



State of Utah

GARY R. HERBERT  
Governor

SPENCER J. COX  
Lieutenant Governor

Department of Administrative Services

KIMBERLY K. HOOD  
Executive Director

Division of Facilities Construction and Management

BRUCE WHITTINGTON  
Interim Director

## Addendum No. 2

Date: March 20, 2015

To: Short-Listed Contractors

From: Tim Parkinson – Project Manager

Reference: Mechanical/Electrical/Plumbing Upgrades – Miller Administration Building  
Weber State University – Ogden, Utah  
DFCM Project No. 14031810

Subject: **Addendum No. 2**

Pages	Addendum Cover Sheet	1 page
	Revised Cost Proposal Form	2 pages
	Architect's Addendum No. 2	108 pages
	Total	111 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.*

**2.1 SCHEDULE CHANGES:** There are no Project Schedule changes.

**2.2 GENERAL ITEMS:**

2.2.1 See attached Revised Cost Proposal Form incorporating two Additive Alternates.

2.2.2 See attached Architect's Addendum No. 2 dated March 19, 2015.



STATE OF UTAH - DEPARTMENT OF ADMINISTRATIVE SERVICES  
**Division of Facilities Construction and Management**

**DFCM**

**COST PROPOSAL FORM – REVISED**  
**PER ADDENDUM NO. 2 DATED MARCH 20, 2015**

NAME OF PROPOSER \_\_\_\_\_ DATE \_\_\_\_\_

To the Division of Facilities Construction and Management  
 Room 4110 State Office Building  
 Capitol Hill Complex  
 SLC, UT

The undersigned, responsive to the "Notice to Contractors" and in accordance with the "Request for Proposals" for the **MECHANICAL/ELECTRICAL/PLUMBING UPGRADES - MILLER ADMINISTRATION BUILDING WEBER STATE UNIVERSITY – OGDEN, UTAH - DFCM PROJECT NO. 14031810** and having examined the Contract Documents and the site of the proposed Work and being familiar with all of the conditions surrounding the construction of the proposed Project, including the availability of labor, hereby proposes to furnish all labor, materials and supplies as required for the Work in accordance with the Contract Documents as specified and within the time set forth and at the price stated below. This price is to cover all expenses incurred in performing the Work required under the Contract Documents of which this bid is a part:

I/We acknowledge receipt of the following Addenda: \_\_\_\_\_

**Base Bid:** For all work shown on the Drawings and described in the Specifications and Contract Documents, I/we agree to perform for the sum of:

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
 (In case of discrepancy, written amount shall govern)

**Additive Alternate No. 1:** For all work shown on the Drawings and described in the Specifications and Contract Documents for wood doors refinishing, I/we agree to perform for the sum of:

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
 (In case of discrepancy, written amount shall govern)

**Additive Alternate No. 2:** For all work shown on the Drawings and described in the Specifications and Contract Documents for new condenser water pumps, I/we agree to perform for the sum of:

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
 (In case of discrepancy, written amount shall govern)

I/We guarantee that the Work will be Substantially Complete by **August 14, 2015**, should I/we be the successful proposer, and agree to pay liquidated damages in the amount of **\$500.00** per day for each day after expiration of the Contract Time as stated in Article 3 of the Contractor's Agreement.

COST PROPOSAL FORM  
PAGE NO. 2

This bid shall be good for 45 days after bid opening.

Enclosed is a 5% bid bond, as required, in the sum of \_\_\_\_\_

The undersigned Contractor's License Number for Utah is \_\_\_\_\_.

Upon receipt of notice of award of this bid, the undersigned agrees to execute the contract within ten (10) days, unless a shorter time is specified in the Contract Documents, and deliver acceptable Performance and Payment bonds in the prescribed form in the amount of 100% of the Contract Sum for faithful performance of the contract. The Bid Bond attached, in the amount not less than five percent (5%) of the above bid sum, shall become the property of the Division of Facilities Construction and Management as liquidated damages for delay and additional expense caused thereby in the event that the contract is not executed and/or acceptable 100% Performance and Payment bonds are not delivered within the time set forth.

Type of Organization:

\_\_\_\_\_

(Corporation, Partnership, Individual, etc.)

Any request and information related to Utah Preference Laws:

\_\_\_\_\_

Respectfully submitted,

\_\_\_\_\_  
Name of Proposer

ADDRESS:  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Authorized Signature

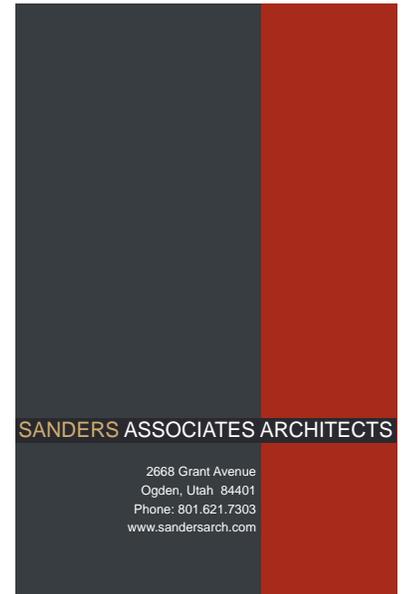
## ADDENDUM #2

Project: Weber State University  
Miller Administration M.E.P. Upgrades  
3848 Harrison Boulevard  
Ogden, Utah 84401

Architect: Sanders Associates Architects  
2668 Grant Ave. Suite 100  
Ogden, Utah 84401

Owner: UTAH STATE DFCM  
4110 State Office Building  
Salt Lake City, Utah 84114

Project Architect: M. Shane Sanders, AIA  
DFCM Project Number: 14031810  
Project Number: 214016  
Date: 03.19.2015



The following information is intended to amend, alter, expand or clarify the drawings and specifications issued for this project. All information in this Addendum shall be made part of the contractor's bid.

### A. LIST OF SUBMITTED QUESTIONS:

#### 1. LOW-VOLTAGE LIGHTING CONTROL CABLE CLARIFICATION:

QUESTION: *"Low Voltage Lighting Control Cable LMRJ Series Cat 5E as shown on details on EE-004, is the design intent to install this cable all in conduit or open wire above ceiling and conduit stubbed up and out of walls? Please advise."*

ANSWER: Add Special Note #2 on drawing EE201 as follows:

"Low voltage plenum cable can be used in ceiling plenum for lighting control. Utilize existing conduit and boxes in the wall to run the cables. Support the cable every 5 feet with j-hooks. Do not lay the cables on the ceiling or use ceiling grid supports to tie the cables."

#### 2. CURTAINWALL U-FACTOR CLARIFICATION:

QUESTION: *"The NFRC testing from Kawneer was preformed in 2002, with the results of a U-factor or .54. With todays energy codes it doesn't meet the new standard."*

ANSWER: The Kawneer NFRC Testing was done in 2002 with a glazing panel that resulted in a 0.54 U-Factor for the system. The glazing specified for this project has a U-factor of 0.28. Using the chart in Kawneer's catalog Thermal Performance Matrix (NFRC size) for captured mullions of the 2250 LR Wall system, the system U-Factor is estimated at 0.39. **(Refer to the attached cut sheet from Kawneer's Product Catalog, Attachment "A2-1").**

#### 3. CONDUIT CABLE DEMOLITION CLARIFICATION:

QUESTION: *"Keyed Note D6 on ED301, ED302, ED303 indicates "Remove existing voice/data jacks, associated cables, conduit all the way back to new origination points. Utilize existing boxes and conduit for new devices as possible. All cables will be new." "Does the text "conduit all the way back to new original points" mean the only the conduit being removed is located above the walls and the existing conduit in the walls are to remain for reuse? And "Utilize existing boxes and conduit for new devices as possible," for the conduit and devices in the walls?"*

ANSWER: Add Special Note #2 on drawings EE301, ED302, ED303 as follows:

"Remove all voice/data conduit, cable tray in ceiling plenum. Leave the conduit and j-boxes in the walls for new cabling."

#### 4. WALL BRACING CLARIFICATION:

QUESTION: *"Note on wall ceiling details, AE542 calls for bracing back to the structure on most of these walls. This note calls for a "Deferred Submittal Required" Any thoughts on what gauges, spacing and clips required to the top of wall and at the deck? Without paying for the engineering on my side is just a guess."*

ANSWER: There is existing wall bracing located on some of the existing interior walls that have been part of a building remodels in the past. Some of the original building interior walls do not have any wall bracing. With the extensive

demolition to the plenum area above the ceiling and new mechanical, electrical and sprinkler systems, we have indicated that new wall bracing will be required, but note, some of the existing bracing could remain if suitable. Note, there are existing interior CMU walls that we have indicated that the existing steel bracing is to remain. **A deferred submittal is required for the new bracing for the existing and new stud walls and existing demountable walls. This is to be included within the bid for the project.**

5. FASTENER CLARIFICATION:

QUESTION: *"Will it be acceptable to use 3/4" powder actuated fasteners on the existing deck to hold these clips?"*

ANSWER: Power fasteners should be acceptable, but the existing concrete will need to be tested to verify that the concrete will not spall when fastened.

6. WALL METAL CASING CLARIFICATION:

QUESTION: *"C5/AE301 calls for a "New Metal Casing" Is this in the drywall scope and if so can we get clarification on what type will be required? Mudable L metal, J molding, Fry molding?"*

ANSWER: This is the wall joint that abuts the existing wall that the drywall is to be removed by Environmental Abatement, Inc., **(Refer to Addendum #2, Architectural Addendum Item #2)**. A mudset molding will not be acceptable at this location, since there is asbestos material observed in the drywall compound in the building, **(Refer to Addendum #2, Architectural Addendum Item #1)**. Existing conditions will need to be reviewed, but fire sealing will be required in the vertical joint each side of the existing wall and a new metal molding is to be installed over the leading edge of the existing drywall. Options for the molding: Fry Reglet #2054 or Fry Reglet #1264 that is adhered to the existing drywall or additional option: Fry Reglet #DRAT-100 that is mudset to the new drywall and abuts the existing drywall. **(Refer to the attached detail C5 on drawing AE301)**

7. TOP OF WALL DETAIL DRAWING REFERENCE CLARIFICATION:

QUESTION: *"On each of the Reflected Ceiling plans AE120, 121 & 122 the "Ceiling Plan Legend" refers to AE582 for top of wall which we are assuming was meant to say AE542."*

ANSWER: The "Ceiling Plan Legend" reference is to be changed from AE582 to AE542.

