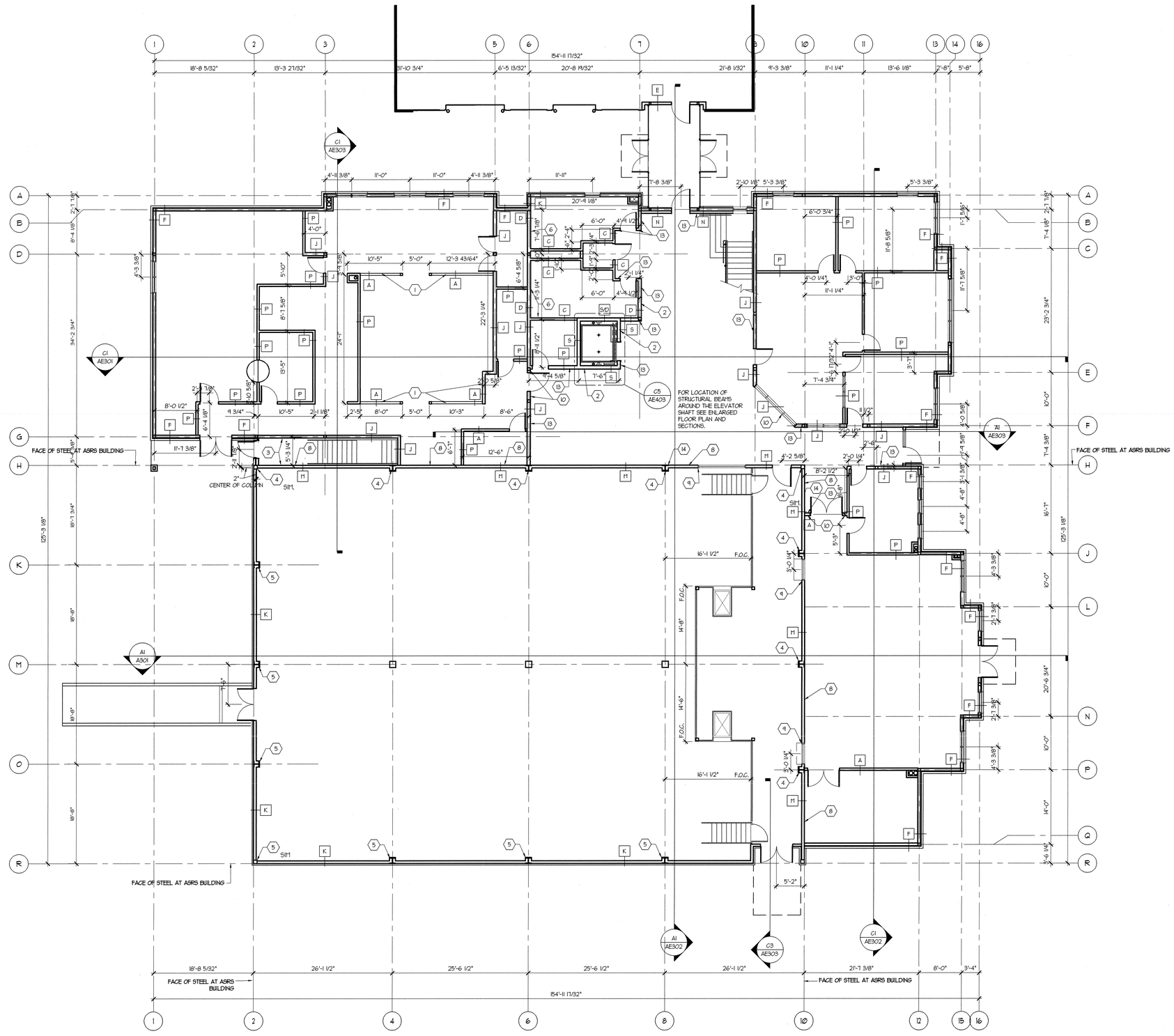

A1 FIRST WALL FRAMING PLAN
1/8" = 1'-0"

GENERAL NOTES

A. FOR WALL TYPES SEE SHEET AE501.

B. INSTALL SUPPORT/BLOCKING FOR RESTROOM WALL MOUNTED ACCESSORIES AND EQUIPMENT. SEE AE401 FOR GENERAL LOCATION OF ITEMS.

C. FOR WALLS THAT END AT DECK SEE A6/AE501. FOR WALLS THAT ARE FIRE RATED, SEE A1/G1003 FOR CONNECTION AT DECK.

D. AT FIRE RATED WALLS THAT EXTEND TO DECK, SEE A1/G1003 FOR CONNECTION DETAILS.

REFERENCE NOTES

1. PARTIAL HEIGHT WALL - 6'-2" TALL.
2. INSTALL IMPACT RESISTANT GYPSUM BOARD.
3. INSTALL (1) ADDITIONAL LAYER OF 5/8" GYPSUM BOARD SEE E1/AE402
4. WRAP COLUMNS WITH (2) LAYERS OF GYPSUM BOARD. SEE E1/AE501
5. WRAP COLUMNS WITH (1) LAYER OF GYPSUM BOARD. SEE D1/AE501
6. EXTEND GYPSUM BOARD TO DECK.
7. INSTALL REQUIRED SUPPORT/BLOCKING IN WALL FOR HANDRAIL CONNECTION, AND STEEL LADDER CONNECTION.
8. RUN 2 LAYERS OF SHEET ROCK TO UNDERSIDE OF METAL DECK. SEAL SHEET ROCK WITH FIRE RATED SEALANT OR FOAM.
9. INSTALL REQUIRED STRUCTURAL FRAMING IN THE JAMB AND HEADER REQUIRED BY MANUFACTURE TO SUPPORT THE 2-HOUR ROLLING COILING DOOR.
10. STOP GYPSUM BOARD 6" ABOVE CEILING LEVEL.
11. MECHANICAL GRILL COORDINATE WITH MECHANICAL DRAWINGS.
12. BLOCK OUT OPENING IN CONCRETE AND DECKING FOR MECHANICL DUCT. COORDINATE SIZE AND LOCATION WITH MECHANICAL DRAWINGS.
13. ADD GYPSUM BOARD ACCESSORIES WALL & BASE REVEAL. FOR LOCATIONS, SEE A1/AE303. FOR DETAIL, SEE B1/AE501.
14. GYPSUM BOARD ACCESSORIES WALL & BASE REVEAL. ADD 1 LAYER OF 5/8" GYPSUM BOARD TO 2-HOUR WALL ASSEMBLY TO CREATE REVEAL. FOR LOCATION ON WALL SEE A1/AE303. FOR DETAIL, SEE A1/AE501.

COOPER ROBERTS SIMONSEN ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absgconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

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BID PACKAGE #2

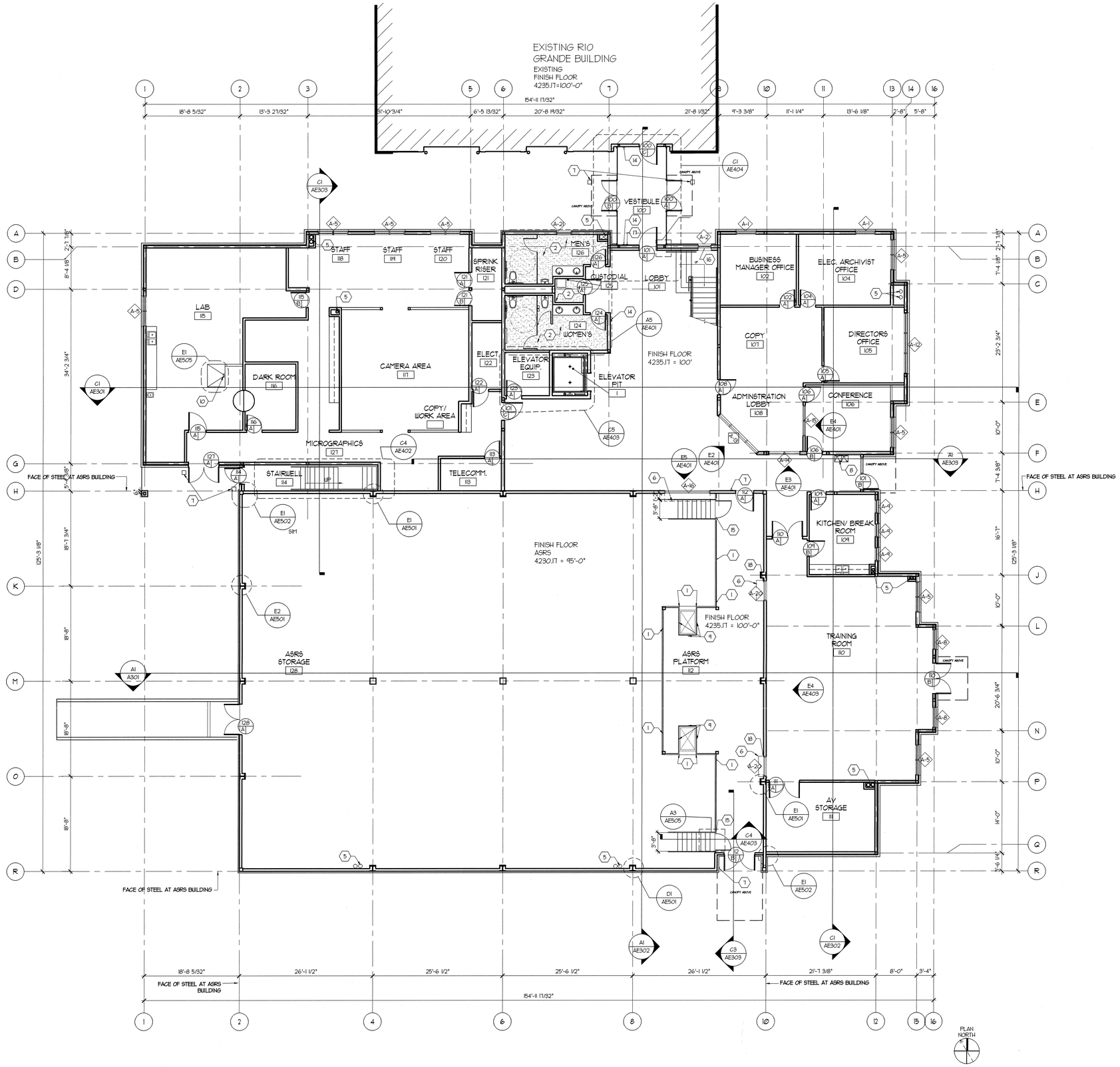
CD		BID PACKAGE #3
DD	-	-

PROJECT NO: B03-039 ARCHIVES
CAD DWG FILE: P:\B03-039\ARCHIVE/AE102.DWG
DRAWN BY:
CHECKED BY: -

FIRST FLOOR WALL FRAMING PLAN

AE102

#



A1 FIRST FLOOR PLAN
1/8" = 1'-0"

GENERAL NOTES

A. ALL MILLWORK TO BE BID IN NEXT BID PACKAGE.

B. CABINETRY AND FIXTURES ARE SHOWN FOR REFERENCE ONLY.

C. ALL WALLS AROUND ASRS STORAGE AND ASRS PLATFORM HAVE 2 LAYERS OF VAPOR BARRIER. SEE WALL SCHEDULE FOR LOCATION. ALL JOINTS, CONNECTIONS TO DOOR FRAMES, AND PENETRATIONS TO BE SEALED.

REFERENCE NOTES

1. GUARDRAIL. SEE DETAIL A1/AE503.
2. MORTAR BED. RECESS FLOOR SLAB 2 1/2".
3. ROOF ACCESS LADDER - SEE DETAIL C6/AE501 SIM.
4. ROOF ACCESS LADDER - SEE DETAIL B1/AE504.
5. ROOF DRAIN. COORDINATE WITH ROOF PLAN AND PLUMBING DRAWINGS.
6. 1 1/2 HOUR FIRE RATED OVERHEAD COILING DOOR. TIE RELEASE MECHANISM INTO FIRE ALARM SYSTEM.
7. CARD READER, COORDINATE WITH DOOR SCHEDULE AND ELECTRICAL DRAWINGS.
8. WATER COOLER. COORDINATE WITH PLUMBING.
9. 12" RAIL SIMILAR TO A1/AE503.
10. FLOOR DRAIN RECESSED 6". SEE MECH.
11. MECHANICAL DUCT SHAFT. COORDINATE WITH MECHANICAL DRAWINGS.
12. MECHANICAL DUCT THROUGH FLOOR. SEE LOCATION ON THE AE105. COORDINATE SIZE AND EXACT LOCATION WITH MECHANICAL AND STRUCTURAL DRAWINGS.
13. ELECTRICAL LINES RUN THROUGH THE CONCRETE SLAB. COORDINATE SIZE AND EXACT LOCATION WITH ELECTRICAL DRAWINGS.
14. CARD READER AND/OR AUTO DOOR OPENER COORDINATE WITH ELECTRICAL DRAWINGS AND DOOR SCHEDULE.
15. PROVIDE GATE WITH (2) HINGES AT GUARDRAIL. GATE TO MATCH DESIGN OF GUARD RAIL. SEE A3, A4/AE505.
16. DO NOT INSTALL THIS WINDOW UNTIL ART WORK IS TRANSPORTED INTO THE LOBBY.
17. PHONE AND DIRECTORY COORDINATE WITH ELECTRICAL DRAWINGS.
18. PROVIDE SILLS FOR OVERHEAD DOOR ANGLE.

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@coea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

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BID PACKAGE #2

CD	OCTOBER 1 2003	BID PACKAGE #2
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PROJECT NO: B03-039 ARCHIVES
CAD DWG FILE: P:\B03-039\ARCHIVE/AE101.DWG
DRAWN BY:
CHECKED BY: -

FIRST FLOOR PLAN

AE101

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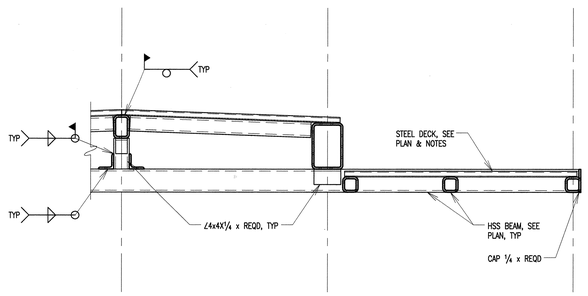

C1 CANOPY DETAIL
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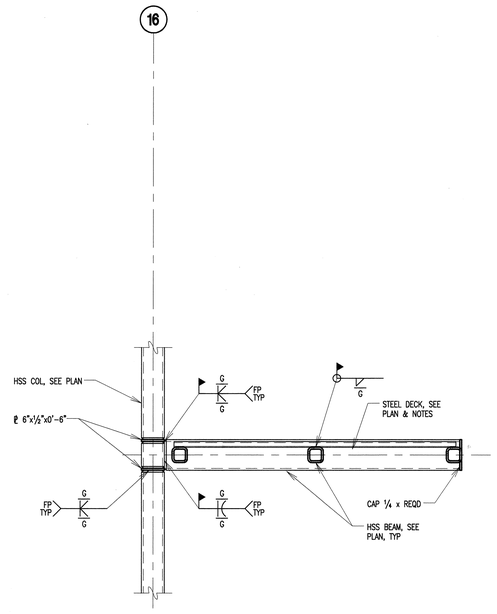

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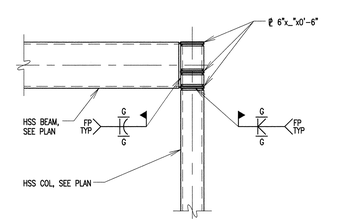
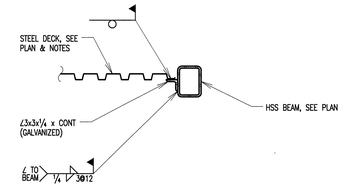


E5 CANOPY DETAIL
SCALE: 3/4" = 1'-0"
SE503-E5.dwg



E6 CANOPY DETAIL
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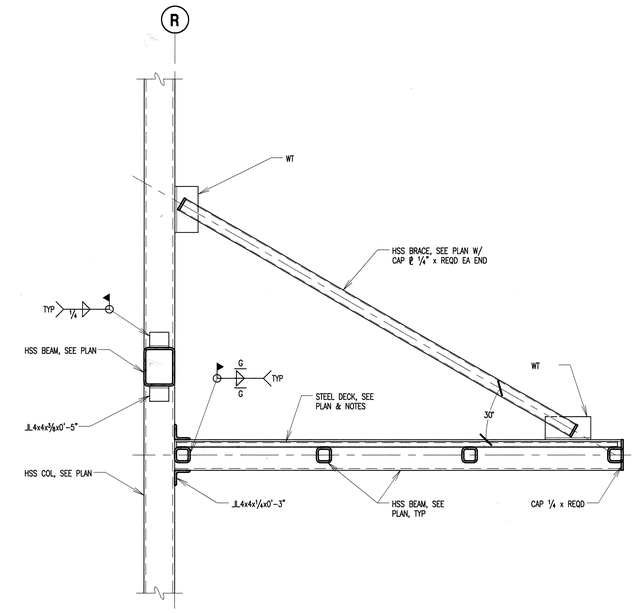

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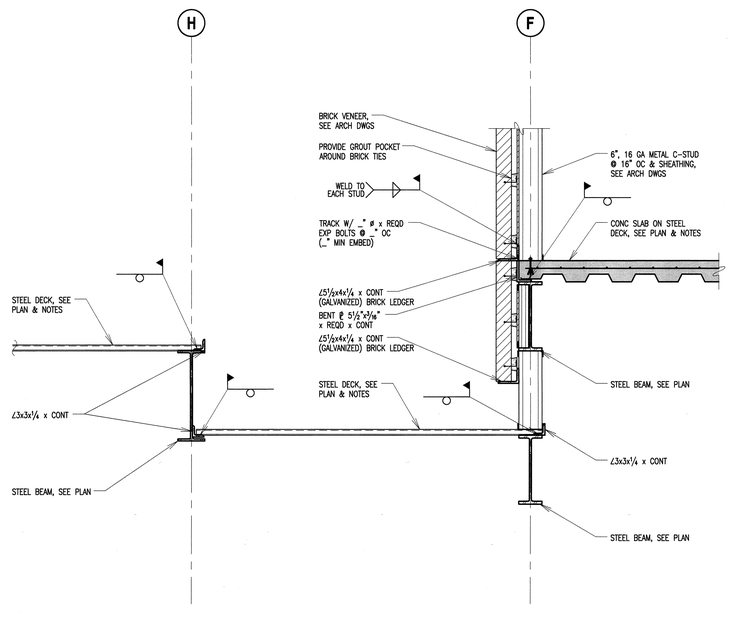
SE503-C5.dwg