8. TOP OF WALL DETAIL CLARIFICATION:

QUESTION: *"Looking on AE121 south corridor, South wall calls for an A type top of wall condition and also A4/AE541 in the same location. We are assuming the A4/AE541 detail would be required to hold the drop so my question is does the A4 condition need to extend from the drop to the end of the wall at the gyp ceiling condition or can the A or D condition Bracing only be used in these locations. This condition also occurs on AE121 & 122. "*

ANSWER: We have indicated the existing top of wall conditions, as close as we can determine with the limited site ceiling access in some building locations, by providing the top of wall / ceiling details on AE542. There are locations at the existing top of wall conditions that have existing wood nailers installed for mounting the ceiling grid perimeter angles. This occurs sporadically at various locations through out the building. We indicated the A4/AE541 detail for the new dropped ceiling at the corridor walls. The "A" Ceiling Detail on AE542 indicates top of wall locations that we have observed existing wood nailers installed. Note, there may be other locations that have this condition that is not accessible for field verification at this time. The intent is to try to leave the wood nailers, if possible, since they are mounted to the existing ceiling grid angles. The new wall bracing at the corridor wall would be similar to detail A4/AE541.

9. DRYWALL / SKIM-COAT CLARIFICATION:

QUESTION: *"Ceiling Detail A4/AE541 calls for "Remove and replace existing 5/8" Gyp Bd. This detail is found on the RCP AE122 on AE101 indicates a skim coat over existing drywall. Which should I include?"*

ANSWER: The existing drywall is to remain and the existing wall covering is to remain. The skim-coating of the existing gypsum board is omitted from the project. The existing wall covering is to be repaired, prime painted and new wall covering installed. **(Refer to Addendum #2, Architectural Addendum Item #10 and Item #12, and Refer to the attached drawing AE541).**

10. CURTAINWALL STUD FRAMING DETAIL CLARIFICATION:

QUESTION: "Curtain Wall Mullion detail B4/AE581 is found on wall section 1/AE300. On the wall section is found on AE101 West wall then on north, south & east with "sim" attached. Does this metal stud detail occur at the N, S & East walls also?"

ANSWER: Yes, The detail occurs on all faces of the building at the new curtainwall locations. **(Refer to Frame Types "W5" and "W6" located on drawing AE621 on the Bid Documents for detail reference B4/AE581).**

11. WOOD REFINISHING SPECIFICATION CLARIFICATION:

QUESTION: "On the refinishing spec there is a V.O.C. content limit 350GL for the clear finish called out for the doors. The product spec'd is 470GL. "

ANSWER: The following Water-Based Varnish System product specification is to replace the original specification product for the Polyurethane Varnish System that is to be installed on the refinished wood doors of Additive Alternate #1 and for the new wood trim in Conference Room 319. **Replace paragraph in Specification Section 099300 "Interior Painting," as follows. (Note, a mock-up for the wood door refinishing is requested on one of the existing doors that is to be removed to verify product compatibility to existing finish).**

**3.5 INTERIOR WOOD-FINISH-SYSTEM SCHEDULE (MODIFICATION)**

**A. Wood substrates, nontraffic surfaces, refinishing existing wood doors and new wood trim finish.**

**1. Water-Based Varnish System: (Verify that the new coating is compatible with existing door finish. Provide a mock-up on a door that is to be removed to verify coating compatibility).**

**a. Prime Coat: Water-based varnish matching topcoat.**

**b. Intermediate Coat: Water-based varnish matching topcoat.**

**c. Topcoat: Varnish, water based, clear, gloss (MPI Gloss Level 6), MPI #130.**

**1) Basis of Design: Sherwin-Williams: Wood Classics, Waterborne Polyurethane Clear Gloss, A68V0091/A68VQ8091.**

**B. ARCHITECTURAL ADDENDUM ITEMS:**

**1. ASBESTOS SURVEY AND ASSESSMENT:**

Refer to the **Attachment "A2-2,"** Asbestos Survey and Assessment for the Miller Administration Building prepared by R & R Environmental, Inc.. for your review & use. Note that Environmental Abatement, Inc. is under contract by DFCM to provide the asbestos and lead abatement on the project. Environmental Abatement, Inc. will provide abatement at open accessible areas before the end of the school semester. During the project, R & R Environmental, Inc. is to be contacted if any questionable location is observed during the Project that may contain asbestos-containing material so that testing can be expedited. Note that during the Project the existing drywall is not to be cut or sanded by the contractor. Environmental Abatement, Inc. is to be contacted for any modification required to the existing drywall. The existing hollow metal door frames and existing toilet room wall tile contains lead in the finished surfaces in the material and they are not to be disturbed by the contractor. Environmental Abatement, Inc. is to be contacted for any modification required to the lead containing surfaces. Both R & R Environmental, Inc. and Environmental Abatement, Inc. understand the nature of the Project schedule and will be available on an on-call basis. Demolition and the associated abatement of specific building elements are indicated in addendum items that follow.

**2. DOOR & DRYWALL ABATEMENT AND REMOVAL FOR NEW ONE HOUR WALL LOCATION - LEVEL ONE, :**

The existing west corridor doors, frames and wall drywall, located on both sides of the wall, will be removed by Environmental Abatement, Inc.. Other items to be removed by Environmental Abatement, Inc. include: wood cashier window frames, trim, and base. The wall framing will be removed by contractor. **(Refer to attached drawing AD100).**

**3. CORRIDOR CEILING ABATEMENT & REMOVAL - LEVEL ONE:**

The existing west corridor drywall ceiling will be removed by Environmental Abatement, Inc.. The existing suspended ceiling support system will remain to be removed by contractor. The existing surface mounted light fixtures will need to be removed by contractor before the abatement can proceed. **(Refer to attached drawing AD110).**

4. CORRIDOR DOOR REMOVAL & FRAME PREPARATION - LEVEL ONE & LEVEL TWO:

The existing corridor doors on level one and level two that go into the west stair corridors and level two interior stair doorway will be removed by Environmental Abatement, Inc.. The door frames will be ground and prepped by Environmental Abatement, Inc. for frame hardware infills. **(Refer to attached drawing AD100 and AD101).**

5. STAIR DOOR & FRAME ABATEMENT & REMOVAL - LEVEL ONE & LEVEL TWO:

The existing west stair doors and frames on level one and level two will be removed by Environmental Abatement, Inc.. **(Refer to attached drawing AD100 and AD101).**

6. DRYWALL ABATEMENT & REMOVAL FOR NEW DRINKING FOUNTAINS AREAS - LEVEL TWO AND LEVEL THREE:

The existing wall drywall areas on level two and level three for the new drinking fountain alcoves will be removed by Environmental Abatement, Inc.. The wall framing will be removed by contractor. **(Refer to attached drawings AD101 and AD102).**

7. DOOR AND FRAME ABATEMENT & REMOVAL - LEVEL THREE:

At two existing locations the doors and frames in the corridor on level three will be removed by Environmental Abatement, Inc.. One additional existing door and frame will be removed and salvaged by Environmental Abatement, Inc., for reinstallation by contractor. **(Refer to attached drawing AD102).**

8. TOILET ROOM COUNTER ABATEMENT & REMOVAL - INTERMEDIATE STAIR LEVELS:

The existing toilet room counters, four total, will be removed by Environmental Abatement, Inc.. This includes the counter ceramic tile, mud set, sink and plywood substrate removal. The existing steel counter frame is to remain for reuse. **(Refer to attached drawing AD101 and AD102).**

9. TOILET ROOM COUNTER DETAIL MODIFICATION & SOLID SURFACE COUNTERTOP SPECIFICATION ADDITION:

The new counters in the toilet rooms will mount on the existing steel framework supports. New wood nailers and plywood substrate is added in the detail. The solid surface countertop is clarified in the attached specification section 123661. **(Refer to detail B3 and Countertop Section A1 in the attached drawing AE402, and refer to the Attachment "A2-6" for new specification section 123661 "Simulated Stone Countertops").**

10. EXISTING WALL COVERING MODIFICATION - LEVEL ONE, LEVEL TWO AND LEVEL THREE:

The existing wall covering located on the corridor walls are to remain. The removal of the existing wall covering, skim coating the existing drywall are omitted from the Project. Repair the existing wall covering in areas that required joint regluing or trimming and repair existing surfaces where there is an indication of wall covering delamination, bubbling and other defects. **(Refer to attached drawings AD100, AD101, AD102, AE100, AE101, and AE102).**

11. 1/4" GYPSUM BOARD OVERLAY OMISSION - LEVEL ONE:

Omit the new 1/4" gypsum board overlay in the corridors of level one. The existing corner guards are to remain, and they are to be painted. **(Refer to attached drawings AD100, AE100, Wall Section 2/AE301, Ceiling Detail B3/AE541, Details D1/AE583, D2/AE583 and D3/AE583).**

12. NEW WALL COVERING ADDITION - LEVEL ONE, LEVEL TWO AND LEVEL THREE:

New wall covering is to be installed over the existing wall covering in the corridors. Patch over uneven wall areas and repair and holes in the existing walls. Paint a primer coat over the existing wall covering and any drywall that receives new wall covering. **(Refer to attached drawings AE100, AE101, AE102, AE161 Room Finish Schedule, Interior Finish Key and Plan, AE162, AE163, Elevations A2/AE402, A3/AE402, A3/AE402, AE541, AE542 and Attachment "A2-4," for new wall covering indicated in specification section 099000 "Finish Schedule"). ( Refer to the Attachment "A2-5," for specification section 097200 "Wall Coverings").**

13. PAINT PRIMER SPECIFICATION ADDITION FOR PRIMING EXISTING WALL COVERING - LEVEL ONE, LEVEL TWO AND LEVEL THREE:

The following primer/sealer product specification is to be installed over the existing wall covering. Add paragraph to Specification Section 099123 "Interior Painting."