A4 DECK BEARING DETAIL
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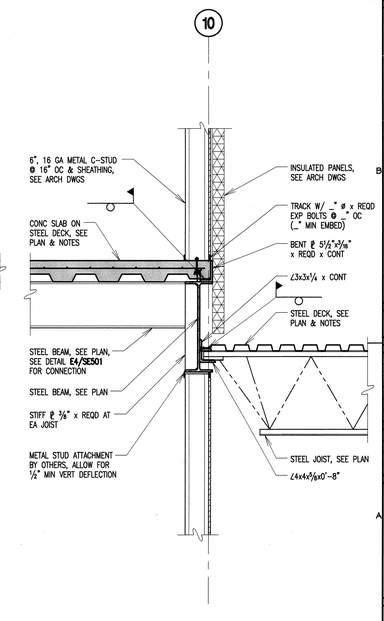
SE503-A4.dwg



A6 DECK BEARING DETAIL
SCALE: 3/4" = 1'-0"
SE503-A6.dwg

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
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244 WEST 300 NORTH
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SPECTRUM BENNION
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SALT LAKE CITY, UT
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3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
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FRUIT HEIGHTS, UT 84037
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bma@mailsnare.net

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DD	09/24/2003 -	

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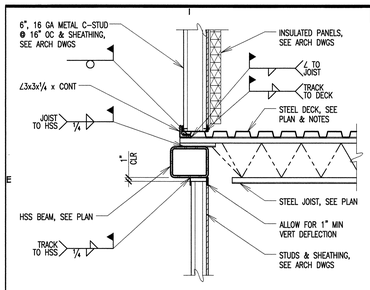
CHECKED BY: JEO

STRUCTURAL DETAILS

SE503

SHEET # OF 1



E1 JOIST BEARING DETAIL
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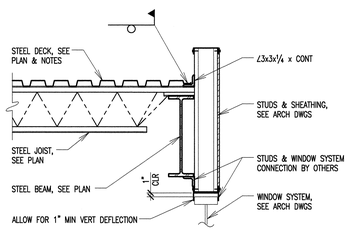
SE502-E1.dwg



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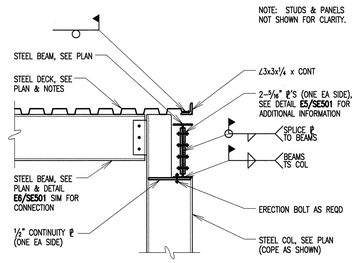
SE502-E2.dwg



E3 BEAM CONNECTION DETAIL
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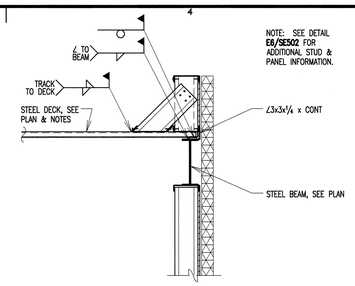
SE502-E3.dwg



E4 DECK BEARING DETAIL
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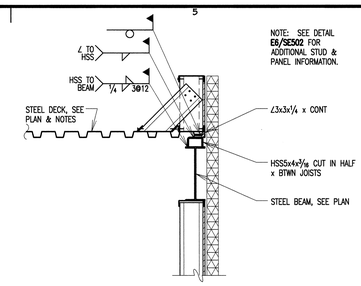
SE502-E4.dwg



E5 BLOCKING DETAIL
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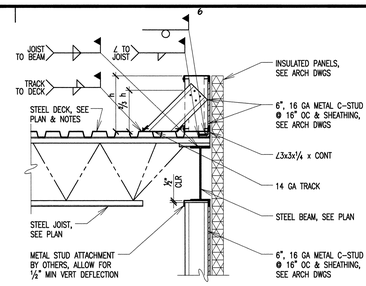
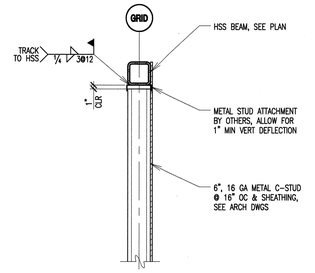
SE502-E5.dwg



E6 JOIST BEARING DETAIL
SCALE: 3/4" = 1'-0"
SE502-E6.dwg



D1 SCREEN WALL DETAIL
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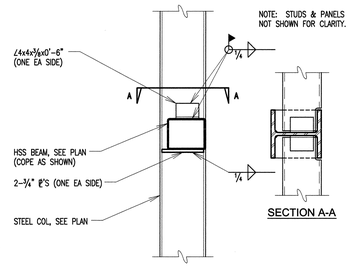
SE502-D1.dwg



D3 BEAM CONNECTION DETAIL
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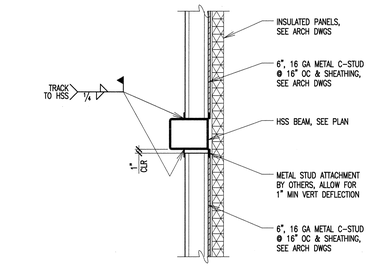

D4 STUD CONNECTION DETAIL
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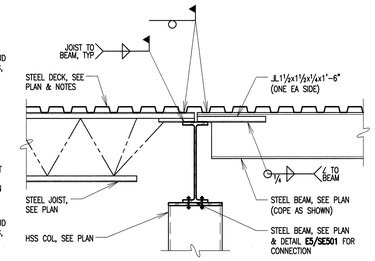

D5 JOIST BEARING DETAIL
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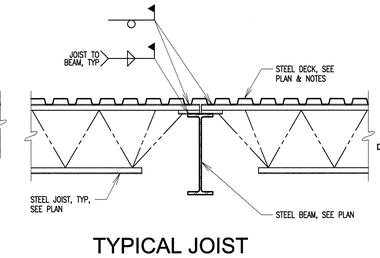
SE502-D5.dwg



D6 TYPICAL JOIST BEARING DETAIL
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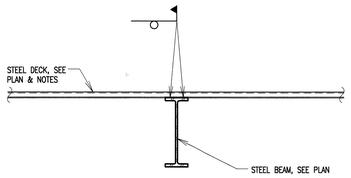

C1 DRAG STRUT DETAIL
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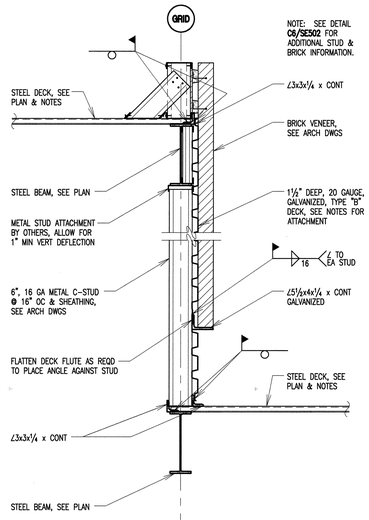

C2 DECK BEARING DETAIL
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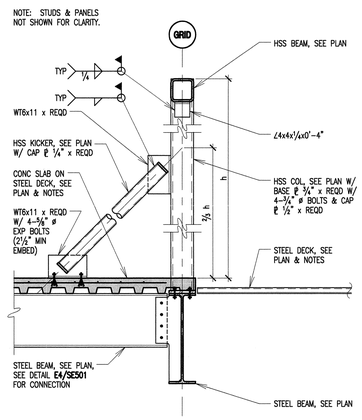
SE502-C2.dwg



B3 SCREEN WALL DETAIL
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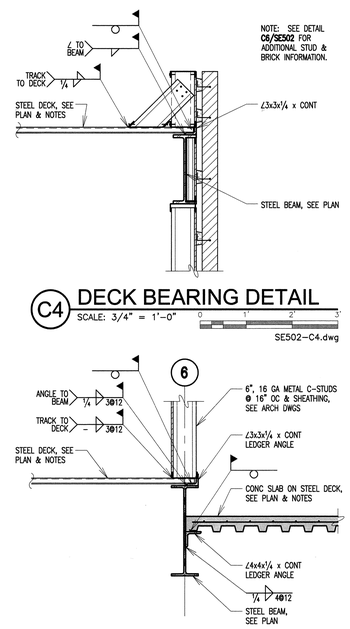

B4 DECK BEARING DETAIL
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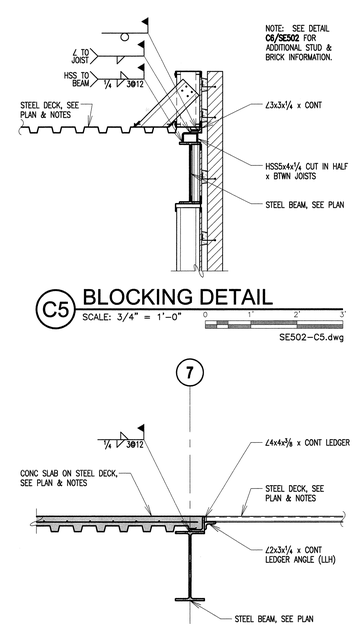
SE502-B4.dwg



B5 DECK BEARING DETAIL
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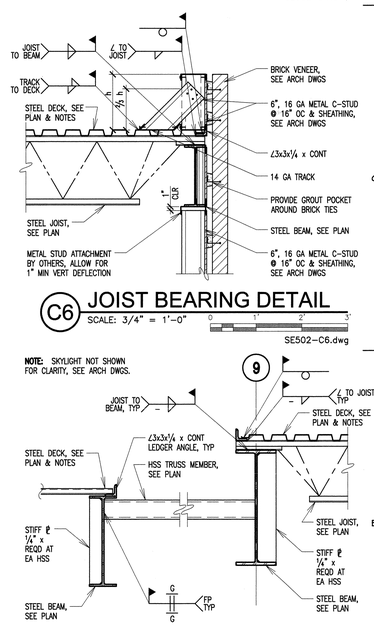
SE502-B5.dwg



B6 VERTICAL TRUSS DETAIL
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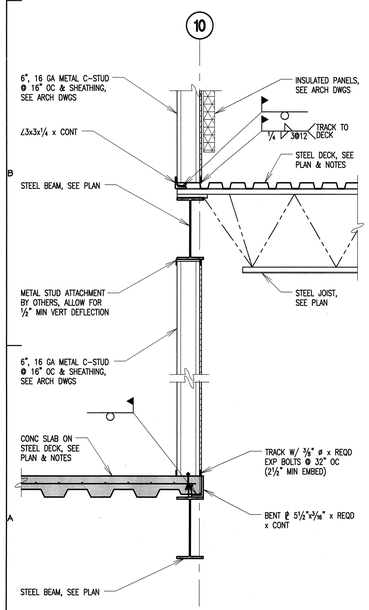
SE502-B6.dwg



A1 DECK BEARING DETAIL
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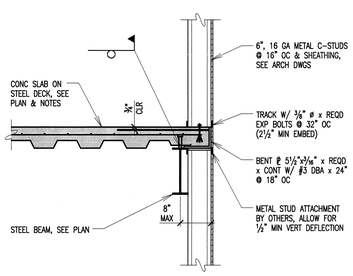

B2 DECK BEARING DETAIL
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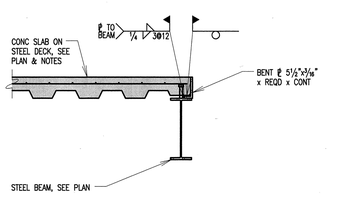
SE502-B2.dwg



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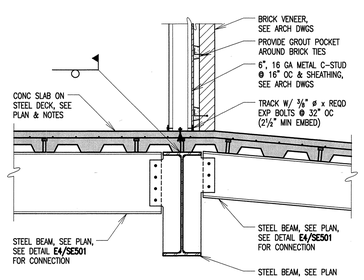

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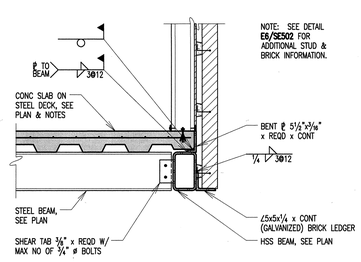

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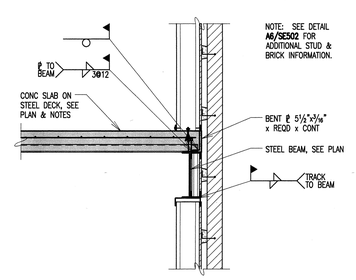
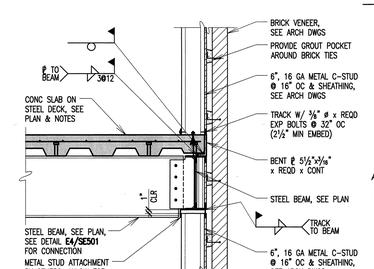
SE502-A4.dwg



A5 DECK BEARING DETAIL
SCALE: 3/4" = 1'-0"
SE502-A5.dwg



A6 BEAM CONNECTION DETAIL
SCALE: 3/4" = 1'-0"
SE502-A6.dwg

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absgconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM BENNION
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-9491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
SALT LAKE CITY UTAH

STATE OF UTAH
DIVISION OF FACILITIES AND CONSTRUCTION

4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

BID PACKAGE #2

3		
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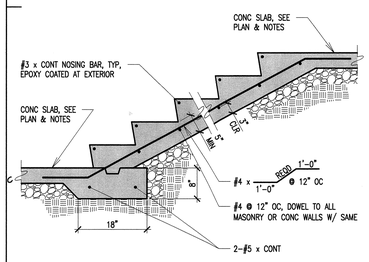
CD	10/01/2003	-
DD	09/24/2003	-

PROJECT NO: PROJECTNO
CAD DWG FILE: SE502.dwg
DRAWN BY: TKS
CHECKED BY: JEO

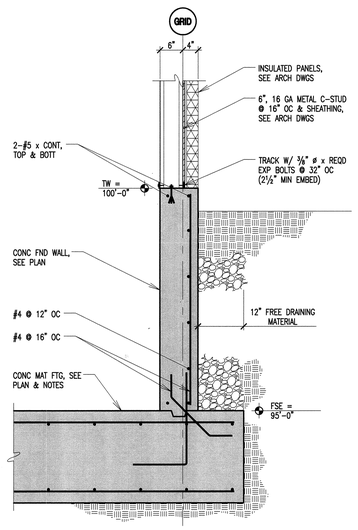
STRUCTURAL DETAILS

SE502

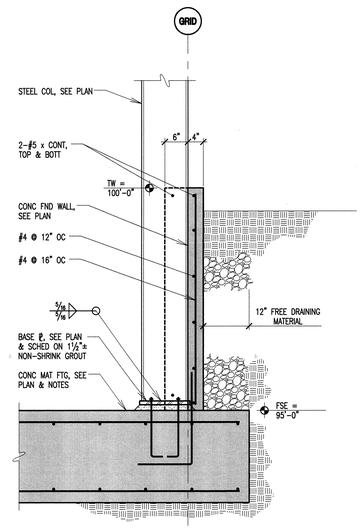
SHEET # OF 1



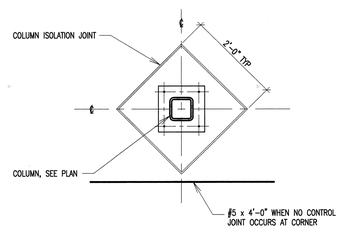
C1 CONCRETE STAIR ON GRADE DETAIL
SCALE: 3/4" = 1'-0"
SE501-C1.dwg



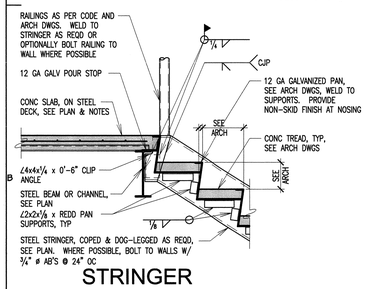
C3 MAT FOOTING DETAIL
SCALE: 3/4" = 1'-0"
SE501-C3.dwg



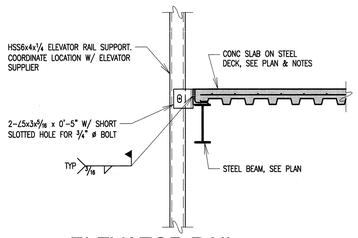
C4 COLUMN BASE DETAIL
SCALE: 3/4" = 1'-0"
SE501-C4.dwg



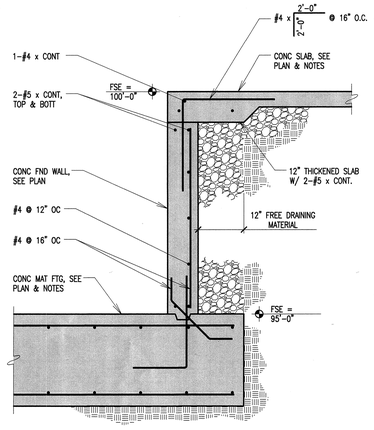
C6 PLAN VIEW
SCALE: 3/4" = 1'-0"
SE501-C6.dwg



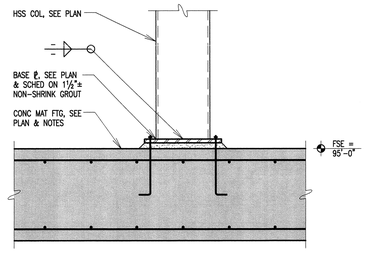
B1 STRINGER BEARING DETAIL
SCALE: 3/4" = 1'-0"
SE501-B1.dwg



B2 ELEVATOR RAIL SUPPORT CONN. DETAIL
SCALE: 3/4" = 1'-0"
SE501-B2.dwg



B3 MAT FOOTING DETAIL
SCALE: 3/4" = 1'-0"
SE501-B3.dwg



B4 COLUMN BASE DETAIL
SCALE: 3/4" = 1'-0"
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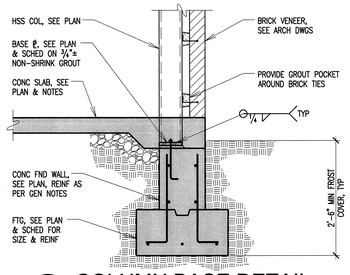
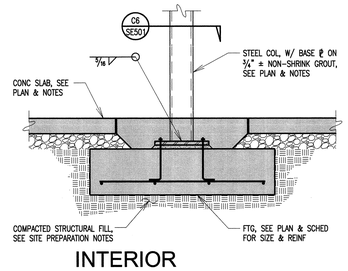
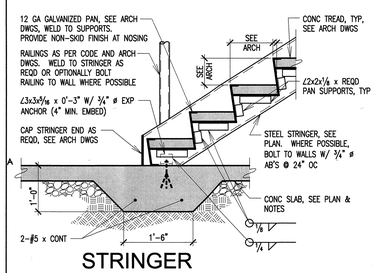


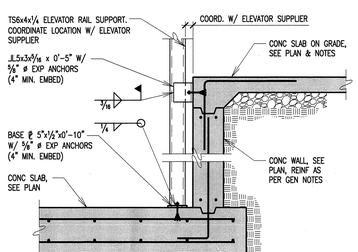
B5 COLUMN BASE DETAIL
SCALE: 3/4" = 1'-0"
SE501-B5.dwg



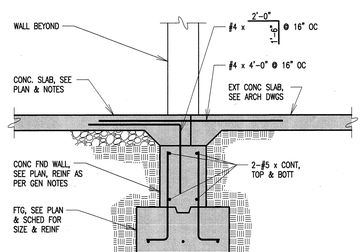
B6 INTERIOR COLUMN DETAIL
SCALE: 3/4" = 1'-0"
SE501-B6.dwg



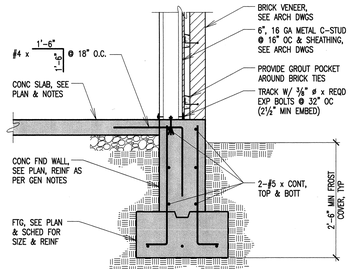
A1 STRINGER ANCHORAGE DETAIL
SCALE: 3/4" = 1'-0"
SE501-A1.dwg



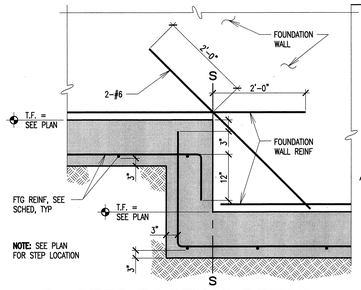
A2 ELEVATOR RAIL SUPPORT
SCALE: 3/4" = 1'-0"
SE501-A2.dwg



A4 DOOR OPENING DETAIL
SCALE: 3/4" = 1'-0"
SE501-A4.dwg

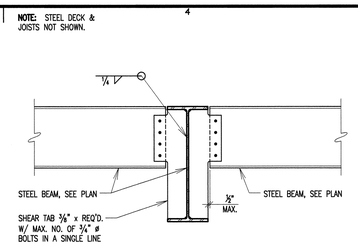


A5 EXT FOOTING DETAIL
SCALE: 3/4" = 1'-0"
SE501-A5.dwg



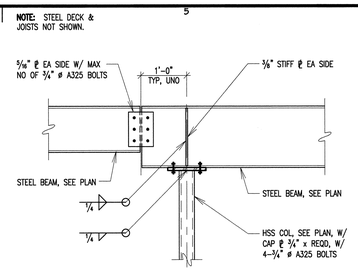
A6 STEP FOOTING DETAIL
SCALE: NONE
SE501-A6.dwg

NOTE: STEEL DECK & JOISTS NOT SHOWN.



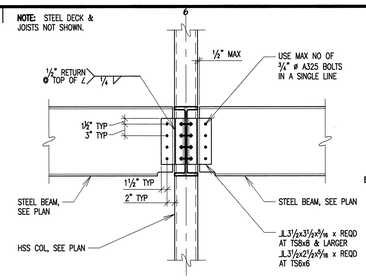
E4 BEAM CONNECTION DETAIL
SCALE: 3/4" = 1'-0"
SE501-E4.dwg

NOTE: STEEL DECK & JOISTS NOT SHOWN.



E5 BEAM SPLICE DETAIL
SCALE: 3/4" = 1'-0"
SE501-E5.dwg

NOTE: STEEL DECK & JOISTS NOT SHOWN.



E6 BEAM FRAMING DETAIL
SCALE: 3/4" = 1'-0"
SE501-E6.dwg

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700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
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(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
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FRUIT HEIGHTS, UT 84037
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bma@mailsnare.net

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SALT LAKE CITY, UTAH

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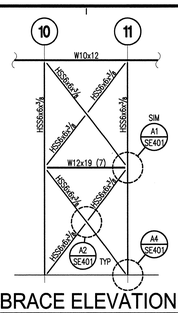
PROJECT NO: PROJECTNO
CAD DWG FILE: SE501.dwg
DRAWN BY: TKS
CHECKED BY: JEO

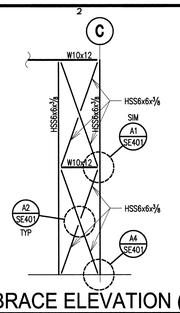
STRUCTURAL DETAILS

SE501

SHEET # OF 1



E1 X-BRACE ELEVATION (XB-1)
SCALE: 1/8" = 1'-0"
SE401-E1.dwg



E2 X-BRACE ELEVATION (XB-2)
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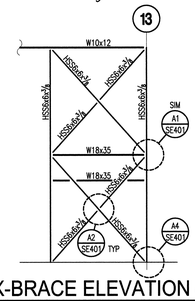
SE401-E2.dwg



E3 X-BRACE ELEVATION (XB-3)
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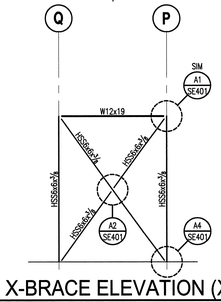
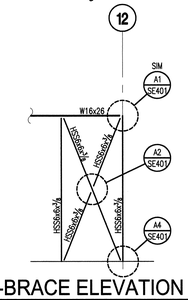
SE401-E3.dwg



E4 X-BRACE ELEVATION (XB-4)
SCALE: 1/8" = 1'-0"
SE401-E4.dwg



E5 X-BRACE ELEVATION (XB-5)
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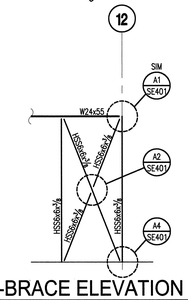
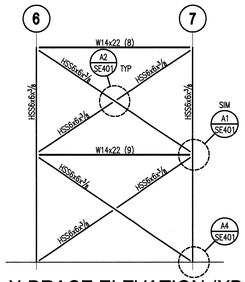
SE401-E5.dwg



E6 X-BRACE ELEVATION (XB-6)
SCALE: 1/8" = 1'-0"
SE401-E6.dwg



D1 X-BRACE ELEVATION (XB-7)
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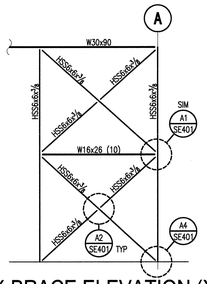
SE401-D1.dwg



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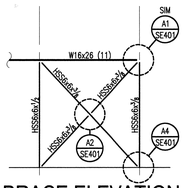
SE401-D2.dwg



C1 X-BRACE ELEVATION (XB-9)
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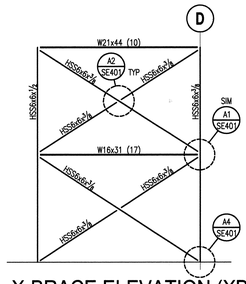
SE401-C1.dwg



C2 X-BRACE ELEVATION (XB-10)
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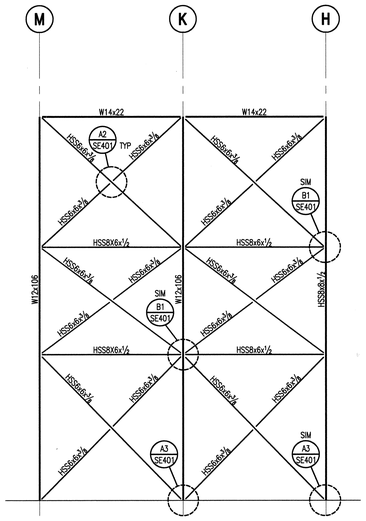
SE401-C2.dwg



C3 X-BRACE ELEVATION (XB-12)
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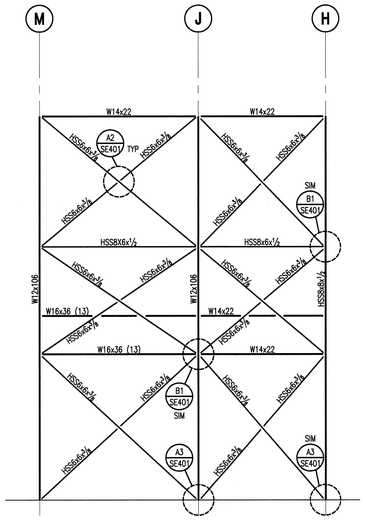
SE401-C3.dwg



C4 X-BRACE ELEVATION (XB-13)
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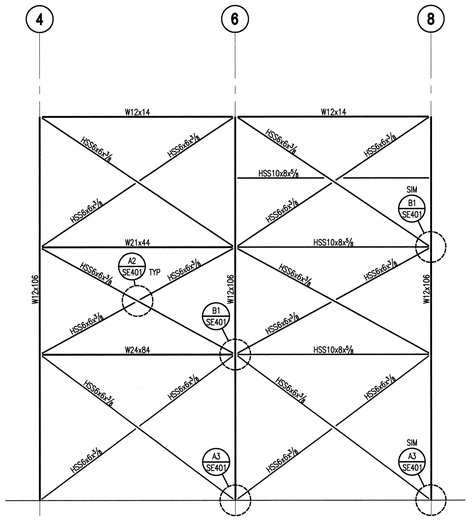
SE401-C4.dwg



C5 X-BRACE ELEVATION (XB-14)
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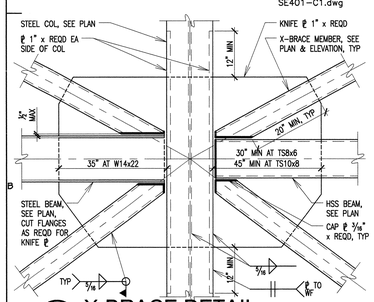
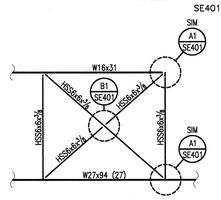
SE401-C5.dwg



B1 X-BRACE DETAIL
SCALE: 3/4" = 1'-0"
SE401-B1.dwg



B2 X-BRACE ELEVATION (XB-11)
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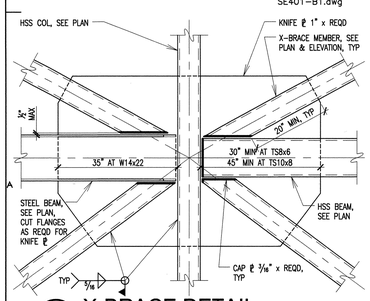
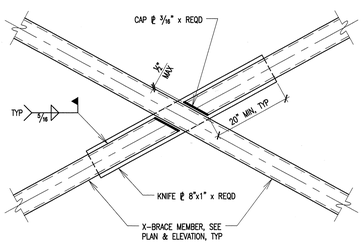
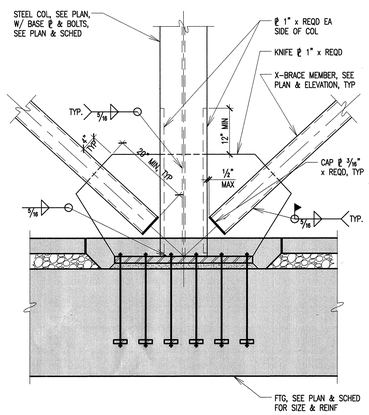
SE401-B2.dwg



A1 X-BRACE DETAIL
SCALE: 3/4" = 1'-0"
SE401-A1.dwg



A2 X-BRACE DETAIL
SCALE: 3/4" = 1'-0"
SE401-A2.dwg



A3 X-BRACE DETAIL
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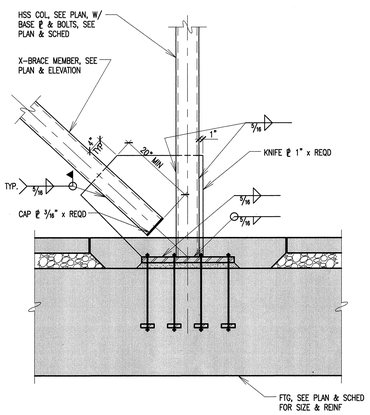
SE401-A3.dwg



A4 X-BRACE DETAIL
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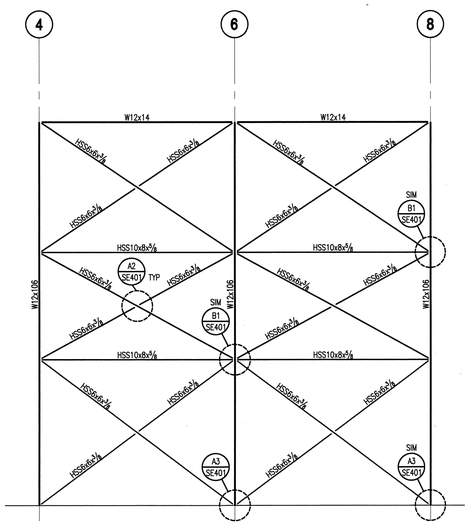
SE401-A4.dwg



A5 X-BRACE ELEVATION (XB-15)
SCALE: 1/8" = 1'-0"
SE401-A5.dwg

COOPER
ROBERTS
SIMONSEN
ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
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(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

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SALT LAKE CITY, UT 84101
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jott@absconsulting.com

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COLVIN ENGINEERING
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(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kangstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
SALT LAKE CITY UTAH

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DIVISION OF FACILITIES AND CONSTRUCTION

4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

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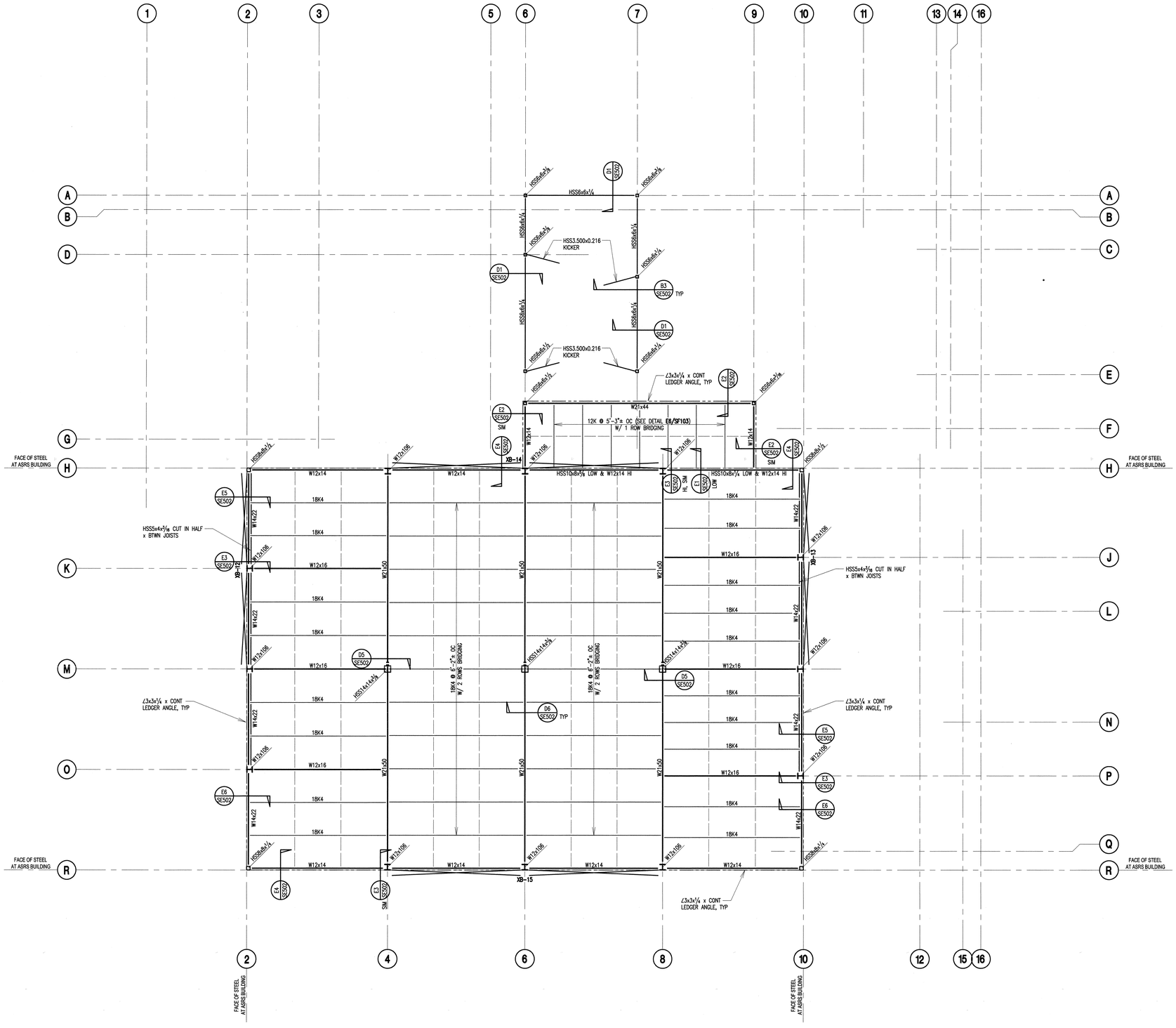
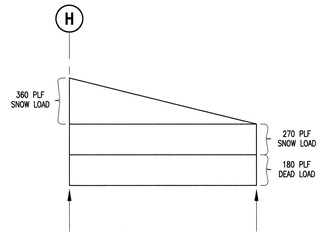
SCHEMATIC X-BRACE ELEVATIONS

SE401

SHEET # OF 1





E6 JOIST LOAD DIAGRAM
SCALE: NONE

SF103-E6.dwg

HIGH ROOF FRAMING NOTES:

1. **TYPICAL ROOF DECK:**

   1½" DEEP, 20 GAUGE, GALVANIZED, TYPE "B" DECK, WITH INTERLOCKING SIDE LAPS. USE 3 SPAN MINIMUM. MINIMUM DIAPHRAGM SHEAR = 650 PLF.

   WELD DECK AS FOLLOWS:
   - ATTACH SIDE LAPS W/ 1½" LONG TOP SEAM WELDS @ 24" OC.
   - ATTACH TO PERPENDICULAR SUPPORTS W/ ¾" ø PUDDLE WELDS @ EVERY FLUTE.
   - ATTACH TO PARALLEL SUPPORTS W/ ¾" ø PUDDLE WELDS @ 12" OC.