**(099123 3.4 Interior Painting Schedule Addition):**

**099123-3.4- D. Existing Wall Covering and Gypsum Board Substrates at New Wall Covering Locations:**

**1. High-Performance, Latex, Bonding Primer/Sealer, Water Based**

**a. Prime Coat: Primer sealer, interior, institutional low odor/VOC, MPI #17.**

**1) "Basis of Design": Sherwin Williams; PrepRite ProBlock, Interior/Exterior Latex Primer/Sealer.**

14. WOOD TRIM SPECIFICATION ADDITION:

New hardwood trim occurs in Conference Room 319 detail C5 on Bid Document Drawing AE581 and in Elevation A2 AE402 against the existing acoustic panels. **(Refer to the Attachment "A2-3," for the new specification section 064600 "Wood Trim").**

15. WALL SECTION CLARIFICATIONS:

The notes indicated on Wall Section 1 on drawing AE301 were shifted before printing. Attached drawing indicates correct note placement.

Gypsum board clarifications are indicated on Wall Section 2 on drawing AE301. **(Refer to attached drawing AE301).**

16. WALL FINISH CLARIFICATIONS:

The east side of the new one-hour fire rated corridor wall is to be painted to match the adjoining walls in rooms 101, 101A, 102, 102F, 102G, 102H, 103, 103P. Install new rubber base that matches the existing rubber base on these walls locations. **(Refer to attached drawing AE161 Room Finish Schedule and refer to Attachment "A2-4," for modifications to specification section 099000 "Finish Schedule").**

The wall finishes located near the new drinking fountains on level two and level three are clarified. **(Refer to attached drawing plans C1/AE400 and C2/AE400).**

17. DOOR HARDWARE, CLOSER PRODUCT MODIFICATION:

Replace paragraph 2.8-B in Specification Section 087100 "Door Hardware," as follows below. The Norton Door Controls (NO) - 7500 Series is modified to Sargent (SG) -281.

**2.8 DOOR CLOSERS (MODIFICATION)**

**B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.**

**1. Acceptable Manufacturers**

**a. LCN Closers (LC) - 4040XP Series.**

**b. "Sargent (SG) - 281".**

18. CARPET CLARIFICATION:

Note, the "CPT-4" Broadloom Carpet, Carpet Boarder, indicated in the Interior Finish Key on drawing AE161 is to be installed at every floor infill that is adjacent to the new curtainwall sills on levels two and three. (Refer to Bid Documents drawing AE/161

and detail C4/AE581 for level three, and detail A4/AE581 for level two). Level three Conference Room 319 is to have new hardwood trim install in place of the carpet at each floor infill, (Refer to bid document detail C5/AE581).

19. EXTERIOR CARD READER & ADA DOOR OPERATOR PUSH BUTTON MODIFICATION:

The new exterior ADA push button actuator and relocated card reader are to be surface mounted on the existing partial height concrete wall with ADA clearances to the new outward swinging exterior doors. The surface mounted boxes for the devices will require weatherized/sealed enclosures. Refer to electrical for new conduit to extend into the building. **(Refer to attached sheet AE100).**

20. SIGNAGE OMMISION:

The new signage indicated in the Signage Schedule on Drawing AE700 will be provided and installed by Owner. **(Refer to attached sheet AE700).**

C. MECHANICAL ADDENDUM ITEMS:

1. Refer to the attached addendum letter and revised drawings from WHW Engineering, Inc., dated March 11, 2015. This mechanical addendum includes changes/clarifications to Specifications, changes/clarifications to drawings and prior approvals.

D. ELECTRICAL ADDENDUM ITEMS:

SHEET EE 0061.

1. Main distribution panelboard is free standing 24" deep.

SHEET ED 301

1. Add Special Note #2 to read as follows:

“REMOVE ALL VOICE/DATA CONDUIT, CABLE TRAY IN CEILING PLENUM. LEAVE THE CONDUIT AND J-BOXES IN THE WALLS FOR NEW CABLING.”

SHEET EE 101

1. Reference Note P-14: ADA Push Buttons are provided by the door manufacturer.
2. Existing engine generator is located in a room directly west of pad mounted transformer.
3. Install the ADA push button for exterior door of Vestibule 100A on the short retaining concrete wall to the east. Core drill through existing wall and run the conduit behind the retaining wall into mechanical room and from there up to the door operators. Install the push button on a surface mounted cast box. Coordinate with architect for exact location.
4. Install a surface mounted cast box for a security card reader. Run a 3/4" conduit from the j-box to accessible ceiling plenum in corridor 100. Run a 1/2" conduit from ceiling plenum to the door strike for the exterior door. Coordinate with general contractor. Run the conduit behind the retaining wall to mechanical room and up to ceiling plenum.

SHEET EE 201

1. Add Special Note #2 to read as follows:

“LOW VOLTAGE PLENUM CABLE CAN BE USED IN CEILING PLENUM FOR LIGHTING CONTROL. UTILIZE EXISTING CONDUIT AND BOXES IN THE WALL TO RUN THE CABLES. SUPPORT THE CABLE EVERY 5 FEET WITH J-HOOKS. DO NOT LAY THE CABLES ON THE CEILING OR USE CEILING GRID SUPPORTS TO TIE THE CABLES”

SHEET EE 301, EE 302, and EE 303

1. Add Reference Note "V8" for cable tray to read as follows:

"FURNISH AND INSTALL 12" WIDE, 4" HIGH BASKET TYPE CABLE TRAY B-LINE OR APPROVED EQUAL. SUPPORT THE CABLE TRAY WITH 3/8" THREADED RODS EVERY 5'-0" AND AT EACH CORNERS AND JOINTS. PROVIDE BONDING JUMPER AT ALL THE JOINTS AND GROUND THE CABLE TRAY WITH #6 THHN FOUND CONDUCTOR TO GROUND BUS BAR IN THE TELECOM ROOM. COORDINATE WITH GENERAL CONTRACTOR FOR EXACT HEIGHT AND LOCATION."

APPROVED MANUFACTURERS

The following additional manufacturers are approved to bid. Approval of the equipment from catalog information indicates that the brand name and general characteristics are acceptable to the Engineer. Any conflict arising from use of the substituted equipment shall be the responsibility of the Supplier who shall bear all costs required to make the equipment comply with the intent of plans and specifications.

***LIGHT FIXTURES:***

<b><i><u>Type:</u></i></b>	<b><i><u>MFG:</u></i></b>
<b><i>T-4</i></b>	<b><i>LIGHTOILER</i></b>
<b><i>T-7</i></b>	<b><i>LIGHTOILER</i></b>
<b><i>T-9</i></b>	<b><i>XAL</i></b>
<b><i>T-10</i></b>	<b><i>LIGHTOILER</i></b>
<b><i>T-11</i></b>	<b><i>XAL</i></b>

***END OF ADDENDUM #2***

# ADDENDUM

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Project Name: WSU Miller Admin

Addendum No.: 2

WHW Project # 14059

Date: 03/11/15

From: WHW Engineering Inc  
8619 S Sandy Parkway Suite 101  
Sandy, Utah 84070  
Phone (801) 466-4021 Fax (801) 466-8536

To: All Bidders

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This Addendum forms and becomes a part of the Contract Documents and modifies the original Bidding Documents dated 01/16/15 as noted below. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of 2 pages and 9 drawings.

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## I - CHANGES/CLARIFICATIONS TO SPECIFICATIONS:

**Item I-1.** Specification section 230900-1.12 add the following paragraphs:

- G. The system shall only employ BACnet® communications with the capabilities to support integration to all systems in the building including: Variable Refrigerant Flow VRF system, VFDs, ERVs, pumps, meters, and any other systems capable of interface utilizing the following standard BACnet communication according to ASHRAE standard ANSI/ASHRAE 135-2001.
- H. The BAS shall provide integration to the VRF control system through the BACnet interface. The BAS shall provide a seamless user interface including building graphics, scheduling functions and setpoint adjustment with the building automation system.
- I. The BAS shall be web based and comply with WSU campus standards and shall provide total integration of the facility infrastructure systems with user access to all system data either locally over a secure Intranet within the building or by remote access by a standard Web Browser over the Internet.

**Item I-2.** Specification section 238127-2.6 add the following paragraphs:

- D. The Variable Refrigerant Flow (VRF) supplier shall furnish a complete system including equipment and controls as herein specified. The system shall include all required computer software and licenses, hardware, controllers, sensors, transmission equipment, system workstations, local panels, engineering, database and setup, supervision, commissioning, acceptance test, training, warranty service.
- E. VRF control wiring and installation shall be provided under this section and shall include wiring to all system components including outdoor condensing units, heat recovery units, indoor fan units and wall mounted controllers. This section shall provide conduit, wire and termination according to manufacturer's requirements and local codes. Wire in concealed area shall be protected by conduit. Plenum wire shall be allowed in accessible areas according to local codes.

**Item I-3.** Specification section 238127-3.1 add the following paragraphs:

- C. All VRF control components shall be furnished, installed and wired by this section. All wire, conduit termination and commissioning shall be provided according to local codes and manufacturer's requirements.
- D. Integration contractor shall be VRF factory and Tridium certified with 3 years minimum experience integrating VRF systems with Building Automation Systems.
- E. Low voltage wiring shall be installed by contractors with a minimum of five years'

experience installing Building Automation communication systems.

## II - CHANGES/CLARIFICATIONS TO DRAWINGS:

- Item II-1.** Modified the physical dimensions of a few indoor VRF units. See attached updated sheets ME102, ME103, ME602, and ME603.
- Item II-2.** Added note that ERV needs to be disassembled to fit through a standard man door then reassembled in the mechanical room. See attached updated sheets ME401 and ME601.
- Item II-3.** Added a note to provide multifunction casements on indoor ceiling cassettes requiring 75 CFM or more of outside air. See attached updated sheets ME602 and ME603.
- Item II-4.** Added a note on sizing the refrigerant piping for the VRF systems to the schedules. See attached updated ME602 and ME603.
- Item II-5.** Updated the VRF Schematics and made them more readable. See attached updated ME902, ME903, and ME904.
- Item II-6.** Sheet MS101 clarification: The existing chilled water piping in the tunnels is schedule 40 black steel pipe. There are not existing isolation valves. A shut down and draining will need to be coordinated with WSU on a Friday. This contractor shall install the new isolation valves for this branch over a weekend so that the cooling system can be restored for the following Monday.
- Item II-7.** Sheet PE101 clarification: The fixtures are remaining in the level 1 restrooms, but the intent is to replace the piping all the way down the wall to the fixture. Note 8 this sheet is indicating new piping drops to an existing custodial sink.
- Item II-8.** Sheet PE103 clarification: There was a question about restrooms for level 3. There are no level 3 restrooms. The restrooms are at the stair landings on the intermediate levels, so it would be more accurate to say that they are at level 1.5 and 2.5.

## PRIOR APPROVALS

THE FOLLOWING ITEMS, AS SUBMITTED, ARE CONSIDERED, IN GENERAL AND IN NAME ONLY, AS EQUAL TO THOSE ITEMS SPECIFIED. THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR OR SUPPLIER OF THE RESPONSIBILITY OF CONFORMING TO THE DRAWINGS AND SPECIFICATIONS, NOR DOES IT RELIEVE THE CONTRACTOR OF THE REQUIREMENTS OF THE SPECIFICATIONS FOR COORDINATION WITH OTHER TRADES. ALL DIMENSIONS SHALL BE CONFIRMED AND CORRELATED AT THE JOBSITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS AND THE SUITABILITY OF "EQUAL" PRODUCTS FOR THE SPECIFIED APPLICATION.

### Description

**Exhaust Fan: EF-1  
Air-To-Air Energy Recovery Ventilator  
Energy Recovery Units  
Louvered Penthouse  
Intake and Relief Ventilators**

### Manufacturer

**Acme, Greenheck, Cook, Twin City  
Carnes  
Annex Air  
Air Rite Mfg.  
Air Rite Mfg.**

**FACTORS FOR CAPTURED MULLIONS**  
**Thermal Transmittance<sup>1</sup> (BTU/hr • ft<sup>2</sup> • °F)**

Glass U-Factor <sup>3</sup>	Overall U-Factor <sup>4</sup>
0.48	0.57
0.46	0.55
0.44	0.53
0.42	0.51
0.40	0.50
0.38	0.48
0.36	0.46
0.34	0.44
0.32	0.43
0.30	0.41
0.28	0.39
0.26	0.38
0.24	0.36
0.22	0.34
0.20	0.32

WSU Miller  
 Administration MEP  
 Upgrade  
 Addendum #2  
 Attachment A2-1

**SHGC Matrix<sup>2</sup>**

Glass SHGC <sup>3</sup>	Overall SHGC <sup>4</sup>
0.75	0.70
0.70	0.66
0.65	0.61
0.60	0.57
0.55	0.52
0.50	0.48
0.45	0.43
0.40	0.38
0.35	0.34
0.30	0.29
0.25	0.25
0.20	0.20
0.15	0.16
0.10	0.11
0.05	0.07

**Visible Transmittance<sup>2</sup>**

Glass VT <sup>3</sup>	Overall VT <sup>4</sup>
0.90	0.82
0.85	0.77
0.80	0.73
0.75	0.68
0.70	0.64
0.65	0.59
0.60	0.55
0.55	0.50
0.50	0.45
0.45	0.41
0.40	0.36
0.35	0.32
0.30	0.27
0.25	0.23
0.20	0.18

**NOTE:** For glass values that are not listed, linear interpolation is permitted.

1. U-Factors are determined in accordance with NFRC 100.
2. SHGC and VT values are determined in accordance with NFRC 200.
3. Glass properties are based on center of glass values and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matrices are based on the standard NFRC specimen size of 2000mm wide by 2000mm high (78-3/4" by 78-3/4").

Laws and building and safety codes governing the design and use of glazed entrance, window, and curtain wall products vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.  
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**ASBESTOS, LEAD AND HAZARDOUS MATERIALS  
INSPECTION, SURVEY AND ASSESSMENT  
FOR  
MILLER ADMINISTRATION BUILDING  
WEBER STATE UNIVERSITY  
OGDEN, UTAH 84403**

**DFCM PROJECT NUMBER: 13079300**



**WEBER STATE UNIVERSITY**

**WSU Miller Administration  
MEP Upgrade  
Addendum #2  
Attachment A2-4**

**ASBESTOS SURVEY AND ASSESSMENT  
FOR  
MILLER ADMINISTRATION BUILDING  
WEBER STATE UNIVERSITY  
OGDEN, UTAH 84403**

**DFCM PROJECT NUMBER: 13079300**



**WEBER STATE UNIVERSITY**

**October 20, 2014**

**Prepared for:**



State of Utah—Department of Administrative Services

**DIVISION OF FACILITIES CONSTRUCTION  
AND MANAGEMENT**

4110 State Office Building/Salt Lake City, Utah 84114/538-3018

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**ASBESTOS SURVEY AND ASSESSMENT  
MILLER ADMINISTRATION BUILDING  
WEBER STATE UNIVERSITY**

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**Appendices**

A. Data Tables

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Table 6 – Estimated Abatement Cost by Homogeneous Area  
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- B. Building Floor Plan(s)
- C. Photograph Log
- D. Laboratory Analytical Reports(s)

## 1.0 EXECUTIVE SUMMARY

**Asbestos Survey and Assessment  
Miller Administration Building  
Weber State University  
Ogden, Utah 84403**

An asbestos survey was conducted at the subject facility during October 2014. The building was visually inspected to identify building materials that might contain asbestos. Bulk samples were collected from suspect materials and analyzed to determine if they contained asbestos. All asbestos-containing materials (ACM) were assessed for damage and the potential for exposure. This survey was requested and approved by Mr. Robert J. Anderson, Hazardous Materials Manager, State of Utah, Division of Facilities Construction and Management.

**Asbestos-Containing Materials by Homogeneous Area  
Miller Administration Building  
Weber State University**

<b>Homogeneous Area Number</b>	<b>Material Description/Location</b>	<b>Asbestos Content</b>	<b>Quantity</b>	<b>Cost Estimate</b>
M001	Floor Tile/Vault	12% Chrysotile	280 ft <sup>2</sup>	\$560
M001A	Black Flooring Mastic/Vault	>1% Chrysotile	280 ft <sup>2</sup>	\$560
M004	Vinyl Stair Skirt/First Floor	5% Chrysotile	680 lf	\$2,380
M014	CMU Wall Coating/Vault	1.2% Chrysotile	512 ft <sup>2</sup>	N/A
M016	Wall Insulation Sealant/First Floor	12% Chrysotile	628 ft <sup>2</sup>	\$7,536
T001 <sup>2</sup>	TSI – Plaster Elbows (Note 2) Various Locations	10% Chrysotile	216 each	\$10,848
T002	TSI – Plaster Roof Drain Insulation (Note 2) Various Locations	Assumed	12 each	\$576
M015	Wall System (Note 3)	Overall <1% Chrysotile	34,560 ft <sup>2</sup>	N/A

**Notes:**

1. Homogeneous Area Number (Not related to building room numbers.)
2. It is likely that asbestos containing pipe insulation may still exist in the walls, ceilings or other inaccessible areas of the building. Suspect materials uncovered during demolition or renovation activities should be assumed to contain asbestos.
3. According to the Federal Register page 542, Wednesday, January 5, 1994, 40 CFR Part 61, "Asbestos NESHAP Clarification Regarding Analysis of Multi-Layered Systems", when joint compound is applied to wallboard, it becomes an integral part of it, forming a wall system. Composite analysis of the wall system is to be conducted. In this case, the wall system contains less than 1% asbestos and is therefore not subject to the NESHAP. Removal of this material is a Class II Operation under OSHA, which requires 40-hour trained supervisors, trained workers and specific work practices (wet methods, prompt clean-up of debris, HEPA vacuums, etc).

**Asbestos Survey and Assessment  
Miller Administration Building  
Weber State University**

**2.0 INTRODUCTION**

During October 2014, R & R Environmental, Inc., conducted an asbestos survey of the Miller Administration Building located at Weber State University, Ogden, Utah. The purpose of this survey was to identify the existence, extent, and condition of both friable and non-friable asbestos-containing materials (ACM) within the facility. Bulk samples were collected from suspect materials and analyzed for asbestos content. Each occurrence of ACM was assessed for damage and friability.