2. USE DETAIL **D6/SE001** AT FLOOR AND ROOF OPENINGS, TYP. COORDINATE LOCATIONS OF OPENINGS WITH ARCHITECTURAL AND/OR MECHANICAL DRAWINGS.

3. XB-# DENOTES X-BRACE ELEVATION, SEE SHEET **SE401**.

4. BEAM TO BEAM CONNECTIONS SHALL BE AS PER DETAIL **E4/S501**, UNO.
   BEAM TO COLUMN CONNECTIONS SHALL BE AS PER DETAIL **E8/SE001**, UNO.

A1 HIGH ROOF FRAMING PLAN
SCALE: 1/8" = 1'-0"

S-FP03.dwg

A6 HIGH ROOF FRAMING NOTES
SCALE: NONE

S-XREF-ANN0.dwg

COOPER ROBERTS SIMONSEN ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@abaconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM BENNION
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

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3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
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BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

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HIGH ROOF FRAMING PLAN

SF103

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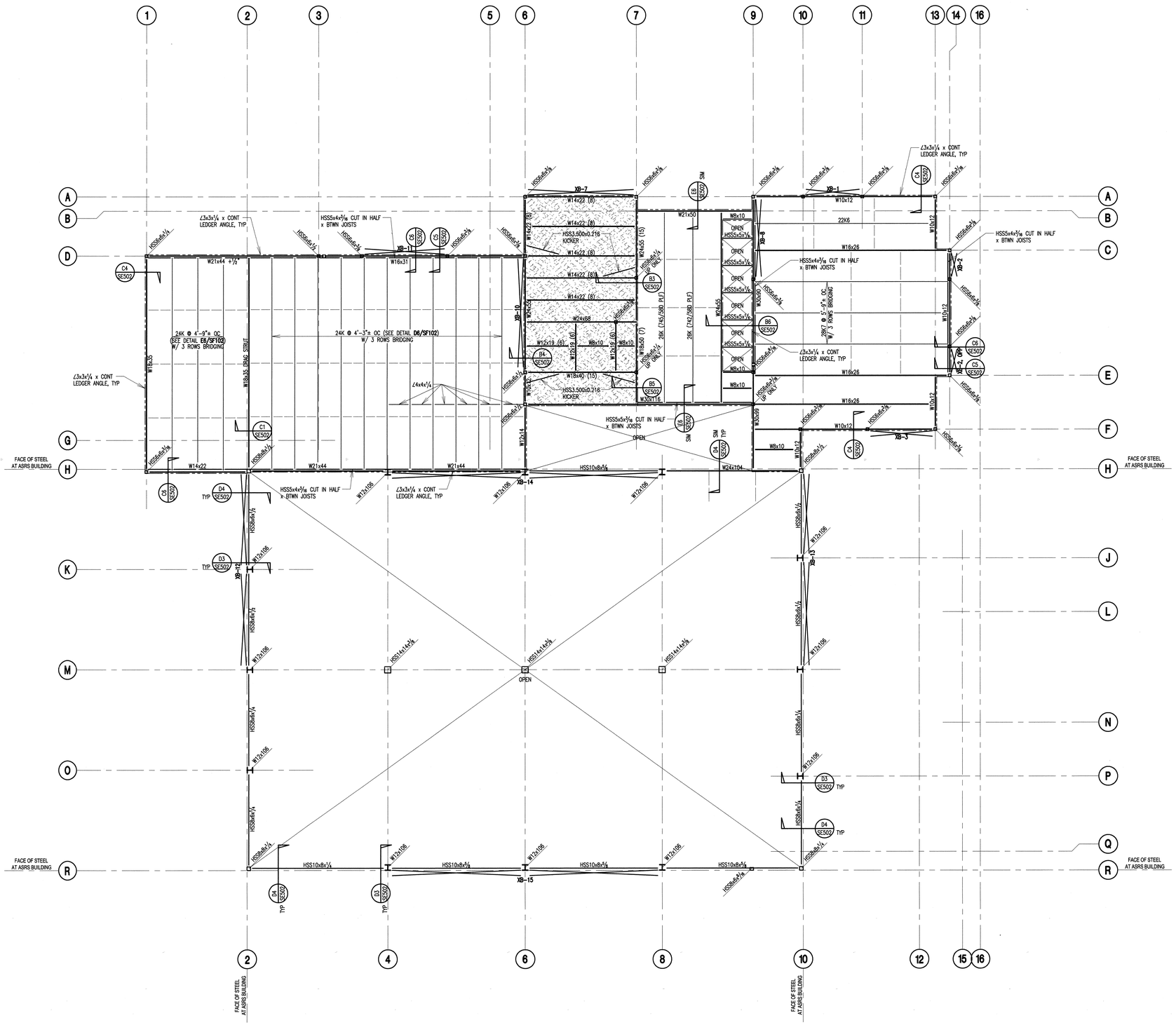
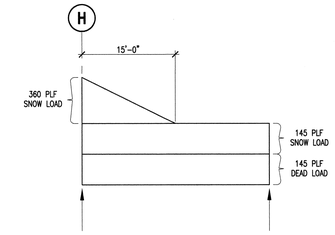


E6 JOIST LOAD DIAGRAM

SCALE: NONE



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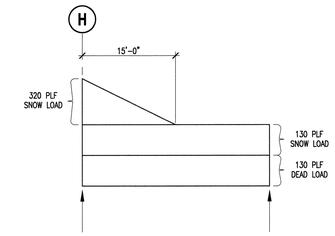
D6 JOIST LOAD DIAGRAM

SCALE: NONE



SF102-D6.dwg

INTERMEDIATE ROOF FRAMING NOTES:

1. **MECHANICAL FLOOR SLABS, UNO:**

   4" CONCRETE SLAB ON 1½" DEEP, 20 GAUGE, PHOSPHATIZED / PAINTED, COMPOSITE "B" DECK, WITH INTERLOCKING SIDE LAPS. DECK SHALL HAVE A MINIMUM YIELD STRENGTH OF 38,000 PSI. REINFORCE CONCRETE SLAB W/ 6x6-W1.4xW1.4 W.W.F. (USE FLAT SHEETS). FSE = SEE ARCHITECTURAL DRAWINGS.

   WELD DECK AS FOLLOWS:
   - BUTTON PUNCH FLOOR DECK SIDE LAPS @ 12" OC.
   - ATTACH TO PERPENDICULAR SUPPORTS W/ ¾" ø PUDDLE WELDS @ EVERY FLUTE.
   - ATTACH TO PARALLEL SUPPORTS W/ ¾" ø PUDDLE WELDS @ 12" OC.

2. **TYPICAL ROOF DECK:**

   1½" DEEP, 20 GAUGE, GALVANIZED, TYPE "B" DECK, WITH INTERLOCKING SIDE LAPS. USE 3 SPAN MINIMUM. MINIMUM DIAPHRAGM SHEAR = 680 PLF.

   WELD DECK AS FOLLOWS:
   - ATTACH SIDE LAPS W/ 1½" LONG TOP SEAM WELDS @ 24" OC.
   - ATTACH TO PERPENDICULAR SUPPORTS W/ ¾" ø PUDDLE WELDS @ EVERY FLUTE.
   - ATTACH TO PARALLEL SUPPORTS W/ ¾" ø PUDDLE WELDS @ 12" OC.

3. USE DETAIL **D6/SE001** AT FLOOR AND ROOF OPENINGS, TYP. COORDINATE LOCATIONS OF OPENINGS WITH ARCHITECTURAL AND/OR MECHANICAL DRAWINGS.

4. XB-# DENOTES X-BRACE ELEVATION, SEE SHEET **SE401**.

5. NUMBER IN PARENTHESES FOLLOWING BEAM SIZE DENOTES NUMBER OF ¾" ø x 3½" WAS TO BE EQUALLY SPACED ALONG THE TOP FLANGE OF THE BEAM.

6. POSITIVE WHOLE OR FRACTIONAL INCHES FOLLOWING BEAM SIZE (+X/X") INDICATE POSITIVE CAMBER.

7. BEAM TO BEAM CONNECTIONS SHALL BE AS PER DETAIL **E4/SS01**, UNO.
   BEAM TO COLUMN CONNECTIONS SHALL BE AS PER DETAIL **E8/SE001**, UNO.

8. FOR BRICK VENEER SUPPORT OVER OPENINGS NOT DETAILED, SEE STEEL ANGLE LINTEL SCHEDULE, **A3/SE001**.

9. AT BEAMS MARKED "DRAG STRUT", USE X-BRACE KNIFE PLATE CONNECTIONS OF BEAM TO COLUMNS.

A1 INTERMEDIATE ROOF FRAMING PLAN

SCALE: 1/8" = 1'-0"

S-FP02.dwg

A6 INTERMEDIATE ROOF FRAMING NOTES

SCALE: NONE

S-XREF-ANN0.dwg

COOPER ROBERTS SIMONSEN ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
johf@abaconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM BENNION
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kangstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

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300 SOUTH 500 WEST
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CHECKED BY:	JEO

INTERMEDIATE ROOF FRAMING PLAN

SF102

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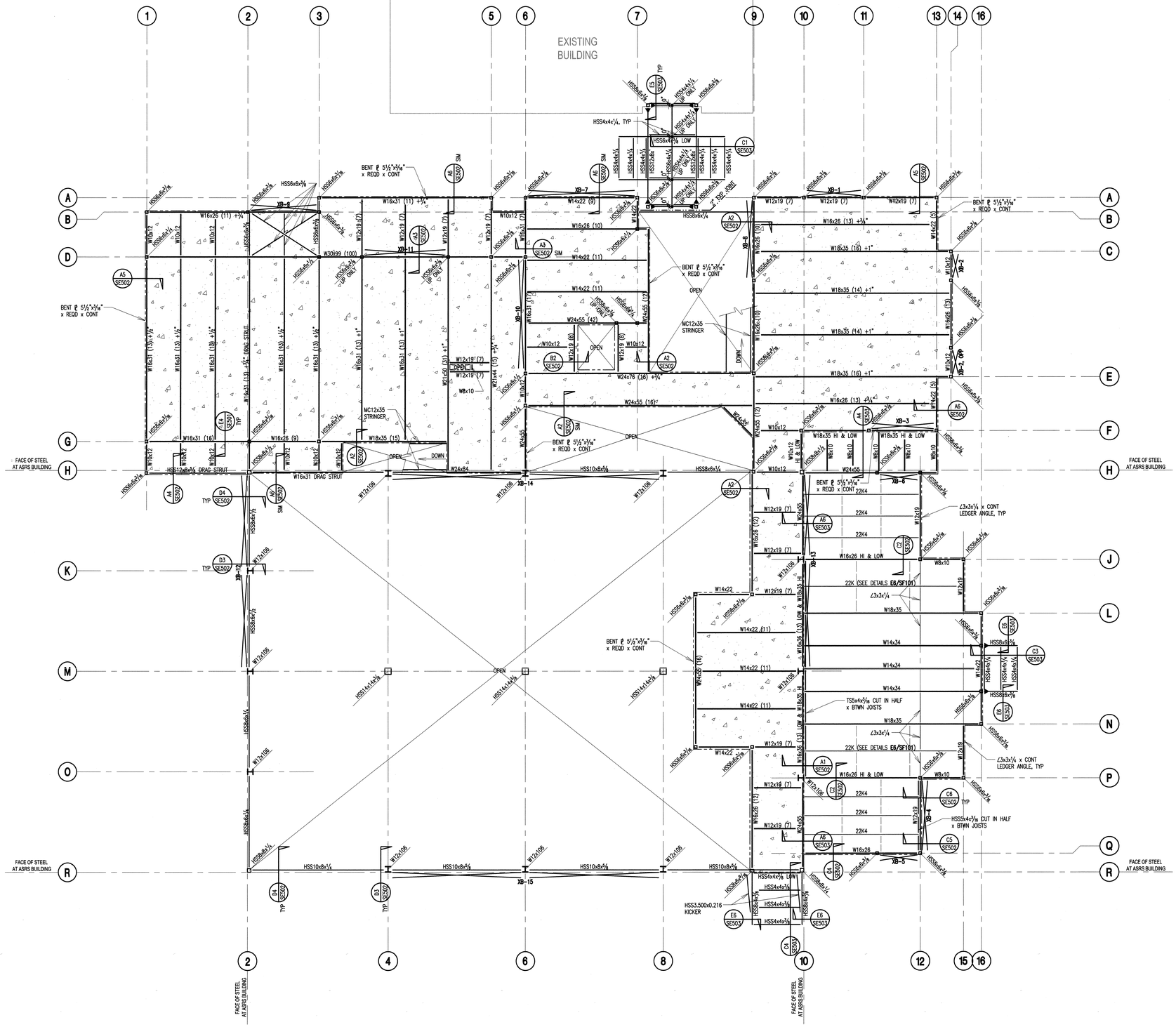
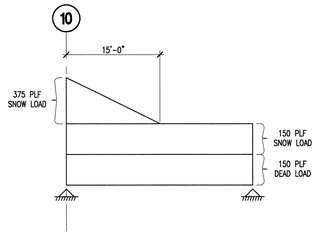


SECOND FLOOR & LOW ROOF FRAMING PLAN

A1 SCALE: 1/8" = 1'-0"

S-FP01.dwg



E6 JOIST LOAD DIAGRAM

SCALE: NONE

SF101-E6.dwg

SECOND FLOOR & LOW ROOF FRAMING NOTES:

1. **TYPICAL SUSPENDED FLOOR SLABS, UNO:**

   5½" LTWT CONCRETE SLAB ON 2" DEEP, 20 GAUGE, PHOSPHATIZED / PAINTED, COMPOSITE "W2" DECK, WITH INTERLOCKING SIDE LAPS. DECK SHALL HAVE A MINIMUM YIELD STRENGTH OF 38,000 PSI. REINFORCE CONCRETE SLAB W/ 6x6-W1.4xW1.4 W.W.F. (USE FLAT SHEETS). FSE = 114'-0", SEE ARCHITECTURAL DRAWINGS.

   WELD DECK AS FOLLOWS:
   - BUTTON PUNCH FLOOR DECK SIDE LAPS @ 12" OC.
   - ATTACH TO PERPENDICULAR SUPPORTS W/ ¾" ø PUDDLE WELDS @ EVERY FLUTE.
   - ATTACH TO PARALLEL SUPPORTS W/ ¾" ø PUDDLE WELDS @ 12" OC.

2. **TYPICAL ROOF DECK:**

   1½" DEEP, 20 GAUGE, GALVANIZED, TYPE "B" DECK, WITH INTERLOCKING SIDE LAPS. USE 3 SPAN MINIMUM. MINIMUM DIAPHRAGM SHEAR = 680 PLF.

   WELD DECK AS FOLLOWS:
   - ATTACH SIDE LAPS W/ 1½" LONG TOP SEAM WELDS @ 24" OC.
   - ATTACH TO PERPENDICULAR SUPPORTS W/ ¾" ø PUDDLE WELDS @ EVERY FLUTE.
   - ATTACH TO PARALLEL SUPPORTS W/ ¾" ø PUDDLE WELDS @ 12" OC.

3. USE DETAIL **D6/SE001** AT FLOOR AND ROOF OPENINGS, TYP. COORDINATE LOCATIONS OF OPENINGS WITH ARCHITECTURAL AND/OR MECHANICAL DRAWINGS.

4. XB-# DENOTES X-BRACE ELEVATION, SEE SHEET **SE401**.

5. NUMBER IN PARENTHESES FOLLOWING BEAM SIZE DENOTES NUMBER OF ¾" ø x 3½" WAS TO BE EQUALLY SPACED ALONG THE TOP FLANGE OF THE BEAM.

6. POSITIVE WHOLE OR FRACTIONAL INCHES FOLLOWING BEAM SIZE (+X/X") INDICATE POSITIVE CAMBER.

7. BEAM TO BEAM CONNECTIONS SHALL BE AS PER DETAIL **E4/SS01**, UNO. BEAM TO COLUMN CONNECTIONS SHALL BE AS PER DETAIL **E8/SE001**, UNO.