The following accredited and certified inspectors performed the inspection, collected the samples and made assessment:

  
\_\_\_\_\_  
Steve Smith  
State of Utah, Division of Air Quality Inspector  
Certification Number: ASB-3274

October 20, 2014  
Date

This report was reviewed by:

  
\_\_\_\_\_  
David C. Roskelley, MSPH, CIH, CSP  
State of Utah, Division of Air Quality Inspector  
Certification Number: ASB-1370  
AHERA Inspector #5 PSI 65451 I  
Certified Safety Professional #15774  
Certified Industrial Hygienist #8529

October 20, 2014  
Date

### 3.0 BUILDING DESCRIPTION

#### Building Identification

Building Name ..... Miller Administration Building  
Building Address ..... 3848 Harrison Blvd, Ogden, Utah 84403

#### Building Construction

Building Construction Date ..... 1960's  
Building Type ..... Offices  
Building Total Sq. Ft..... 24,843  
Structural System ..... Concrete  
Exterior Wall Construction ..... Masonry  
Floor Deck Construction ..... Concrete  
Roof Construction ..... Flat, Membrane  
Floors Above Grade ..... 2  
Floors Below Grade ..... 1

#### Interior Finishes

Floors ..... Carpet, Ceramic, Vinyl Flooring  
Walls ..... Wall System, Plaster, Wood  
Attic ..... None  
Crawl space ..... None

#### Building Mechanical

Heating Plant ..... Hot Water  
Main Heating Distribution ..... Forced Air  
Cooling Plant ..... Chilled Water  
Main A / C Distribution ..... Forced Air

## **4.0 SURVEY PROCEDURES**

### **4.1 Building Survey**

All accessible areas of the facility were visually inspected to identify suspect asbestos containing materials (ACM.) All accessible surfaces, structures, and mechanical systems within these areas were examined and all suspected ACM was touched to determine friability.

Suspect ACM was identified and assessed in homogeneous areas. A homogeneous area is defined as a single material, uniform in texture and appearance, installed at one time, and unlikely to consist of more than one type, or formulation, of material. In cases where joint compound and / or tape has been applied to wallboard (gypsum board) and cannot be visually distinguished from the wallboard, it is considered an integral part of the wallboard and in effect becomes one material forming a wall or ceiling “system.”

Each homogeneous area was given a unique material identification number. Each ID number begins with a letter: “S” for surfacing materials, “T” for thermal system insulation, or “M” for miscellaneous materials. This letter is followed by a three-digit number, assigned in consecutive order. This number is used to identify the homogeneous area throughout the inspection report.

### **4.2 Bulk Sample Collection**

Bulk samples were collected from all accessible homogeneous areas of suspect ACM for subsequent laboratory analysis to determine actual asbestos content. Sampling was conducted in a manner that minimized damage to the building, did not leave any unsightly marks, and did not create a health hazard for the inspectors.

The number of samples collected from each homogeneous area generally followed the EPA AHERA regulations (40 CFR 763.86). Friable surfacing materials were sampled using the random sampling scheme given in the EPA publication 560 / 5-85-30a, titled “Asbestos in buildings: Simplified Sampling Scheme for Friable Surfacing Materials.” Between three and seven samples were collected from friable surfacing materials, depending on the size of the homogeneous area.

### **4.3 Bulk Sample Analysis**

Bulk samples were analyzed using polarized light microscopy (PLM) and visual estimation in accordance with the EPA Interim Method for the Determination of Asbestos in Bulk Insulation Samples, EPA-600 / M4-82-020. Samples were analyzed by Dixon Information, Inc., 78 West 2400 South, Salt Lake City, Utah 84115. The laboratory is accredited under the National Institute of Standards and Technology – National voluntary Laboratory Accreditation Program (NIST-NVLAP) for bulk-asbestos sample analysis and is also accredited by the American Industrial Hygiene Association (AIHA).

Federal EPA's NESHAP and AHERA regulations define ACM as material containing greater than 1% asbestos by weight; materials containing less than 1% asbestos are not considered regulated ACM.

Further, the NESHAP regulations state that any sample found to contain less than 10% asbestos but greater than "none detected," by visual estimation, must be assumed to contain greater than 1% asbestos unless confirmed to be less than 1.0% asbestos by point counting analysis. Any samples found to contain asbestos in this concentration range were assumed to contain greater than 1.0% asbestos and are listed in Section 5.8 of this report. All samples that have been point counted are identified as such in the sample result tables.

The laboratories reports can be found in Appendix D of this report.

## 5.0 SURVEY RESULTS

### 5.1 Asbestos-Containing Materials

Homogeneous areas of suspect ACM are identified as being ACM if the laboratory analysis shows the material to contain any detectable asbestos, unless subsequent TEM analysis resulted in less than 0.1% asbestos being detected. Table 1 of the Executive Summary and in Appendix A lists all homogeneous areas that were found to be ACM. Each material is described by type of material, friability and visual appearance.

Friability is defined in accordance with EPA's NESHAP regulations.

"Friable ACM" is any material containing more than 1% asbestos (as determined by PLM) that, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure and also includes non-friable ACM that may become friable during building demolition.

"Non-friable ACM" is any material containing more than 1% asbestos (as determined by PLM) that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

"Category I non-friable ACM" are asbestos-containing resilient floor coverings (commonly known as vinyl asbestos tile (VAT), asphalt roofing products, packings, and gaskets).

"Category II non-friable ACM" encompasses all other non-friable ACM.

"Non-friable RACM" is used to denote thermal system insulation that is in good condition but would become friable during renovation or demolition and therefore is "regulated asbestos containing material" (RACM).

### 5.2 Non-Asbestos-Containing Materials

Homogeneous areas of suspect ACM are identified as non-ACM if the laboratory analysis shows the material to contain no detectable asbestos. Table 2, located in Appendix A of this report, lists all homogeneous areas that were found to be non-ACM.

### 5.3 Bulk Sample Analytical Results

Table 3, located in Appendix A of this report, lists all of the bulk samples in order by sample number, that were collected from homogeneous areas of suspect ACM, along with the laboratory analytical results. Each sample was given a unique sample number. There may be more than one sample number for the same homogeneous area of suspect ACM. The homogeneous areas of suspect ACM are identified on this table by their material identification numbers. The sample location listed on this table provides a brief, but specific, description of the location where the sample was collected. This is different

than the homogeneous area location provided on Tables 1 and 2. Table 4 is the same as Table 3 except the entries has been sorted by homogeneous area number.

#### **5.4 Damage and Hazard Assessment**

Each homogeneous area of ACM has been assessed for existing damage, accessibility, and potential for future damage, and this information is presented in Table 5, located in Appendix A of this report. This table also lists the substrate present beneath each homogeneous area of ACM.

Each homogeneous area of friable ACM and asbestos-containing building material (ACBM) was classified into one of the following seven categories, as specified in EPA's AHERA regulations (40 CFR 763.88):

- (1) Damaged or significantly damaged thermal system insulation ACM.
- (2) Damaged friable surfacing ACM.
- (3) Significantly damaged friable surfacing ACM.
- (4) Damaged or significantly damaged friable miscellaneous ACM.
- (5) ACBM with potential for damage.
- (6) ACBM with potential for damage.
- (7) Any remaining friable ACBM or friable suspected ACBM.

The damage categories are defined as follows:

“Undamaged” means the material had no visible damage, or extremely minor damage or surface marring (i.e., a room full of floor tile with only two or three small corners chipped off on the tile).

“Damaged” means the material had visible damage evenly distributed over less than 10% of its surface, or localized over less than 25% of its surface.

“Significantly Damaged” means the material had visible damage that is evenly distributed over 10% or more of its surface, or localized over 25% or more if its surface.

Each homogeneous area of ACM was evaluated for accessibility to the building occupants and the general public, assuming the building was fully occupied, using the following assessment categories.

“Inaccessible” means the material was located in an area that people had no reason to enter and could not access without special measures. One example would be above a solid ceiling.

“Rarely Accessed” identifies a material that was in a location that could be accessed but wasn't unless there was a specific need. An example would be a

pipe tunnel. Another example would be a high ceiling that is out of reach and not subject to any specific disturbance.

“Periodic Access” identifies a material that was in a location that was accessible, was not occupied full time, but was accessed on a routine basis. An example would be a mechanical room or boiler room.

“Continuous Access” identifies a material that was in a location that was occupied full time and was within reach of the occupants, or was frequently subject to direct disturbance. Examples would be exposed floor tile or a normal height ceiling.

## **5.5 Hazard Ranking**

A hazard ranking has been determined for every ACM, in each functional space (room), and is listed in Table 7, Appendix A. The Hazard Rank is derived from the material’s current condition and potential for future disturbance.

The DFCM required hazard assessment process used here produces seven hazard Ranks. The rankings of potential hazard range from 7, most hazardous, to 1, least hazardous, and are used to determine abatement priority. The highest ranking is reserved for ACM that is “significantly damaged”. Hazard rankings 6 to 4 reflect ACM that is “damaged” (slight damage is the term used in Table 7), with a ranking of 6 indicating a “potential for significant damage”, and a ranking of 5 indicating a “potential for damage.” Hazard rankings of 3 to 1 are reserved for materials currently in good condition, but with a range of moderate to low in the likelihood for future disturbance.

Note that these seven rankings are different from, and should not be confused with, the seven AHERA categories of damage and potential damage described in Section 5.4, above, and listed in Table 5. This hazard assessment scheme is also completely reversed from the current EPA Management Planner hazard assessment scheme where a hazard rank of 1 is the most hazardous.

## **5.6 Homogeneous Areas with Special Considerations**

None

## **5.7 Suspect Materials Presumed to be Asbestos-Containing Materials without Laboratory Analysis**

Plaster roof basket drain insulation.

## **5.8 Inaccessible Areas**

Masonry walls and roof covering.

## **5.9 Material(s) assumed to contain >1.0% asbestos without subsequent TEM or Point Count Analysis**

None

## 6.0 RESPONSE ACTION COMMENTS

### 6.1 EPA Requirements

Asbestos is regulated as a hazardous air pollutant by the Environmental Protection Agency (EPA) under the authority of the Clean Air Act. The asbestos regulations are included in the National Emissions Standards for Hazardous Air Pollutants (NESHAP) and referenced as 40 CFR 61, Subpart M. ACMs identified in this report are subject to those regulations. Those regulations, and state and local regulations, should be carefully examined prior to renovation, demolition, cleanup, or any other activity which could disturb the ACMs, to ensure that all activities are in compliance with applicable requirements.

ACM is defined by the EPA, as any material containing greater than one percent of asbestos. ACMs are categorized as being either friable or non-friable. Friable ACMs are those materials that can be easily crumbled, pulverized, or otherwise broken up using hand or finger pressure when dry, and are materials considered more likely to produce airborne asbestos fibers. Non-friable ACMs are materials that do not meet the above test, and are considered less likely to produce airborne asbestos fibers. Not all ACMs are regulated under NESHAP. Regulated ACM (RACM) means (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of regulated demolition or renovation operations. Regulated demolition and renovation operations are those where the quantity of ACM affected is 260 linear feet or more on pipes, 160 square feet or more on other components, or 35 cubic feet or more in volume. There are certain notification requirements for demolition projects involving less than the above quantities.

Briefly, EPA requires that RACM be removed from facilities scheduled for demolition or renovation before any activity begins that would break up, dislodge, or similarly disturb the materials or preclude access to the materials for subsequent removal. Category I non-friable ACM that is not in poor condition and is not friable does not have to be removed prior to demolition of a facility. **However, these materials are exempt from mandatory removal only during demolition, not renovation. Removal is mandated when renovation activities are expected to disturb these ACMs and render them friable.** Category II non-friable ACM also does not have to be removed prior to demolition if the probability is low that the material will become crumbled, pulverized, or reduced to powder (made friable) during demolition. However, state regulations may require the removal of these materials. Additionally, Category I non-friable ACM that has not become crumbled, pulverized, or reduced to powder during demolition activities may be disposed of as ordinary construction waste.

In any situation where ACM remains in a building, it should be managed under a comprehensive operations and maintenance program (O&M). The procedures and

guidelines described in an O&M program should be followed whenever building maintenance activities may disturb any ACMs present in the building.

## **6.2 Renovation Options**

NESHAP regulations require the removal of non-friable ACMs before they are **disturbed and made friable** during renovation activities. Therefore, we recommend that all of these materials be removed and properly disposed of by a licensed asbestos abatement contractor before renovation activities begin **which have the potential of disturbing and making these materials friable**. The removal project must follow the requirements of the OSHA regulation outlined in 29 CFR 1926.1101. While these materials remain in place, a comprehensive asbestos O&M program should be implemented when the building is occupied to reduce human exposure to airborne asbestos fibers.

## 7.0 COST ESTIMATES

A breakdown of the estimated removal costs by homogeneous area can be found in the Table 6, Appendix A. These cost estimates are provided for use in long-term budgeting and planning only, and do not have a level of accuracy sufficient to be used as a construction design cost estimate. The actual cost of asbestos removal is highly dependent on a number of factors such as the size of the project, the required time frame for removal, the time of year the job is conducted, the regulatory climate at the time, etc., therefore, actual abatement costs could vary significantly from these estimates. Replacement costs have not been included in these figures.

The cost for abatement design and management services is not included in these figures. These additional fees can range from 15% of the estimated abatement costs for large projects to greater than 50% for very small projects. The design and management fees cover the cost of preparing plans and specifications, conducting the bidding process as well as third-party oversight during abatement.

## **8.0 LIMITATIONS AND EXCLUSIONS OF WARRANTY**

This asbestos survey and assessment was performed using procedures and a level of diligence typically exercised by professional consultants performing similar services. However, asbestos-containing material (ACM) can be present in a structure, but not identified using ordinary investigative procedures.

No asbestos survey can completely eliminate uncertainty regarding the presence of ACM. R & R Environmental, Inc. level of diligence and investigative procedures are intended to reduce, but not eliminate, potential uncertainty regarding the presence of ACM. The procedures used for this survey attempt to establish a balance between the competing goals of limiting investigative costs, time, and building damage, and reducing the uncertainty about unknown conditions. Therefore, the determinations in this report should not be construed as a guarantee that all ACM present in the subject property has been included in this report.

This report presents R & R Environmental, Inc.'s professional determinations, which are dependent upon information obtained during performance of consulting services. R & R Environmental, Inc. assumes no responsibility for omissions or errors resulting from inaccurate information provided by sources outside of R & R Environmental, Inc.

No warranty or guarantee, expressed or implied, is made regarding the findings, conclusions, or recommendations contained in this report. The limitations presented above supersede the requirements or provisions of all other contracts or scopes of work, implied or otherwise, except those stated or acknowledged herein.

## **Appendix A**

### **Data Tables**

# Table 1

**Asbestos-containing Materials by Homogeneous Area  
Miller Administration Building  
Weber State University**

<b>Homogeneous Area Number</b>	<b>Material Description / Location</b>	<b>Friability</b>	<b>Asbestos Content</b>	<b>Quantity</b>
<b>M001</b>	<b>Floor Tile</b> 9" tile / Vault	Non-friable	12% Chrysotile	280 ft <sup>2</sup>
<b>M001A</b>	<b>Black Flooring Mastic</b> Black tar mastic / Vault	Non-friable	>1% Chrysotile	280 ft <sup>2</sup>
<b>M004</b>	<b>Stair Skirt</b> Black rubber and mastic / Stairs	Non-friable	5% Chrysotile	680 lf
<b>M014</b>	<b>CMU Wall Coating</b> White paint, off white binder / Vault	Non-friable	3% Chrysotile	512 ft <sup>2</sup>
<b>M015</b>	<b>Wall System</b> Paint, white limestone plaster with perlite and mica, gypsum plaster / Throughout	Friable	Overall <1% Chrysotile	34,560 ft <sup>2</sup>
<b>M016</b>	<b>Wall Insulation Sealant</b> Fiberglass and black tar / Basement Fan Room	Non-friable	20% Chrysotile	628 ft <sup>2</sup>
<b>T001</b>	<b>TSI – Plaster Elbow</b> White Cotton Cloth, mineral wool, gray plaster / Throughout	Friable	1.2% Chrysotile	216 each
<b>T002</b>	<b>TSI – Roof Drain Insulation</b> Plaster / Roof Basket Drains	Non-friable	Assumed	12 each

## Table 2

**Homogeneous Areas That Do Not Contain Asbestos  
Miller Administration Building  
Weber State University**

<b>Homogeneous Area Number</b>	<b>Material Description</b>	<b>Material Location / Quantity</b>
M002	<b>Vinyl Floor Tile &amp; Mastic</b> 12" Gray colored tile and mastic	Basement Break Room Area / 180 ft <sup>2</sup>
M003	<b>Rolled Vinyl Flooring</b> Gray and white plastic and limestone, plant fiber, fiberglass and gray binder	Scattered Throughout / 160 ft <sup>2</sup>
M005	<b>Vinyl Cove Base &amp; Mastic</b> Black rubber and limestone and mastic	Scattered Throughout / 1,260 lf
M006	<b>Carpet Mastic</b> Brown and yellow resin	Throughout / 16,000 ft <sup>2</sup>
M007	<b>Ceiling Tile</b> Mineral wool in resin binder with white coating	Throughout / 12,000 ft <sup>2</sup>
M008	<b>Ceiling Tile</b> Mineral wool in resin binder with white coating	Scattered Throughout (patch) / 60 ft <sup>2</sup>
M009	<b>Ceiling Panel</b> Perlite, plant fiber, mineral wool in binder and white coating	Scattered Throughout / 6,750 ft <sup>2</sup>
M010	<b>Ceiling Panel</b> Perlite, plant fiber, mineral wool in binder and white coating	Suite 111 / 1,250 ft <sup>2</sup>
M011	<b>Ceiling Panel</b> Perlite, plant fiber, mineral wool, binder, and white coating	President's Office & Board Room / 438 ft <sup>2</sup>
M012	<b>Vault Door Insulation</b> Black paint, plaster with vermiculite	Vault / 24 ft <sup>2</sup>
M013	<b>Wood Clad Fire Door Insulation</b> White plaster with vermiculite	Throughout / 18 each
S001	<b>Plaster Surfacing</b> Paint layers, white plaster with sand, off white sandy plaster	Scattered Throughout / >3,600 ft <sup>2</sup>

**Table 3**  
**Bulk Sample Analytical Results by Sample Number**  
**Miller Administration Building**  
**Weber State University**

Sample Number	Homogeneous Area Number	Material Samples	Sample Location	Analytical Results
WSU-MAB-01	M001	Vinyl Floor Tile	Vault	12% Chrysotile
WSU-MAB-01	M001A	Black Flooring Mastic	Vault	>1% Chrysotile
WSU-MAB-02	M002	Vinyl Floor Tile & Mastic	Basement Break Room	None Detected
WSU-MAB-03	M003	Rolled Vinyl Flooring	First Floor	None Detected
WSU-MAB-04	M004	Stair Skirt	First Floor	5% Chrysotile
WSU-MAB-05	M005	Vinyl Cove Base & Mastic	South Entrance	None Detected
WSU-MAB-06	M006	Carpet Mastic	Second Floor	None Detected
WSU-MAB-07	M007	Ceiling Tile	First Floor	None Detected
WSU-MAB-08	M008	Ceiling Tile	Second Floor	None Detected
WSU-MAB-09	M009	Ceiling Panel	Second Floor	None Detected
WSU-MAB-10	M010	Ceiling Panel	First Floor	None Detected
WSU-MAB-11	M011	Ceiling Panel	3 <sup>rd</sup> Floor Board Room	None Detected
WSU-MAB-12	M012	Vault Door Insulation	Vault	None Detected
WSU-MAB-13	M013	Wood Clad Fire Door Insulation	Basement Mechanical	None Detected
WSU-MAB-14	M014	CMU Wall Coating	Vault	<1% Chrysotile
WSU-MAB-15	M014	CMU Wall Coating	Vault	<1% Chrysotile
WSU-MAB-16	M014	CMU Wall Coating	Vault	1.2% Chrysotile
WSU-MAB-17	M015	Wall System	First Floor	None Detected
WSU-MAB-18	M015	Wall System	First Floor	None Detected
WSU-MAB-19	M015	Wall System	Second Floor	None Detected
WSU-MAB-20	M015	Wall System	Second Floor	None Detected
WSU-MAB-21	M015	Wall System	Third Floor	None Detected
WSU-MAB-22 <sup>1</sup>	M015	Wall System	Third Floor	1.2% Chrysotile
WSU-MAB-23	M015	Wall System	Third Floor	<1% Chrysotile
WSU-MAB-24	S001	Plaster Surfacing	First Floor	None Detected
WSU-MAB-25	S001	Plaster Surfacing	First Floor	None Detected
WSU-MAB-26	S001	Plaster Surfacing	Fan Room	None Detected
WSU-MAB-27	S001	Plaster Surfacing	First Floor	None Detected
WSU-MAB-28	S001	Plaster Surfacing	Second Floor	None Detected
WSU-MAB-29	S001	Plaster Surfacing	Third Floor	None Detected
WSU-MAB-30	S001	Plaster Surfacing	Third Floor	None Detected
WSU-MAB-31	T001	TSI Plaster Elbow	Third Floor	1.2% Chrysotile
WSU-MAB-32	T001	TSI Plaster Elbow	Third Floor	1.2% Chrysotile
WSU-MAB-33	T001	TSI Plaster Elbow	Third Floor	1.2% Chrysotile
WSU-MAB-34	M016	Wall Insulation Sealant	First Floor	12% Chrysotile

Notes:

<sup>1</sup> This material meets the EPA's criteria for "Wall System" and is overall less than 1% asbestos.