8. FOR BRICK VENEER SUPPORT OVER OPENINGS NOT DETAILED, SEE STEEL ANGLE LINTEL SCHEDULE, **A3/SE001**.

9. STAIR STRINGERS SHALL TYPICALLY CONNECT TO STRUCTURE AS PER DETAILS **A1 & B1/SE501**.

10. HSS ELEVATOR RAIL SUPPORTS SHALL TYPICALLY CONNECT TO STRUCTURE AS PER DETAILS **A2 & B2/SE501**.

11. AT BEAMS MARKED "DRAG STRUT", USE X-BRACE KNIFE PLATE CONNECTIONS OF BEAM TO COLUMNS.

A6 SECOND FLOOR & LOW ROOF FRAMING NOTES

SCALE: NONE

S-XREF-ANNO.dwg

COOPER ROBERTS SIMONSEN ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM BENNION
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
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CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

STATE ARCHIVES BUILDING

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SECOND FLOOR & LOW ROOF FRAMING PLAN

SF101

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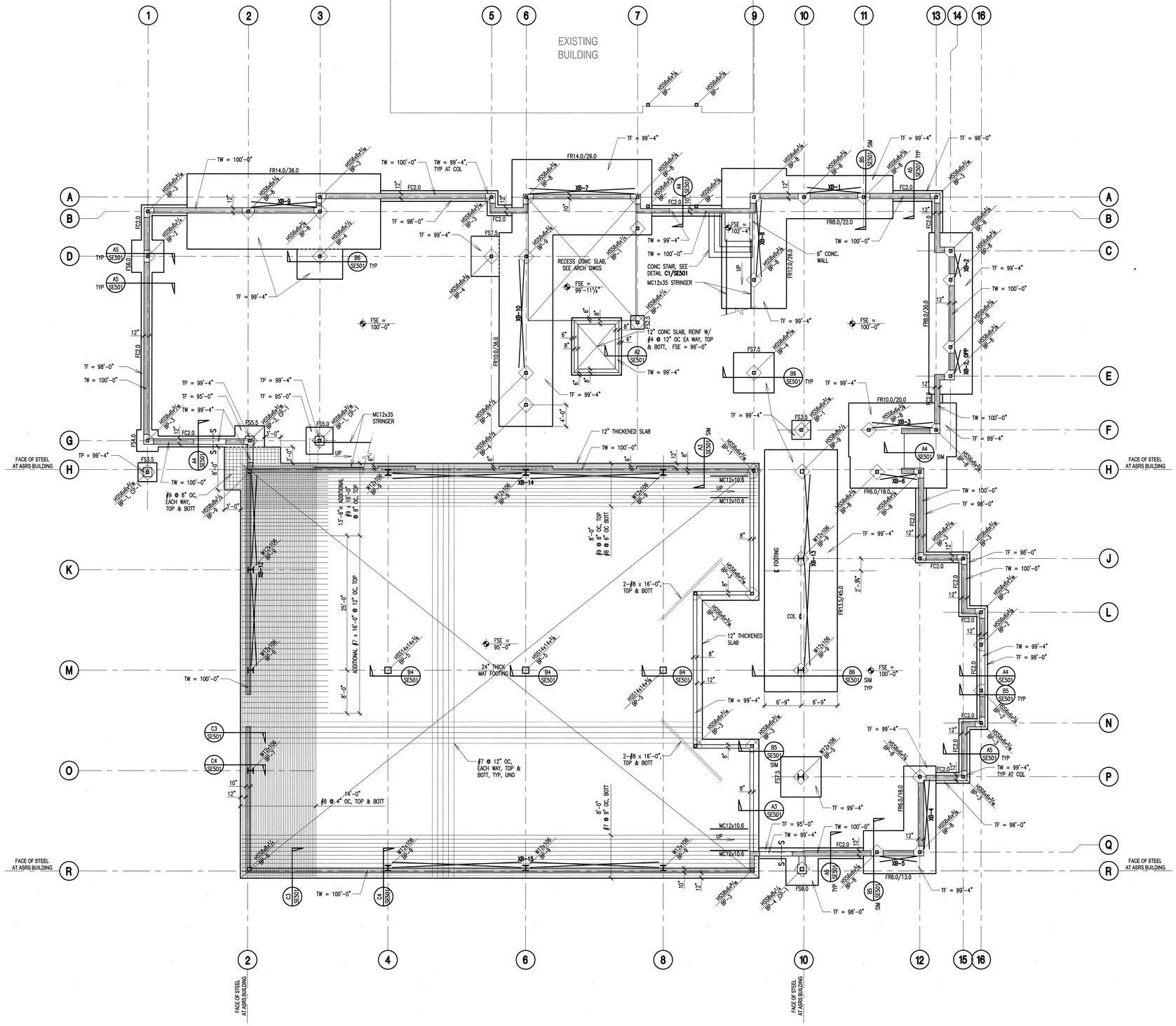

FOOTING & FOUNDATION NOTES:

1. ALL SLABS ON GRADE SHALL BE 4", UNO.
   FSE = SEE ARCHITECTURAL DRAWINGS.
2. BP-# DENOTES BASE PLATE,
   SEE BASE PLATE SCHEDULE, **C5/SE001**.

   FC# DENOTES CONTINUOUS FOOTING,
   FR#/# DENOTES RECTANGULAR SPREAD FOOTING,
   FS# DENOTES SQUARE SPREAD FOOTING,
   SEE FOOTING SCHEDULE, **A5/SE001**.
3. XB-# DENOTES X-BRACE ELEVATION, SEE SHEET **SE401**.
4. STAIR STRINGERS SHALL TYPICALLY CONNECT TO STRUCTURE AS PER DETAILS **A1 & B1/SE501**.
5. HSS ELEVATOR RAIL SUPPORTS SHALL TYPICALLY CONNECT TO STRUCTURE AS PER DETAILS **A2 & B2/SE501**.
6. CP-1 DENOTES 20"x20" CONC PEIR, REINF W/ 8-#7 VERTS, 2-#3 TIES @ 8" OC, & 3 SETS OF TIES @ 2" OC AT TOP OF PIER.

A1 FOOTING & FOUNDATION PLAN
SCALE: 1/8" = 1'-0"

S-NP01.dwg

A6 FOOTING & FOUNDATION NOTES
SCALE: NONE

S-XREF-ANNO.dwg

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crsa

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SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

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FOOTING & FOUNDATION PLAN

SB101

SHEET # OF 1

GENERAL NOTES

GENERAL:

1. ALL DETAILS, SECTIONS, AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE UNLESS NOTED OR SHOWN OTHERWISE. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER THESE GENERAL NOTES. GENERAL NOTES SHALL TAKE PRECEDENCE OVER THE SPECIFICATIONS.

2. REFER TO THE SPECIFICATIONS FOR INFORMATION NOT COVERED BY THESE GENERAL NOTES OR THE STRUCTURAL DRAWINGS.

3. SEE THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS, DOORS, WINDOWS, NON-BEARING INTERIOR AND EXTERIOR WALLS, ELEVATIONS, SLOPES, STAIRS, CURBS, DRAINS, RECESSES, DEPRESSIONS, RAILINGS, WATERPROOFING, FINISHES, CHAMFERS, KERFS, ETC.

4. ALL CONSTRUCTION AND INSPECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE (IBC). THE CONTRACTOR SHALL COORDINATE ALL REQUIRED INSPECTIONS AND SHALL NOT PROCEED WITH THE WORK INVOLVED UNTIL THE INSPECTIONS HAVE BEEN DONE.

5. ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE IBC.

6. ALL ASTM DESIGNATIONS SHALL BE AS AMENDED TO DATE, UNO.

7. THE CONTRACTOR MUST SUBMIT A WRITTEN REQUEST FOR, AND OBTAIN THE ARCHITECT'S AND/OR THE STRUCTURAL ENGINEER'S WRITTEN PRIOR APPROVAL FOR ALL CHANGES, MODIFICATIONS, AND/OR SUBSTITUTIONS.

8. THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY AND PROTECTION IN AND AROUND THE JOB SITE AND/OR ADJACENT PROPERTIES.

10. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING FOR ALL PORTIONS OF THE BUILDING UNTIL THE ENTIRE STRUCTURE OF THE BUILDING IS COMPLETE.

11. DURING AND AFTER CONSTRUCTION, THE CONTRACTOR AND/OR THE OWNER SHALL KEEP THE LOADS ON THE STRUCTURE WITHIN THE LIMITS OF THE DESIGN LOADS.

12. OBSERVATION VISITS TO THE SITE BY REPRESENTATIVES OF ABS CONSULTING INC. SHALL NEITHER BE CONSTRUED AS INSPECTION NOR APPROVAL OF CONSTRUCTION.

13. IF EXISTING CONDITIONS AT THE SITE ARE NOT AS SHOWN ON THE DRAWINGS, THE ARCHITECT AND/OR STRUCTURAL ENGINEER SHALL BE NOTIFIED IMMEDIATELY. CHANGES MAY OCCUR DUE TO SUCH VARIATIONS IN EXISTING CONDITIONS.

14. ALL EQUIPMENT ANCHOR BOLT SIZES AND LOCATIONS SHALL BE VERIFIED IN THE FIELD WITH THE EQUIPMENT MANUFACTURER'S CERTIFIED DRAWINGS, LATEST REVISION, BEFORE PLACING CONCRETE.

15. ALL ELEVATOR MACHINERY SUPPORT BEAMS, GUIDE RAIL SUPPORTS, ETC. SHALL BE SUPPLIED BY THE ELEVATOR MANUFACTURER UNLESS NOTED OR SHOWN OTHERWISE ON THE DRAWINGS.

16. ALL STAIRS ARE TO BE STEEL STAIRS AS PER THE ARCHITECTURAL DRAWINGS, EXCEPT WHEN CONCRETE STAIRS ARE SPECIFICALLY SHOWN.

17. THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL LOCATIONS AND SIZES OF LOADS FOR MECHANICAL UNITS AND/OR OTHER EQUIPMENT OR DEVICES PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY SUPPORTING STRUCTURE. SUCH LOADS SHALL BE REPORTED TO THE ARCHITECT AND/OR STRUCTURAL ENGINEER FOR REVIEW. ADDITIONAL FRAMING MAY BE REQUIRED FOR THE PROPER SUPPORT OF SUCH UNITS OR EQUIPMENT. COORDINATE WITH THE ARCHITECT AND/OR STRUCTURAL ENGINEER.

18. THE CONTRACTOR SHALL COORDINATE ALL ROOF AND FLOOR OPENINGS REQUIRED WITH MECHANICAL AND/OR OTHER DRAWINGS TO ACCOMMODATE ALL MECHANICAL AND/OR OTHER UNITS, OPENINGS, ETC. AN ANGLE FRAME AS DETAILED SHALL BE PROVIDED AROUND ALL OPENINGS WHICH EXCEED 8" IN ANY DIRECTION. SEE DETAIL **D6/SE001**.

19. NO PENETRATIONS SHALL BE ALLOWED THROUGH ANY CONCRETE BEAMS, COLUMNS, PIERS, OR JAMBS, WITHOUT THE ARCHITECT'S AND/OR STRUCTURAL ENGINEER'S WRITTEN APPROVAL. MECHANICAL AND/OR OTHER PENETRATIONS SHALL BE RE-ROUTED AS REQUIRED AT THESE LOCATIONS.

20. ALL PENETRATIONS THROUGH ANY CONCRETE WALLS SHALL BE BUILT INTO THE WALL AS THE WALL IS BEING CONSTRUCTED AND SHALL BE REVIEWED BY THE ARCHITECT AND/OR STRUCTURAL ENGINEER PRIOR TO INSTALLATION.

21. NO PENETRATIONS SHALL BE ALLOWED THROUGH ANY CONCRETE FOOTINGS. WHEN CONFLICTS ARISE BETWEEN UNDERGROUND PLUMBING, UTILITIES, ETC, THE FOOTING SHALL BE STEPPED DOWN BELOW THE CONFLICT AND A WALL, PIER, OR COLUMN, ETC, SHALL BE EXTENDED TO THE FOOTING AS REQUIRED. COORDINATE WITH THE ARCHITECT AND/OR STRUCTURAL ENGINEER.

22. THE CONTRACTOR SHALL COORDINATE ALL WORK BETWEEN THE VARIOUS TRADES. ALL OMISSIONS AND/OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR THE SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND/OR STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY WORK INVOLVED.

23. AB DENOTES "ANCHOR BOLT".

24. DBA DENOTES "DEFORMED BAR ANCHOR".

25. DBE DENOTES "DECK BEARING ELEVATION".

26. FSE DENOTES "FINISH SLAB ELEVATION".

27. NIC DENOTES "NOT IN CONTRACT".

28. NTS DENOTES "NOT TO SCALE".

29. OC DENOTES "ON CENTER".

30. TF DENOTES "TOP OF FOOTING ELEVATION".

31. TOS DENOTES "TOP OF STEEL ELEVATION".

32. TP DENOTES "TOP OF PIER ELEVATION".

33. TW DENOTES "TOP OF WALL ELEVATION".

34. UNO DENOTES "UNLESS NOTED OTHERWISE".

35. WAS DENOTES "WELDED ANCHOR STUD".

36. WWF DENOTES "WELDED WIRE FABRIC".

37. (E) DENOTES "EXISTING" CONSTRUCTION.

38. (N) DENOTES "NEW" CONSTRUCTION.

SPECIAL INSPECTIONS:

1. THE OWNER SHALL HIRE QUALIFIED SPECIAL INSPECTORS TO INSPECT THE FOLLOWING WORK. THE WORK AND REPORTS OF THE SPECIAL INSPECTOR OR INSPECTORS SHALL MEET THE REQUIREMENTS OF INTERNATIONAL BUILDING CODE CHAPTER 17.

SOILS
CONCRETE AND REINFORCING STEEL
INSTALLATION OF ANCHORS IN EXISTING AND NEW CONCRETE, BRICK MASONRY, AND STONE MASONRY
STRUCTURAL STEEL, INCLUDING WELDING AND HIGH STRENGTH BOLTING
SPRAY-APPLIED FIREPROOFING

CONCRETE:

1. USE PORTLAND CEMENT, TYPE I/II.

2. ALL CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH EQUAL TO AT LEAST 4000 PSI WITHIN 28 DAYS AFTER PLACING EXCEPT;

FOOTINGS AND FOUNDATION WALLS SHALL BE AT LEAST 3000 PSI.

3. ALL METAL REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60, WITH A MINIMUM YIELD STRENGTH OF 60,000 PSI, UNO, EXCEPT REINFORCEMENT TO BE WELDED SHALL CONFORM TO ASTM A706, GRADE 60.

4. ALL REINFORCING BARS SHALL BE DETAILED, BOLSTERED, AND SUPPORTED IN ACCORDANCE WITH ACI 315 – 92.

5. ALL REINFORCING BARS SHALL BE SECURELY ANCHORED TO THE FORMS AND SPACED FROM THEM AS FOLLOWS:

(a) FOR CONCRETE NOT EXPOSED DIRECTLY TO THE GROUND OR WEATHER, 3/4" IN SLABS, JOISTS, AND WALLS; 1 1/2" IN PIERS, COLUMNS, GIRDERS, AND BEAMS.

(b) FOR CONCRETE EXPOSED TO THE GROUND OR WEATHER, 2" IN WALLS, PIERS, AND COLUMNS; 3" ABOVE BOTTOM OF FOOTINGS.

6. ALL REINFORCING SHALL BE CONTINUOUS IN WALLS, BEAMS, COLUMNS, ETC. ALL SPLICES IN CONTINUOUS REINFORCING BARS SHALL LAP 40 BAR DIAMETERS. ALL SPLICES IN SPECIAL REINFORCING IN MAT FOOTING SHALL LAP 60 BAR DIAMETERS (STANDARD #7 @ 12" OC SHALL LAP 40 BAR DIAMETERS). ALL SUCH SPLICES SHALL BE MADE IN A REGION OF COMPRESSION UNLESS NOTED OR SHOWN OTHERWISE. TENSION SPLICES SHALL BE A CLASS B SPLICE AS DEFINED IN THE LATEST EDITION OF THE IBC.

7. MAKE ALL CONCRETE SLABS ON GRADE AT LEAST 4" THICK, UNO.

8. PROVIDE 2x4 BEVELED KEY IN ALL WALL FOOTINGS.

9. LARGE AREAS OF SLAB ON GRADE SHALL BE PLACED IN STRIPS SUBDIVIDED BY CONTRACTION OR CONSTRUCTION JOINTS INTO ROUGHLY SQUARES WHOSE SIDES SHALL NOT EXCEED 10' IN EITHER DIRECTION. SEE TYPICAL SLAB JOINT DETAIL **D5/SE001**.

10. THE EXTENT OF CONCRETE POURS SHALL BE FROM ℄ OF SPAN TO ℄ OF SPAN, AND SHALL NOT EXCEED 3,000 SQ. FT. OR 64'-0" IN ANY ONE DIRECTION UNLESS SPECIFICALLY NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.

11. REINFORCE ALL CONCRETE WALLS AS FOLLOWS, UNO.:

	HORIZONTAL REINF.	VERTICAL REINF.
6" WALL	#4 @ 13" OC	#4 @ 18" OC
8" WALL	#5 @ 15" OC	#4 @ 16" OC
10" WALL	#5 @ 12" OC	#4 @ 13" OC
12" WALL	#4 @ 13" OC EACH FACE	#4 @ 18" OC EACH FACE
14" WALL	#4 @ 11" OC EACH FACE	#4 @ 18" OC EACH FACE
16" WALL	#5 @ 15" OC EACH FACE	#4 @ 16" OC EACH FACE
18" WALL	#5 @ 13" OC EACH FACE	#4 @ 14" OC EACH FACE

PLACE STEEL IN CENTER OF WALL, UNO (EXCEPT WALLS THICKER THAN 10") AND DOWEL TO FOOTING OR TO STRUCTURE ABOVE AND BELOW WITH SAME DOWEL SIZE AND SPACING AS VERTICAL REINFORCEMENT. ALL DOWELS SHALL HAVE AT LEAST 30 BAR DIAMETERS EMBEDMENT. PROVIDE CORNER BARS AT ALL INTERSECTING CORNERS. USE SAME SIZE BAR AND SPACING AS HORIZONTAL WALL REINFORCEMENT.

12. ADD 2-#5 BARS AROUND ALL OPENINGS, UNO, AND EXTEND 2'-0". BEYOND THE CORNER OF THE OPENINGS.

13. ADD 2-#6 LONGITUDINAL TOP BARS TO ALL CONTINUOUS FOOTINGS WITHOUT FOUNDATION WALLS ABOVE.

14. PROVIDE 40 BAR DIAMETER BAR SPLICE IN ALL CONTINUOUS FOOTINGS AT CORNERS AND INTERSECTIONS BY LAPPING BARS AND/OR USING CORNER BARS.

STEEL:

1. ALL STRUCTURAL STEEL AND STRUCTURAL STEEL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE AISC "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", AND THE "CODE OF STANDARD PRACTICE" EXCLUDING THE FOLLOWING: SECTION 1.5.1; SECTION 3.3, (FIRST SENTENCE); SECTION 4.2; SECTION 4.2.1; SECTION 4.2.2; SECTION 7.5.4; AND SECTION 7.11.5.

2. ALL STRUCTURAL STEEL SHALL BE ASTM A572 GRADE 50, ALL MISCELLANEOUS STEEL SHALL BE ASTM A36, AND ALL STRUCTURAL TUBING SHALL BE MANUFACTURED TO Fy=46 KSI UNDER ASTM A500, GRADE B, AND ALL PIPE COLUMNS SHALL BE MANUFACTURED TO Fy=36 KSI UNDER ASTM A53.

3. ALL WELDS, WELDING, AND GAS CUTTING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS OF "THE AMERICAN WELDING SOCIETY," USING E70XX ELECTRODES, UNO. ALL WELDERS SHALL BE CURRENTLY CERTIFIED. ALL SHOP WELDING SHALL BE DONE BY AN APPROVED FABRICATOR AS PER THE IBC.

4. ALL BOLTS SHALL BE 3/4" DIAMETER A325 BOLTS, EXCEPT THAT ANCHOR BOLTS SHALL BE A307 BOLTS WITH DIAMETERS AS SPECIFIED. ALL BOLTED CONNECTIONS SHALL HAVE WASHERS AS PER THE AISC SPECIFICATIONS. ALL STEEL TO STEEL CONNECTIONS SHALL BE TIGHTENED ACCORDING TO AISC SPECIFICATIONS AND LOAD INDICATOR WASHERS SHALL BE USED ON ALL FRICTION TYPE CONNECTIONS.

5. ALL STEEL JOISTS, JOIST GIRDERS, AND ASSOCIATED WORK SHALL COMPLY WITH THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS OF THE STEEL JOIST INSTITUTE" AND SHALL HAVE SPECIFIC PRODUCT APPROVAL OF SJI.

6. MECHANICAL EQUIPMENT, PIPES, AND OTHER CONCENTRATED LOADS, SHALL NOT BE PLACED ON NOR HUNG FROM STEEL JOISTS UNLESS THEY ARE AT PANEL POINTS OR A BRACE (2 ANGLES, ∠2x2x1/4) IS INSTALLED BETWEEN THE LOAD AND THE NEAREST OPPOSITE PANEL POINT.

7. BRIDGING SHALL BE PROVIDED AS SHOWN ON DRAWINGS AND AS PER MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL COORDINATE EXACT LOCATION AS REQUIRED.

8. METAL DECK SHALL CONFORM TO THE LATEST EDITIONS OF THE STEEL DECK INSTITUTE AND AISC STANDARDS.

9. ALL FULL PENETRATION WELDS SHALL BE ULTRASONICALLY OR RADIOGRAPHICALLY TESTED.

LIGHTGAUGE METAL:

1. ALL LIGHTGAUGE METAL STUDS AND ACCESSORIES SHALL BE DESIGNED IN ACCORDANCE WITH AMERICAN IRON AND STEEL INSTITUTE (AISI) "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", 1986 EDITION. INSTALLATION OF THESE MEMBERS SHALL COMPLY WITH ASTM C754.

2. SHOP DRAWINGS SHALL BE SUBMITTED AS REQUIRED BY THE SPECIFICATIONS.

3. ALL NON-LOAD BEARING WALLS SHALL BE ERECTED SO AS TO ALLOW FOR PROPER DEFLECTION OF STRUCTURE ABOVE. THE TOPS OF ALL SUCH WALLS SHALL BE HORIZONTALLY BRACED TO THE STRUCTURE ABOVE AT A MAXIMUM OF 8'-0" OC.

4. ALL BRIDGING, BRACING, AND MISC. ACCESSORIES SHALL BE SUPPLIED BY THE MANUFACTURER.

MASONRY:

1. ALL MORTAR SHALL CONFORM TO ASTM C270, TYPE "S". USE PORTLAND CEMENT, TYPE I/II.

2. ALL METAL REINFORCEMENT SHALL CONFORM TO ASTM A615 GRADE 60, WITH A MINIMUM YIELD STRENGTH OF 60,000 PSI, UNO, EXCEPT REINFORCEMENT TO BE WELDED SHALL CONFORM TO ASTM A706 GRADE 60.

3. CONTROL JOINTS IN MASONRY VENEER WALLS SHALL BE PROVIDED AT A MAXIMUM SPACING OF 15' OC THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATIONS WITH ARCHITECTURAL REQUIREMENTS.

4. BRICK VENEER SHALL BE TIED TO THE SUPPORTING WALLS WITH RIGID BRICK TIES @ 16" OC MAXIMUM SPACING HORIZONTAL AND VERTICAL. PROVIDE #9 WIRE CONTINUOUS IN MORTAR JOINT FASTENED TO BRICK TIES.

SITE PREPARATION NOTES:

1. SITE PREPARATION NOTES FOR THE PROJECT ARE BASED ON RECOMMENDATIONS CONTAINED IN A SOILS REPORT BY AMEC EARTH & ENVIRONMENTAL INC, DATED JUNE 16, 2003, ALONG WITH ANY ADDENDA THERETO, WHICH HAS BEEN PREPARED FOR THIS PROJECT. A REFERENCE COPY IS AVAILABLE UPON REQUEST FROM THE ARCHITECT. FOOTINGS AND FOUNDATIONS AS SHOWN ON DRAWINGS MAY VARY IF THE SUBSURFACE SOIL CONDITIONS VARY FROM THOSE FOUND IN THE SOILS REPORT.

2. REMOVE ALL SURFACE VEGETATION, TOPSOIL, OTHER DELETERIOUS MATERIALS, AND NON-ENGINEERED FILL FROM ALL AREAS, WHICH WILL ULTIMATELY BE STRUCTURALLY LOADED. THESE STRIPPED MATERIALS WILL BE UNSUITABLE FOR STRUCTURAL FILL AND SHOULD BE REMOVED FROM THE SITE OR USED FOR LANDSCAPING. ALL EXISTING FILLS MATERIALS SHALL BE REMOVED FROM AN AREA EXTENDING OUT AT LEAST THREE FEET FROM THE PERIMETER OF THE NEW STRUCTURES.

3. ALL SPREAD AND CONTINUOUS FOOTING SHALL BEAR ON A MINIMUM OF ONE AND ONE HALF FEET OF ENGINEERED COMPACTED GRANULAR FILL EXTENDING TO FIRM UNDISTURBED NATURAL SOIL.

4. THE 24" MINIMUM THICK MAT FOOTING SHALL BE ESTABLISHED NO LESS THAN THREE FEET BELOW-GRADE, AND SHALL BE UNDERLAIN BY A MINIMUM OF FOUR FEET OF ENGINEERED COMPACTED FILL EXTENDING TO FIRM UNDISTURBED NATURAL SOIL.

5. THE SUBGRADE SHALL BE PROOF ROLLED ALL UNSUITABLE SOILS, FILL, AND SOFT SPOTS SHALL BE REMOVED AND REPLACED WITH PROPERLY COMPACTED ENGINEERED FILL.

6. STRUCTURAL FILL TO STABILIZED SOFT SUBGRADE SHALL BE A MIXTURE OF CLEAN COARSE GRAVELS AND COBBLES. MATERIAL SHALL HAVE GRADATION SIZES RANGING FROM ONE AND ONE-HALF TO SIX INCHES. OVERLYING COARSE GRAVELS AND COBBLES, CLEAN GAP-GRADED ONE TO ONE AND ONE-HALF-INCH CLEAN GAP-GRADED ANGULAR GRAVEL SHALL BE PLACES. STABILIZATION LAYER SHALL BE PLACED IN 12" MAXIMUM LIFTS AND COMPACTED.

7. ENGINEERED STRUCTURAL FILL SHALL BE PLACED UPON UNDISTURBED NATURAL SOULS OR PROPERLY STABILIZED SUBGRADE.

8. ENGINEERED STRUCTURAL FILL SHALL CONSIST OF FREE-DRAINING" OPEN GRADED GRAVELS PLACED IN 8" LIFTS AND COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY ACCORDING TO ASTM D-1557.

9. SLABS ON GRADE SHALL BE UNDERLAIN BY A MINIMUM OF SIX INCHES OF FREE-DRAINING GRAVEL (LESS THEN 5% PASSING THE NO. 200 SIEVE AND A MAXIMUM PARTICLE SIZE OF TWO INCHES) PLACED ON PROPERLY PREPARED SUBGRADE.

10. THE ABOVE OPERATIONS SHALL BE OBSERVED AND TESTED BY THE OWNER?S TESTING LABORATORY TO INSURE THAT THE ABOVE RECOMMENDATIONS ARE ACHIEVED.

11. SEE SPECIFICATIONS AND SOILS REPORT FOR OTHER SITE-SPECIFIC REQUIREMENTS.

BASIS OF DESIGN:

GOVERNING BUILDING CODE........................IBC 2000

SEISMIC DESIGN:
Sds..1.165
I..1.0
R...5
SEISMIC USE GROUP......................................I
SEISMIC DESIGN CATAGORY...........................E

WIND DESIGN:
BASIC WIND SPEED.....................................90 MPH
EXPOSURE..B
I..1.0

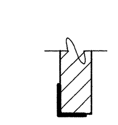
SNOW LOAD...30 PSF
SUSPENDED FLOOR LIVE LOAD............100 PSF
250 PSF MECHANICAL / STORAGE

STEEL AND REBAR ALLOWANCE:

CONTRACTOR SHALL INCLUDE IN HIS BID ALLOWANCES OF 6 TONS OF STRUCTURAL STEEL AND 2 TONS OF REINFORCING BARS, FABRICATED AND INSTALLED. UNUSED PORTIONS OF THESE ALLOWANCES SHALL BE CREDITED BACK TO THE OWNER AT THE COMPLETION OF THE PROJECT AT THE RATE OF $1 PER POUND FOR STRUCTURAL STEEL AND $.70 PER POUND FOR REINFORCING BARS. NONE OF THESE ALLOWANCES SHALL BE USED WITHOUT WRITTEN PERMISSION OF THE ARCHITECT / STRUCTURAL ENGINEER.

A1 STRUCTURAL GENERAL NOTES
SCALE: NONE
SE001–A1.dwg

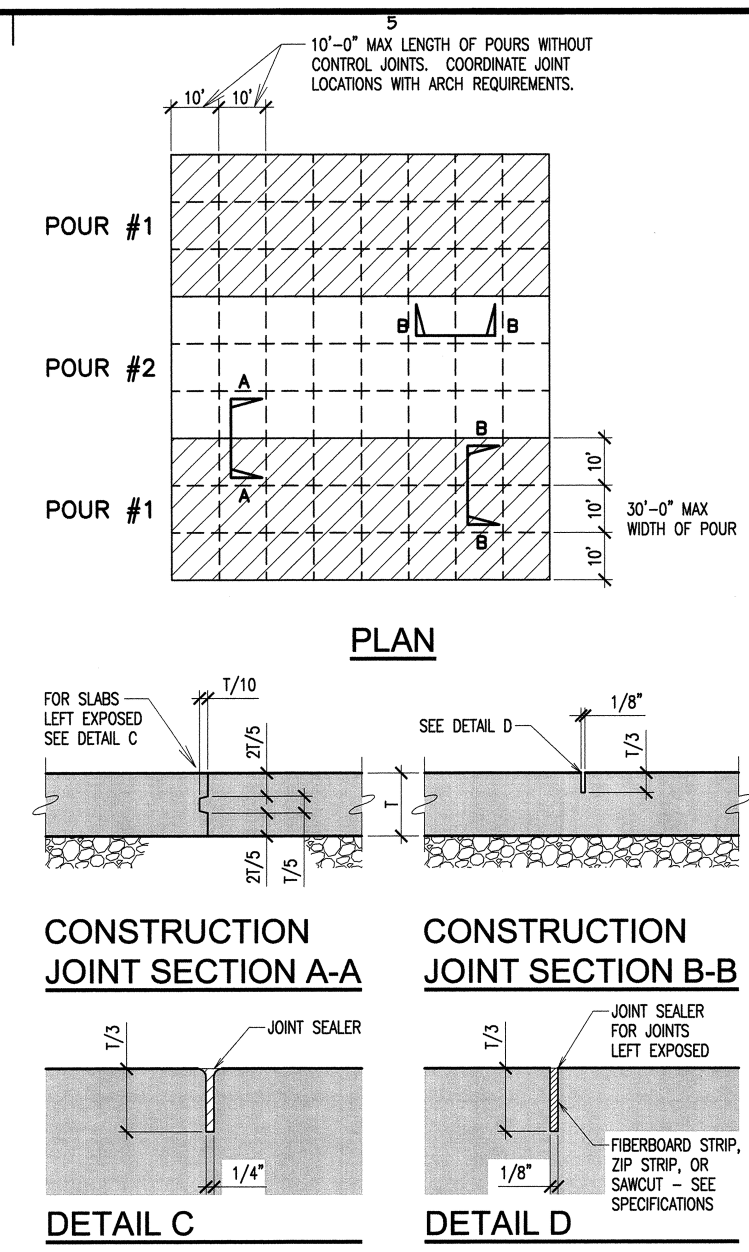
STEEL ANGLE LINTEL SCHEDULE



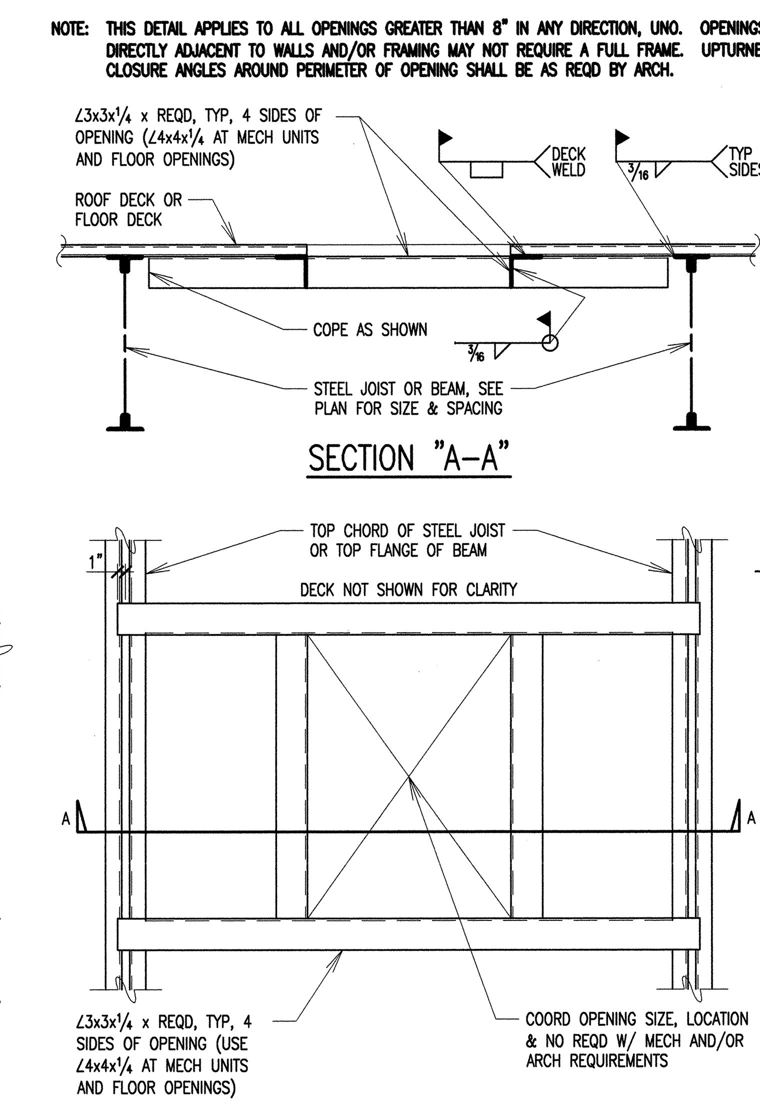
CLEAR OPENING	ANGLE SIZE
Up to 5'-0"	∠3 1/2x3 1/2x1/4
5'-0" to 7'-0"	∠3 1/2x3 1/2x5/16
7'-0" to 9'-0"	∠4x3 1/2x5/16
9'-0" to 10'-0"	∠5x3 1/2x5/16
10'-0" to 12'-0"	∠6x4x3/8
Greater than 12'-0"	SEE STRUCTURAL ENGINEER

NOTES
1. BEARING = 1" PER FOOT OF SPAN, (6" MIN.)
2. USE LINTELS AS SHOWN, U.N.O. ON PLAN.

A3 STEEL LINTEL ANGLE SCHEDULE
SCALE: NONE
SE001–A3.dwg



D5 SLAB POURING SEQUENCE AND TYP. CONST. JOINTS
SCALE: NONE
SE001–D5.dwg

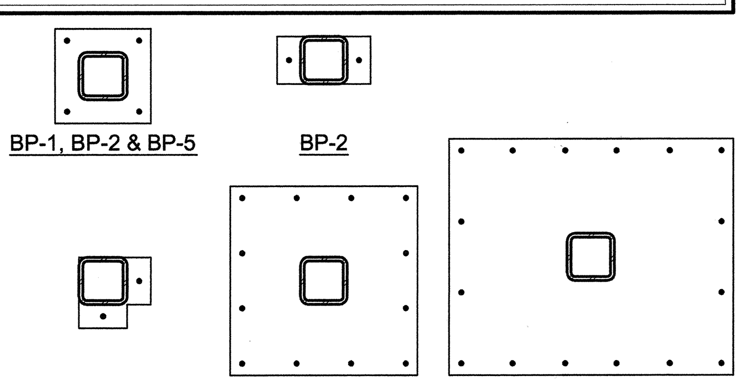


D6 TYP. ROOF OPENING DETAIL
SCALE: NO SCALE
SE001–D6.dwg

BASE PLATE SCHEDULE

MARK	THICK	WIDTH	LENGTH	ANCHOR BOLTS No.	ANCHOR BOLTS DIA.	ANCHOR BOLTS EMBED.
BP–1	3/4"	12"	12"	4	3/4"	8"
BP–2	2"	7"	14"	2	3/4"	8"
BP–3	3/4"	6"	9"	2	3/4"	8"
BP–4	1 3/8"	14"	14"	4	3/4"	8"
BP–5	3/4"	20"	20"	4	1"	10"
BP–6	1"	12"	12"	3	3/4"	8"
BP–7	1"	14"	18"	4	3/4"	8"
BP–8*	1 1/2"	24"	24"	12	1 1/4"	16"
BP–9*	1 3/4"	30"	36"	16	1 1/4"	20"

NOTES
1. ALL BASE PLATES SHALL BEAR ON 3/4" ± NON–SHRINK GROUT, TYP, UNO.
2. ALL ANCHOR BOLTS SHALL BE SET WITH A TEMPLATE.
3. ALL ANCHOR BOLTS SHALL HAVE LEVELING NUTS.
4. ALL ANCHOR BOLTS SHALL HAVE A STANDARD 90 DEGREE HOOK, TYP, UNO.
* 1 1/2" ± NON–SHRINK GROUT AND ANCHOR BOLT W/ ℘ 3 1/2"x1"x0'–3 1/2" WELDED TO ANCHOR BOLT.