**Table 4**

**Bulk Sample Analytical Results by Homogeneous Area Number  
Miller Administration Building  
Weber State University**

<b>Sample Number</b>	<b>Homogeneous Area Number</b>	<b>Material Samples</b>	<b>Sample Location</b>	<b>Analytical Results</b>
WSU-MAB-01	M001	Vinyl Floor Tile	Vault	12% Chrysotile
WSU-MAB-01	M001A	Black Flooring Mastic	Vault	>1% Chrysotile
WSU-MAB-02	M002	Vinyl Floor Tile & Mastic	Basement Break Room	None Detected
WSU-MAB-03	M003	Rolled Vinyl Flooring	First Floor	None Detected
WSU-MAB-04	M004	Stair Skirt	First Floor	5% Chrysotile
WSU-MAB-05	M005	Vinyl Cove Base & Mastic	South Entrance	None Detected
WSU-MAB-06	M006	Carpet Mastic	Second Floor	None Detected
WSU-MAB-07	M007	Ceiling Tile	First Floor	None Detected
WSU-MAB-08	M008	Ceiling Tile	Second Floor	None Detected
WSU-MAB-09	M009	Ceiling Panel	Second Floor	None Detected
WSU-MAB-10	M010	Ceiling Panel	First Floor	None Detected
WSU-MAB-11	M011	Ceiling Panel	3 <sup>rd</sup> Floor Board Room	None Detected
WSU-MAB-12	M012	Vault Door Insulation	Vault	None Detected
WSU-MAB-13	M013	Wood Clad Fire Door Insulation	Basement Mechanical	None Detected
WSU-MAB-14	M014	CMU Wall Coating	Vault	<1% Chrysotile
WSU-MAB-15	M014	CMU Wall Coating	Vault	<1% Chrysotile
WSU-MAB-16	M014	CMU Wall Coating	Vault	1.2% Chrysotile
WSU-MAB-17	M015	Wall System	First Floor	None Detected
WSU-MAB-18	M015	Wall System	First Floor	None Detected
WSU-MAB-19	M015	Wall System	Second Floor	None Detected
WSU-MAB-20	M015	Wall System	Second Floor	None Detected
WSU-MAB-21	M015	Wall System	Third Floor	None Detected
WSU-MAB-22 <sup>1</sup>	M015	Wall System	Third Floor	1.2% Chrysotile
WSU-MAB-23	M015	Wall System	Third Floor	<1% Chrysotile
WSU-MAB-34	M016	Wall Insulation Sealant	First Floor	12% Chrysotile
WSU-MAB-24	S001	Plaster Surfacing	First Floor	None Detected
WSU-MAB-25	S001	Plaster Surfacing	First Floor	None Detected
WSU-MAB-26	S001	Plaster Surfacing	Fan Room	None Detected
WSU-MAB-27	S001	Plaster Surfacing	First Floor	None Detected
WSU-MAB-28	S001	Plaster Surfacing	Second Floor	None Detected
WSU-MAB-29	S001	Plaster Surfacing	Third Floor	None Detected
WSU-MAB-30	S001	Plaster Surfacing	Third Floor	None Detected
WSU-MAB-31	T001	TSI Plaster Elbow	Third Floor	1.2% Chrysotile
WSU-MAB-32	T001	TSI Plaster Elbow	Third Floor	1.2% Chrysotile
WSU-MAB-33	T001	TSI Plaster Elbow	Third Floor	1.2% Chrysotile

Notes:

<sup>1</sup> This material meets the EPA's criteria for "Wall System" and is overall less than 1% asbestos.

## Table 5

### Damage and Hazard Assessment by Homogeneous Area Miller Administration Building Weber State University

Area Number	Material Type	Substrate	Assessment Category	Damage	Accessibility	Disturbance Potential
M001	Vinyl Floor Tile	Concrete	X	Slight Damage	Periodic Access	Medium
M001A	Black Floor Mastic	Concrete	X	No Damage	Periodic Access	Low
M004	Stair Skirt	Concrete	X	No Damage	Easily Accessed	Medium
M014	CMU Wall Coating	CMU Block	X	Slight Damage	Periodic Access	Medium
M016	Wall Insulation Sealant	Concrete	X	Damaged	Easily Accessed	High
T001	TSI Plaster Elbow	Metal	5	No Damage	Rarely Accessed	Low
T002	TSI Roof Drain Insulation	Metal	5	No Damage	Rarely Accessed	Low

Note: Assessment Categories:  
1-Damaged or significantly damaged thermal system insulation ACM  
2-Damaged friable surfacing ACM  
3-Significantly damaged friable surfacing ACM  
4-Damaged or significantly damaged friable miscellaneous ACM  
5-ACM with potential for damage  
6-ACM with potential for significant damage  
7-Any remaining friable ACM or friable suspect ACM  
X-Not applicable (material is non-friable surfacing or miscellaneous material)

## Table 6

### Estimated Abatement Costs by Homogeneous Area Miller Administration Building Weber State University

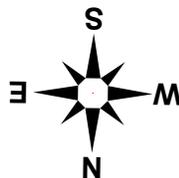
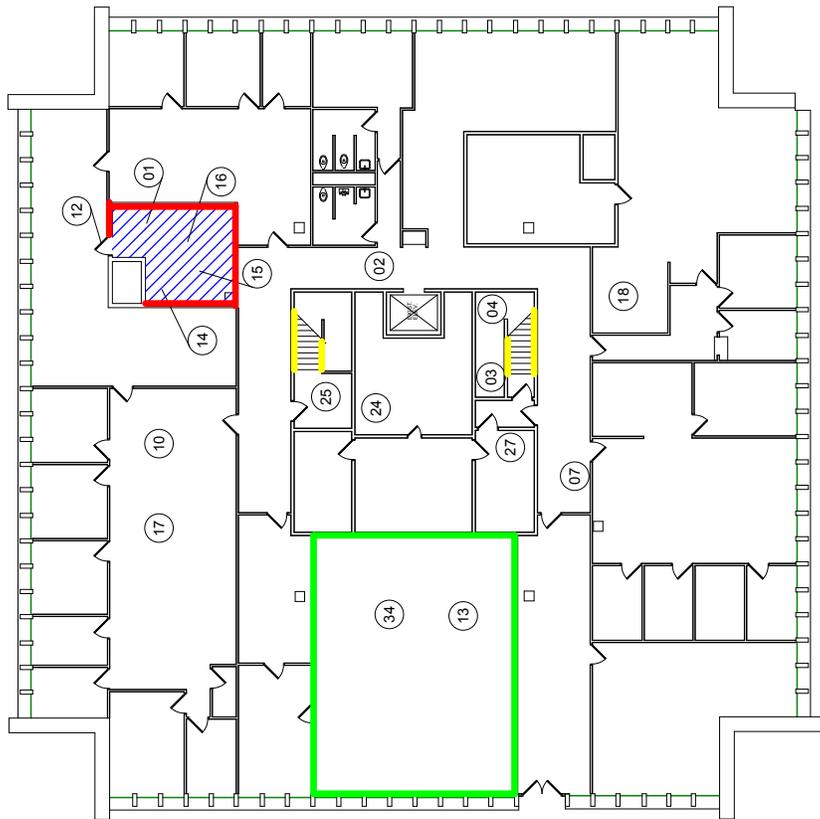
Homogeneous Area Number	Material	Quantity	Average Unit Cost	Abatement Cost
M001	Vinyl Floor Tile	280 ft <sup>2</sup>	\$2.00	\$560
M001A	Black Floor Mastic	280 ft <sup>2</sup>	\$2.00	\$560
M004	Stair Skirt	680 lf	\$3.00	\$2,380
M014	CMU Wall Coating	512 ft <sup>2</sup>	N/A	N/A
M016	Wall Insulation Sealant	628 ft <sup>2</sup>	\$12.00	\$7,536
T001	TSI Plaster Elbow	216 each	\$48	\$10,848
T002	TSI Roof Drain Insulation	12 each	\$48	\$576
<b>TOTAL ESTIMATED ABATEMENT COST</b>				<b>\$22,460.00</b>

Notes:

1. Estimated abatement costs do not include replacement costs or costs for a consultant to manage the abatement (see section 7.0).
2. According to the Federal Register page 542, Wednesday, January 5, 1994, 40 CFR Part 61, "Asbestos NESHAP Clarification Regarding Analysis of Multi-Layered Systems", when joint compound is applied to wallboard, it becomes an integral part of it, forming a wall system. Composite analysis of the wall system is to be conducted. In this case, the wall system contains less than 1% asbestos and is therefore not subject to the NESHAP. Removal of this material is a Class II Operation under OSHA, which requires 40-hour trained supervisors, trained workers and specific work practices (wet methods, prompt clean-up of debris, HEPA vacuums, etc).