C5 BASE PLATE SCHEDULE
SCALE: NONE
SE001–C5.dwg

FOOTING SCHEDULE

MARK	WIDTH	LENGTH	THICK	CROSSWISE No.	CROSSWISE SIZE	CROSSWISE LENGTH	CROSSWISE SPACING	LENGTHWISE No.	LENGTHWISE SIZE	LENGTHWISE LENGTH	LENGTHWISE SPACING
FC2.0	2'–0"	CONT	12"	–	–	–	–	3	#4	CONT	9"
FC2.5	2'–6"	CONT	12"	–	#4	2'–0"	18"	4	#4	CONT	8"
FC3.0	3'–0"	CONT	12"	–	#4	2'–6"	16"	4	#4	CONT	10"
FC3.5	3'–6"	CONT	12"	–	#5	3'–0"	16"	4	#5	CONT	12"
FC4.0	4'–0"	CONT	12"	–	#5	3'–6"	12"	5	#4	CONT	10.5"
FS2.0	2'–0"	2'–0"	12"	3	#4	1'–6"	9"	3	#4	1'–6"	9"
FS2.5	2'–6"	2'–6"	12"	4	#4	2'–0"	8"	4	#4	2'–0"	8"
FS3.0	3'–0"	3'–0"	12"	4	#4	2'–6"	10"	4	#4	2'–6"	10"
FS3.5	3'–6"	3'–6"	12"	4	#5	3'–0"	12"	4	#5	3'–0"	12"
FS4.0	4'–0"	4'–0"	12"	5	#4	3'–6"	10.5"	5	#4	3'–6"	10.5"
FS4.5	4'–6"	4'–6"	12"	6	#4	4'–0"	9.6"	6	#4	4'–0"	9.6"
FS5.0	5'–0"	5'–0"	12"	7	#4	4'–6"	9"	7	#4	4'–6"	9"
FS5.5	5'–6"	5'–6"	13"	6	#5	5'–0"	12"	6	#5	5'–0"	12"
FS6.0	6'–0"	6'–0"	14"	7	#5	5'–6"	11"	7	#5	5'–6"	11"
FS6.5	6'–6"	6'–6"	16"	6	#6	6'–0"	14.4"	6	#6	6'–0"	14.4"
FS7.0	7'–0"	7'–0"	17"	6	#6	6'–6"	15.6"	6	#6	6'–6"	15.6"
FS7.5	7'–6"	7'–6"	18"	7	#6	7'–0"	14"	7	#6	7'–0"	14"
FS8.0	8'–0"	8'–0"	19"	6	#7	7'–6"	18"	6	#7	7'–6"	18"
FS8.5	8'–6"	8'–6"	20"	7	#7	8'–0"	16"	7	#7	8'–0"	16"
FR6.0/18.0	6'–0"	18'–0"	28"	16	#8	5'–6"	14"	6	#8	17'–6"	13.25"±
FR8.0/13.0	8'–0"	13'–0"	28"	11	#8	7'–6"	15"	8	#8	12'–6"	12.75"±
FR8.0/22.0	8'–0"	22'–0"	28"	20	#8	7'–6"	13.50"±	8	#8	21'–6"	12.75"±
FR8.0/30.0	8'–0"	30'–0"	28"	26	#8	7'–6"	14.25"±	8	#8	29'–6"	12.75"±
FR10.0/20.0	10'–0"	20'–0"	28"	18	#8	9'–6"	13.75"±	9	#8	19'–6"	14.50"±
FR10.0/36.0	10'–0"	36'–0"	28"	31	#8	9'–6"	14.25"±	9	#8	35'–6"	14.50"±
FR12.0/26.0	12'–0"	26'–0"	28"	23	#8	11'–6"	14"±	11	#8	25'–6"	13.75"±
FR13.5/45.0	13'–6"	45'–0"	36"	41	#8	13'–0"	13.25"±	14	#8	44'–6"	12"±
FR14.0/26.0	14'–0"	26'–0"	28"	23	#8	13'–6"	14"±	13	#8	25'–6"	13.50"±
FR14.0/36.0	14'–0"	36'–0"	28"	31	#8	13'–6"	14.25"±	15	#8	35'–6"	11.50"±

NOTES
1. SOIL BEARING PRESSURE = 2,500 PSF, SEE SOILS REPORT BY AMEC EARTH ENVIRONMENTAL, INC. DATED JUNE 16, 2003.
2. ALL FOOTINGS SHALL BE CENTERED BELOW COLS AND/OR WALLS ABOVE, TYP, UNO.
3. ALL EXCAVATIONS NEAR OR BELOW IN–PLACE FTGS (NEW OR EXIST) SHALL BE FILLED WITH LEAN–MIX CONCRETE AS DIRECTED BY ARCH.
4. SEE SHEET **SE001** FOR SITE PREPARATION NOTES.
5. SEE DETAIL **A6/SE001** FOR TYP STEP FOOTING AS INDICATED ON PLAN BY S---S.

A5 FOOTING SCHEDULE
SCALE: NONE
SE001–A5.dwg

COOPER ROBERTS SIMONSEN ARCHITECTURE
crsa
700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM BENNION
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

STATE ARCHIVES BUILDING
300 SOUTH 500 WEST
SALT LAKE CITY UTAH

STATE OF UTAH DIVISION OF FACILITIES AND CONSTRUCTION
4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

BID PACKAGE #2

CD 10/01/2003 -
DD 09/24/2003 -

PROJECT NO: PROJECTNO
CAD DWG FILE: SE001.dwg
DRAWN BY: TKS
CHECKED BY: JEO

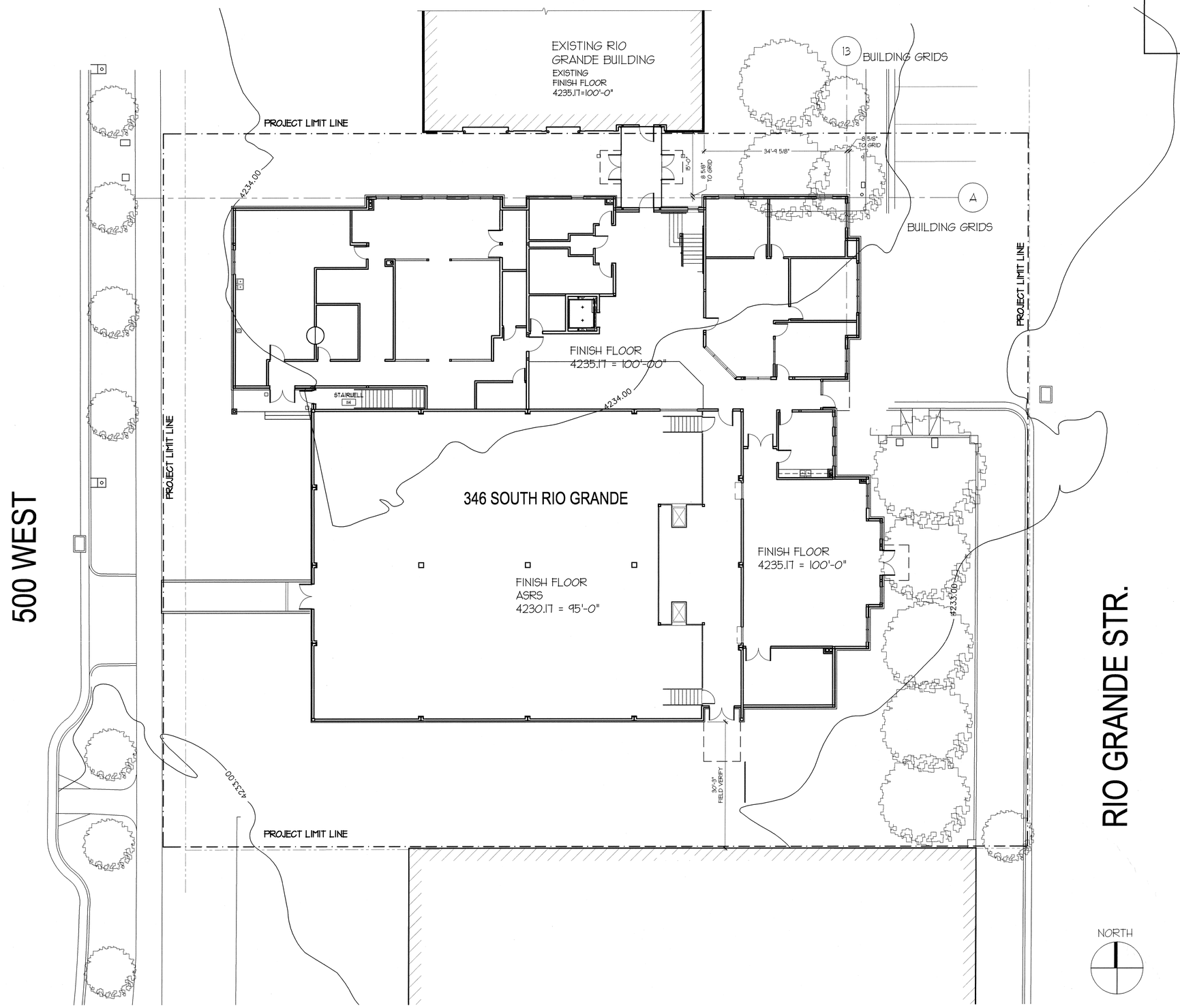
STRUCTURAL GENERAL NOTES & DETAILS

SE001

SHEET # OF 1

GENERAL NOTES

A. THE CONCRETE RAMP DOWN TO ASRS SPACE AND RUNNING THE UTILITIES INTO THE BUILDING WILL BE THE ONLY SITE WORK IN THIS BID PACKAGE. SITE PLAN IS FOR REFERENCE. ALL SITE WORK, FINAL GRADING, AND LANDSCAPING WILL BE SHOWN IN BID PACKAGE #3



A1 SITE PLAN
1" = 10'-0"

COOPER ROBERTS SIMONSEN ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@ces-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
SALT LAKE CITY UTAH

STATE OF UTAH DIVISION OF FACILITIES AND CONSTRUCTION

4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

BID PACKAGE #2

CD	OCTOBER 1 2003	BID PACKAGE #2
DD	-	-

PROJECT NO: B03-039 ARCHIVES
CAD DWG FILE: P:\B03-039\ARCHIVE/AS101.DWG
DRAWN BY:
CHECKED BY: -

SITE PLAN

AS101

#

FIRST FLOOR SQUARE FOOTAGE FOP MIXED OCCUPANCY

ARCHIVES	RIO GRANDE
B = 9,116 S.F.	B = 12,554
S2 = 7,774	A3 = 19,454

SEPARATED USES = ACTUAL / ALLOWABLE

$$= \underset{B}{\frac{9{,}116 + 12554}{71{,}250}} + \underset{A}{\frac{19{,}454}{35{,}625}} + \underset{S2}{\frac{7{,}774}{97{,}500}}$$

= .30 + .54 + .08

= .92 < 1 OK

SECOND FLOOR SQUARE FOOTAGE FOP MIXED OCCUPANCY

ARCHIVES	RIO GRANDE
B = 6,705 S.F.	B = 24,748
S2 = 1,045 S.F.	

SEPARATED USES = ACTUAL / ALLOWABLE

$$= \underset{B}{\frac{6{,}705 + 24{,}748}{71{,}250}} + \underset{S2}{\frac{1{,}002}{97{,}500}}$$

= .44 + .01

= .45 < 1 OK

BUILDING GROUP = B = 19,000
A_a = 71,250 FOR EACH FLOOR

$$A_a = 19{,}000 + \frac{19{,}000\ (200)}{100} + \frac{19{,}000\ (75)}{100}$$
$$A_a = 19{,}000 + 38{,}000 + 14{,}250$$
A_a = 71,250 FOR EACH FLOOR

BUILDING GROUP A3 = 9,500
A_a = 35,625 FOR EACH FLOOR

$$A_a = 9{,}500 + \frac{9500\ (200)}{100} + \frac{9{,}500\ (75)}{100}$$
$$A_a = 9{,}500 + 19{,}000 + 7{,}150$$
A_a = 35,625 FOR EACH FLOOR

BUILDING GROUP S2 = 26,000
A_a = 97,500 FOR EACH FLOOR

$$A_a = 26{,}000 + \frac{26{,}000\ (200)}{100} + \frac{26{,}000\ (75)}{100}$$
$$A_a = 26{,}000 + 52{,}000 + 19{,}500$$
A_a = 97,500 FOR EACH FLOOR

AREA DETERMINATION ALLOWABLE SQUARE FOOTAGE FOR RIO GRANDE AND ARCHIVES

ACTUAL S.F.	ARCHIVES	RIO GRANDE
1ST FLOOR S.F. =	16,890	32,008
2ND FLOOR S.F. =	7,750	24,748

TOTAL S.F. FOR ARCHIVES AND RIO GRANDE = 81,396

ALLOWABLE S.F. =
B = 71,250 X 2 = 142,500 S.F.
A = 35,625 X 2 = 71,250 S.F.
S2 = 97,550 X 2 = 195,100 S.F.
TOTAL ALLOWABLE = 408,850 S.F.

ACTUAL S.F. = 81,396 < 408,850 OK

2000 INTERNATIONAL BUILDING CODE (IBC) INFORMATION

CODE ITEM REFERENCE	CODE REQUIREMENT	ACTUAL BUILDING DESIGN
USE & OCCUPANCY SEC. 303.1	THE BUILDING IS TO BE A MIXED OCCUPANCY SEPARATED USE. (IBC 302.3.2) THE BUILDING CONTAINS THREE OCCUPIES (B, A-3, AND S-2). FIRE SEPARATIONS WILL BE REQUIRED BETWEEN USES.	A-3 TYPE III-B
ALLOWABLE FLOOR AREA - TABLE 503 ALLOWABLE HEIGHT AND BUILDING AREAS	$A_a = A_t + \left[\frac{A_t I_f}{100}\right] + \left[\frac{A_t I_s}{100}\right]$ At=9,500 S.F. $I_f = 100\left[\frac{F}{P} - 0.25\right]\frac{W}{30}$ $F = 570$ (Bldg. perimeter 542 – non-open space 103) $P = 590$ (Perimeter of entire building) $W = 30$ $I_f = 100\left[\frac{590}{590} - 0.25\right]\frac{30}{30}$ $I_f = 100\left[.75\right]\frac{30}{30}$ $I_f = 75$ BUILDING IS EQUIPPED WITH A FIRE SPRINKLER SYSTEM $I_S = 200$ ALLOWABLE HEIGHT PER TABLE 503 - 2 STORIES	
AREA DETERMINATION 503.3	AREA OF DETERMINATION (Ad) = 408,850 (SEE CALCULATIONS TO THE LEFT)	TOTAL SQUARE FEET FOR ENTIRE BUILDING = 81,396 S.F.
TYPE OF CONSTRUCTION, 602.3 FIRE RESISTANCE RATING TABLE 601	TABLE 601 - TYPE IIIB	STRUCTURAL FRAME, NO FIRE RESISTANCE RATING REQUIRED BEARING WALLS, EXTERIOR - BRICK CONTRUCTION 2 HR FIRE RESISTANCE RATING BEARING WALL, INTERIOR - NO FIRE RESISTANCE RATING REQUIRED NON-BEARING WALLS AND PARTITIONS, EXTERIOR - NO FIRE RESISTANCE RATING REQUIRED, FIRE SEPARATION DISTANCE = 30' PLUS NON-BEARING WALLS AND PARTITIONS, INTERIOR - ANY MATERIAL PERMITTED BY CODE FLOOR CONSTRUCTION - BETWEEN BASEMENT AND FIRST FLOOR LEVEL - NO FIRE RESISTANCE RATING REQUIRED ROOF CONSTRUCTION - NO FIRE RESISTANCE RATING REQUIRED
PLUMBING FIXTURES	SECTION 2902.1 - MINIMUM FIXTURES SHALL BE PROVIDED FOR THE TYPE OF OCCUPANCY SHOWN IN TABLE 2902.1. SECTION 2902.3 - NUMBER OF OCCUPANTS OF EACH SEX - THE REQUIRED WATER CLOSETS, LAVATORIES, SHOWERS OR BATHTUBS SHALL BE DISTRIBUTED EQUALLY AND BE COMPOSED OF 50% OF EACH SEX. FIRST FLOOR - B OCCUPANCY, 144 OCCUPANTS, 144 x 50% = 72 WATER CLOSETS REQ'D 1 PER 50, 72/50 = 1.44, 2 WATER CLOSETS REQ'D, LAVATORIES REQ'D 1 PER 80, 72/80 = .9, 1 LAVATORY REQUIRED SECOND FLOOR - B OCCUPANCY, 76 OCCUPANTS, 76 x 50% = 38 WATER CLOSETS REQ'D 1 PER 50, 38/50 = .76, 1 WATER CLOSET REQ'D, LAVATORIES REQ'D 1 PER 80, 38/80 = .48, 1 LAVATORY REQUIRED	1ST FLOOR LEVEL MEN'S RESTROOM - 1 WATER CLOSET, 1 URINAL, 2 LAVATORIES WOMEN'S RESTROOM - 2 WATER CLOSETS, 2 LAVATORIES 0 DRINKING FOUNTAINS, 1 SERVICE SINK LOCATED IN JANITORIAL 2ND FLOOR LEVEL MEN'S RESTROOM - 1 WATER CLOSET, 1 URINAL, 1 LAVATORY WOMEN'S RESTROOM - 2 WATER CLOSETS, 1 LAVATORY 0 DRINKING FOUNTAINS, 1 SERVICE SINK LOCATED IN JANITORIAL
VERTICAL EXIT ENCLOSURES (IBC 706.3.1 & 1005.3.2)	1-HOUR CONSTRUCTION (INTERIOR STAIRS)	THE ENCLOSURE AROUND THE EGRESS STAIRS WILL HAVE A 1-HOUR RATING.
STORAGE ROOMS OVER 100 S.F. (IBC 302.1.1)	1-HOUR SEPARATION	STORAGE AREA WILL HAVE A BY 1-HOUR SEPARATION FROM REST OF BUILDING.
SHAFT ENCLOSURES (IBC 707.5)	SHAFT ENCLOSURE INCLUDING EXIT ENCLOSURES SHALL HAVE A FIRE-RESISTANCE RATING OF 1-HOUR WHEN CONNECTING LESS THAN FOUR STORIES.	ELEVATOR, ELECTRICAL CHASES, AND OTHER SHAFTS WILL COMPLY WITH A 1-HOUR RATING.

CODE INFORMATION GENERAL NOTES

1. ALL OPENINGS IN A 1 HR FIRE BARRIER WALL SHALL HAVE A 30 MINUTE PROTECTION. SEE DOOR SCHEDULE FOR FIRE RATING OF DOORS AND WINDOWS.

2. ALL PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES (I.E. FLOORS, WALLS, AND ROOFS) TO BE FIRE-PROOFED AS REQUIRED TO MATCH FIRE-RATED OF ASSEMBLY.

CODE PLAN LEGEND

PATTERN / SYMBOL	DESCRIPTION
– – – – – – –	2-HOUR FIRE BARRIER WALL (SEE TABLE 302.3.3) FOR PENETRATIONS THROUGH WALL SEE C1/GI003. FOR ALL PENETRATIONS THROUGH A 2-HOUR FIRE ASSEMBLY RATING IS REQUIRED.

OCCUPANT LOAD CALCULATIONS

SQUARE FEET OF AREA — AREA ALLOWANCE PER OCCUPANT FORM TABLE (1003.2.2.2)

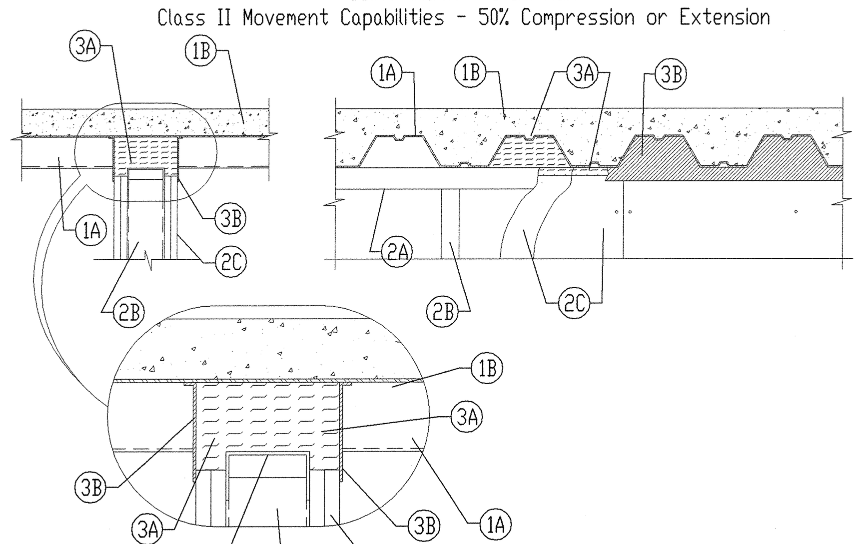
SF= S.F./ A.A.P.O.
O.L. = #

OCCUPANT LOAD FOR THIS AREA

1. **Floor Assembly** The fire-rated fluted steel deck/concrete floor assembly shall be constructed of the materials and in the manner described in the individual Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. **Steel Floor And Form Units*** Max 3 in. deep galv steel fluted units.
   B. **Concrete** Min 2-1/2 in. thick reinforced concrete, as measured from the top plane of the floor units.
   C. **Spray-Applied Fire Resistive Materials*** (Optional)--(Not Shown)--Prior to the installation of the steel ceiling runners, Forming Material and Fill, Void or Cavity Material (Items 2A, 3A, 3B) the steel floor units may be sprayed with a min 5/16 in. to max 1-3/4 in. thickness of fire resistive material.
   W R GRACE & CO - CONN
   CONSTRUCTION PRODUCTS DIV - Type MK-6-HY
2. **Wall Assembly** The 1 or 2 hr fire rated gypsum board/steel stud wall assembly shall be constructed of the materials and in the manner described in the individual U400-Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. **Steel Floor And Ceiling Runners** Floor and ceiling runners of wall assembly shall consist of min 25 ga galv steel channels sized to accommodate steel studs (Item 2B). Ceiling runner to be provided with 2 in. flanges. Ceiling runner secured to valleys of steel floor units (Item 1A) through fire resistive material with steel fasteners or welds spaced max 12 in. OC. When optional spray applied material is used on the steel floor units, steel ceiling runner shall be secured through the spray applied material to each valley of floor unit with min 3/16 in. diam steel masonry anchors.
   A1. **Light Gauge Framing*-Slotted Ceiling Runner** As an alternate to the ceiling runner in Item 2A, slotted ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2B). Slotted ceiling runner installed perpendicular to direction of fluted steel floor units and secured to valleys with steel fasteners spaced max 24 in. OC.
   SLIPTRACK SYSTEMS INC -- --SLP-TRK
   A2 . **Light Gauge Framing*-Vertical Deflection Ceiling Runner** As an alternate to the ceiling runners in Items 2A and 2A1, vertical deflection ceiling runner to consist of galv steel channel with slotted vertical deflection clips mechanically fastened within runner. Slotted clips, provided with step bushings, for permanent fastening of steel studs. Flanges sized to accommodate steel studs (Item 2B). Vertical deflection ceiling runner installed perpendicular to direction of fluted steel floor units and secured to valleys with steel fasteners spaced max 24 in. OC .
   THE STEEL NETWORK INC -- VertiTrack VTD250, VTD358, VTD400, VTD600 and VTD800
   B. **Studs** Steel studs to be min 2-1/2 in. wide. Studs cut 1/2 to 3/4 in. less in length than assembly height with bottom nesting in and resting on floor runner and with top nesting in ceiling runner without attachment. When slotted ceiling runner (Item 2A1) is used, steel studs secured to slotted ceiling runner with No. 8 by 1/2 in. long wafer head steel screws at midheight of slot on each side of wall. Stud spacing not to exceed 24 in. OC. When vertical deflection ceiling runner (Item 2A2) is used, steel studs secured to slotted vertical deflection clips, through the bushings, with steel screws at midheight of each slot. Stud spacing not to exceed 24 in. OC .
   C. **Gypsum Board*** Gypsumboard installed to a min total thickness of 5/8 in. and 1-1/4 in. on each side of wall for 1 and 2 hr rated assemblies, respectively. Wall to be constructed as specified in the individual Wall and Partition Design in the UL Fire Resistance Directory, except that a max 1 in. gap shall be maintained between the top of the gypsumboard and the bottom of the steel floor units and the top row of screws shall be installed into the studs 3-1/2 to 4 in. below the lower surface of the floor.
3. **Joint System** Max separation between bottom of floor and top of wall at time of installation of joint system is 1 in. The joint system is designed to accommodate a max 50 percent compression or extension from its installed width. The joint system consists of forming material and a fill material, as follows:
   A. **Forming Material*** Min 8 pcf density mineral wool batt insulation cut approx 25 percent wider than the flutes and with a length approx equal to the overall thickness of the wall. Multiple pieces stacked on top of each other, as needed, and then compressed 50 percent in thickness and inserted into the flutes of the steel floor units above the top of the ceiling runner. The mineral wool batt insulation is to project beyond each side of the ceiling runner, flush with wall surfaces. Nom 5/8 in. and 1-1/4 in. wide strips for 1 and 2 hr rated assemblies, repectively, of min 8 pcf mineral wool batt insulation are to be cut to fill the gap between the top of the gypsumboard and bottom of the steel floor units. The strips of mineral wool are compressed 50 percent and tightly packed, cut edge first, into the gap between the top of the gypsumboard and bottom of the steel floor units on both sides of the wall.
   ROCK WOOL MANUFACTURING CO -- Delta-8A
   B. **Fill, Void or Cavity Material*** Min 1/8 in. wet thickness of fill material sprayed or troweled on each side of the wall to completely cover mineral wool forming material and to overlap a min of 1/2 in. onto gypsumboard and steel deck on both sides of wall. When Spray-Applied Fire Resistive Material* is applied to the Steel Floor and Form Units*, the fill material is to overlap the gypsumboard a min of 1/2 in. and the Spray-Applied Fire Resistive Material a min of 2 in. on both sides of wall. When spray-applied fire resistive materials are used, the CP 672 firestop spray shall overlap the wall a min 1/2 in. and overlap the spray-applied fire resistive material a min of 2 in. on both sides of the wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF
   HILTI INC - CP 672 Firestop Spray

*Bearing the UL Classification Mark

System No. HW-D-0042
Assembly Ratings - 1 and 2 Hr (See Items 2 & 3A)
Joint Width - 1 In. Max
Class II Movement Capabilities - 50% Compression or Extension



System No. HW-D-0042
Assembly Ratings - 1 and 2 Hr (See Items 2 & 3A)
Joint Width - 1 In. Max
Class II Movement Capabilities - 50% Compression or Extension

HILTI FIRESTOP SYSTEMS

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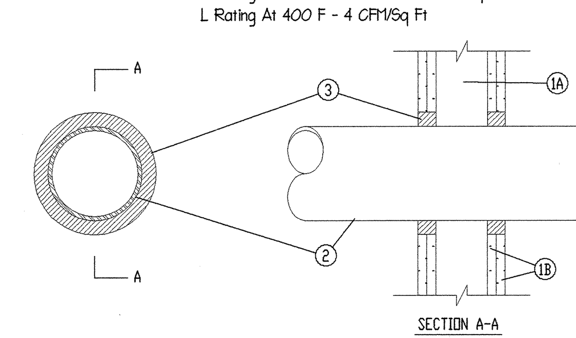
Page: 1 of 2 HWD 0042

A1 TOP OF WALL SLIP JOINT
NO SCALE

GI003-A1-24

System No. W-L-1054
F Ratings - 1 and 2 Hr (See Items 1 and 3)
T Rating - 0 Hr
L Rating At Ambient - Less Than 1 CFM/Sq Ft
L Rating At 400 F - 4 CFM/Sq Ft



SECTION A-A

1. WALL ASSEMBLY The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. wider and 4 to 6 in. higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. clearance is present between the penetrating item and the framing on all four sides.
   B. Gypsum Board* 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. for steel stud walls. Max diam of opening is 14-1/2 in. for wood stud walls. The F Rating of the firestop system is equal to the fire rating of the wall assembly.
2. Through-Penetrants One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. Pipe may be installed with continuous point contact. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
   A. Steel Pipe Nom 30 in diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe Nom 30 in. diam (or smaller) cast or ductile iron pipe.
   C. Conduit Nom 4 in diam (or smaller) steel electrical metallic tubing or 6 in. diam steel conduit.
   D. Copper Tubing Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
   E. Copper Pipe Nom 6 in. diam (or smaller) regular (or heavier) copper pipe.
3. Fill, Void or Cavity Material* -- Sealant Min 5/8 in. thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF
   HILTI INC -- FS-One Sealant

*Bearing the UL Classification Mark

HILTI FIRESTOP SYSTEMS

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A3 METAL PIPE PENETRATION DETAIL
NO SCALE

GI003-A3-24

COOPER ROBERTS SIMONSEN ARCHITECTURE
crsa
700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

STATE ARCHIVES BUILDING

300 SOUTH 500 WEST
SALT LAKE CITY UTAH

STATE OF UTAH DIVISION OF FACILITIES AND CONSTRUCTION

4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

BID PACKAGE #2

CD	OCTOBER 1 2003	BID PACKAGE #2
DD	-	-

PROJECT NO: B03-039 ARCHIVES
CAD DWG FILE: P:\PROJECTS\B02-066-1\GI003.DWG
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BUILDING ANALYSIS PLAN

GI003
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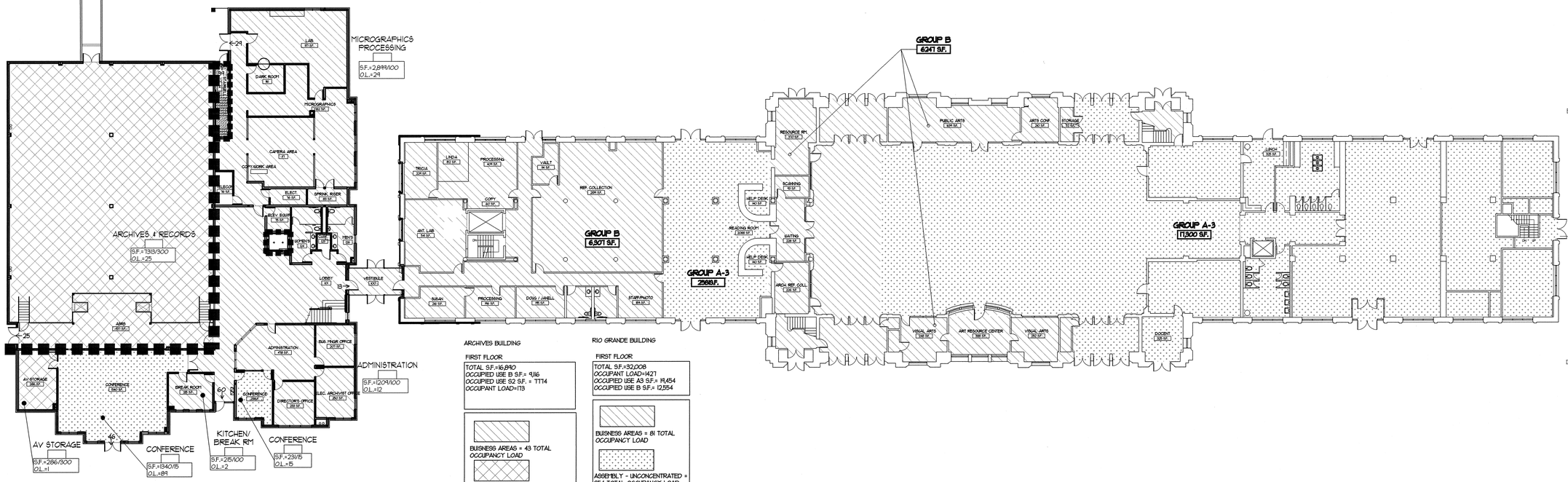


ARCHIVES BUILDING

FIRST FLOOR

TOTAL S.F.=16,840
OCCUPIED USE B S.F.= 9,116
OCCUPIED USE S2 S.F. = 7,714
OCCUPANT LOAD=113

BUISNESS AREAS = 43 TOTAL OCCUPANCY LOAD

ACCESSORY STORAGE AREAS = 26 TOTAL OCCUPANCY LOAD

ASSEMBLY - UNCONCENTRATED = 104 TOTAL OCCUPANCY LOAD

2 HOUR RATING

1 HOUR RATING

1 HOUR RATING AT CEILING

RIO GRANDE BUILDING

FIRST FLOOR

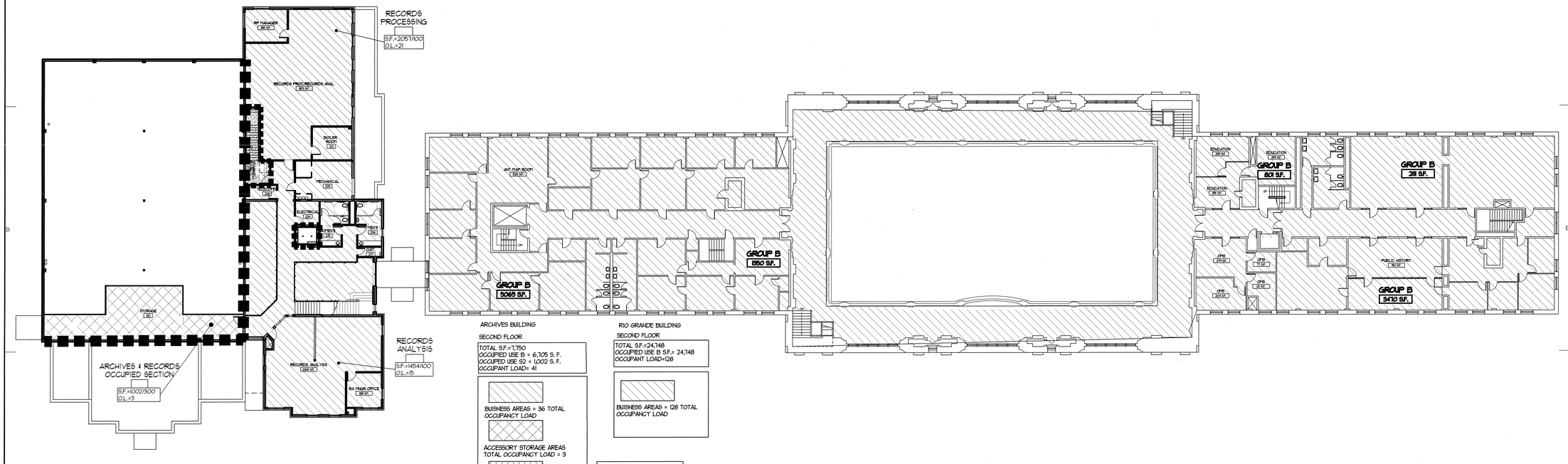
TOTAL S.F.=32,008
OCCUPANT LOAD=1427
OCCUPIED USE A3 S.F.= 19,454
OCCUPIED USE B S.F.= 12,554

BUISNESS AREAS = 81 TOTAL OCCUPANCY LOAD

ASSEMBLY - UNCONCENTRATED = 854 TOTAL OCCUPANCY LOAD

A1 OCCUPANCY PLAN - 1ST FLOOR

1/16" = 1'-0"



ARCHIVES BUILDING

SECOND FLOOR

TOTAL S.F.=7,150
OCCUPIED USE B = 6,105 S. F.
OCCUPIED USE S2 = 1,002 S. F.
OCCUPANT LOAD= 41

BUISNESS AREAS = 36 TOTAL OCCUPANCY LOAD

ACCESSORY STORAGE AREAS TOTAL OCCUPANCY LOAD = 3

ASSEMBLY - UNCONCENTRATED = 0 TOTAL OCCUPANCY LOAD

2 HOUR RATING

1 HOUR RATING

1 HOUR RATING AT CEILING

RIO GRANDE BUILDING

SECOND FLOOR

TOTAL S.F.=24,148
OCCUPIED USE B S.F.= 24,148
OCCUPANT LOAD=128

BUISNESS AREAS = 128 TOTAL OCCUPANCY LOAD

ALL PENETRATIONS THAT ARE REQUIRED TO BE 2 HOUR ASSEMBLY, SEE A3/G1003

ALL PENETRATIONS THAT ARE REQUIRED TO BE 1 HOUR ASSEMBLY, SEE A3/G1003

PLAN NORTH

A2 OCCUPANCY PLAN - 2ND FLOOR

1/16" = 1'-0"

COOPER ROBERTS SIMONSEN ARCHITECTURE

crsa

700 NORTH 200 WEST
SALT LAKE CITY,UTAH 84103
(801) 355-5915
(801) 355-9885 FAX
WWW.CRSARCHITECTS.COM

STRUCTURAL ENGINEER
ABSG CONSULTING, INC.
310 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT 84101
(801) 333-7676 FAX (801) 333-7677
jott@absconsulting.com

MECHANICAL ENGINEER
COLVIN ENGINEERING
244 WEST 300 NORTH
SALT LAKE CITY, UT 84103
(801) 322-2400 FAX (801) 322-2416
tcolvin@cea-ut.com

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
175 SOUTH MAIN, SUITE 300
SALT LAKE CITY, UT
(801) 401-8491 FAX (801) 401-9471
cbf@spectrum-engineers.com

CIVIL ENGINEER
STANTEC CONSULTING INC.
3995 SOUTH 700 EAST SUITE 300
SALT LAKE CITY, UT
(801) 261-0090 FAX (801) 266-1671
kengstrom@stantec.com

LANDSCAPE ARCHITECT
BRENT MORRIS ASSOCIATES
1047 EAST RAYMOND ROAD
FRUIT HEIGHTS, UT 84037
(801) 544-0064 FAX (801) 546-6669
bma@mailsnare.net

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4110 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

BID PACKAGE #2

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PROJECT NO: B03-039 ARCHIVES
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BUILDING ANALYSIS PLAN

GI002

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