## **Appendix B**

# **Building Floor Plans**



# FIRST LEVEL

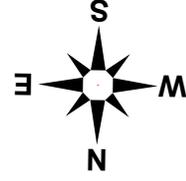
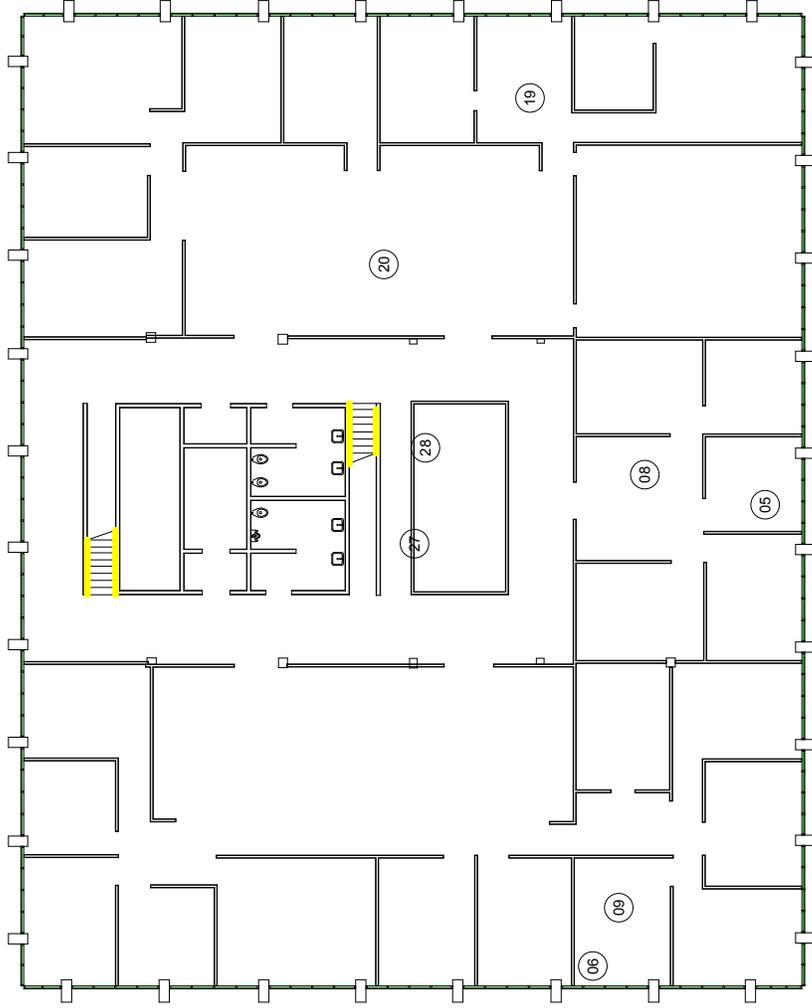
- █ = CMU WALL COATING CONTAINS ASBESTOS
- ▨ = ASBESTOS CONTAINING FLOOR TILE & MASTIC
- █ = WALL INSULATION SEALANT CONTAINS ASBESTOS
- ## = SAMPLE LOCATION AND NUMBER
- █ = STAIR SKIRT CONTAINS ASBESTOS

WEBER STATE UNIVERSITY  
 MILLER ADMIN BLDG  
 OGDEN, UTAH  
 OCTOBER 2014

## MILLER ADMINISTRATION BUILDING



**ENVIRONMENTAL, INC.**  
 ASBESTOS • LEAD • INDUSTRIAL HYGIENE  
 47 West 9000 South, Suite #2 Sandy, Utah 84070  
 (801) 552-2380 • Office (801) 552-2981 • Fax



## SECOND LEVEL

— = STAIR SKIRT CONTAINS ASBESTOS

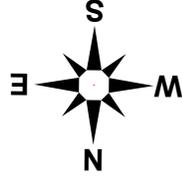
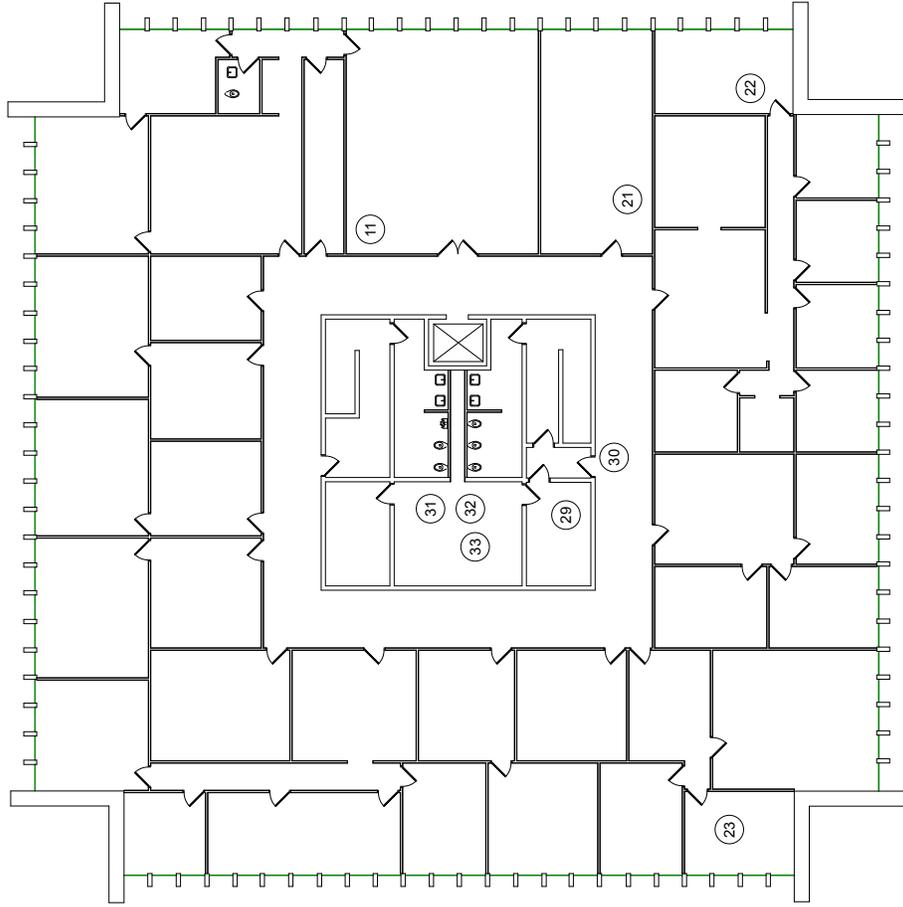
(##) = SAMPLE LOCATION AND NUMBER

WEBER STATE UNIVERSITY  
MILLER ADMIN BLDG  
OGDEN, UTAH

OCTOBER 2014

## MILLER ADMINISTRATION BUILDING

**ENVIRONMENTAL, INC.**  
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47 West 9000 South, Suite #2 Sandy, Utah 84070  
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THIRD LEVEL

## = SAMPLE LOCATION AND NUMBER

WEBER STATE UNIVERSITY  
MILLER ADMIN BLDG  
OGDEN, UTAH

OCTOBER 2014

MILLER ADMINISTRATION BUILDING

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## **Appendix C**

# **Photograph Log**

**Photograph Log**  
**Miller Administration Building**  
**Weber State University**

1. Exterior South elevation.
2. 9" Vinyl Floor Tile & Mastic
3. Stair Skirt
4. CMU Wall Coating
5. Wall Insulation Sealant
6. TSI Plaster Elbow
7. TSI Roof Drain Insulation
8. Wall System



**PHOTO 1: Miller Administration Building (view from south)**

**PHOTO 2: 9" Vinyl Floor Tile & Mastic**



**PHOTO 3: Stair Skirt**

**PHOTO 4: CMU Wall Coating**

**R & R Environmental, Inc.**

47 West 9000 South, Suite #2, Sandy, Utah 84070  
 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:

SCALE:

REVIEWED BY:

DRAWN BY:

DATE:

FILE:

**SITE PHOTOGRAPHS**

**ASBESTOS SURVEY AND ASSESSMENT**

**MILLER ADMINISTRATION BUILDING  
 WEBER STATE UNIVERSITY  
 OGDEN, UTAH 84403**



**PHOTO 5: Wall Insulation Sealant**

**PHOTO 6: TSI Plaster Elbow**



**PHOTO 7: TSI Roof Drain Insulation**

**PHOTO 8: Wall System**

**R & R Environmental, Inc.**

47 West 9000 South, Suite #2, Sandy, Utah 84070  
 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:

SCALE:

REVIEWED BY:

DRAWN BY:

DATE:

FILE:

**SITE PHOTOGRAPHS**

**ASBESTOS SURVEY AND ASSESSMENT**

**MILLER ADMINISTRATION BUILDING  
 WEBER STATE UNIVERSITY  
 OGDEN, UTAH 84403**

## **Appendix D**

# **Laboratory Analytical Reports**

# DIXON INFORMATION INC.

MICROSCOPY, ASBESTOS ANALYSIS & CONSULTING

A.I.H.A. ACCREDITED LABORATORY # 101579

NVLAP LAB CODE 101012-0

October 2, 2014

Mr. David Roskelley  
R&R Environmental  
47 West 9000 South, Unit #2  
Sandy, UT 84070

Ref: Batch # 122361, Lab # RR47500 - RR47533  
Received September 30, 2014  
Test report, Page 1 of 9  
WSU-Miller Administration Building  
3850 Dixon Pkwy, Ogden, UT 84403  
Sampled by Steve Smith 9/24/14

Dear Mr. Roskelley:

Samples RR47500 through RR47533 have been analyzed by visual estimation based on EPA-600/M4-82-020 December 1982 optical microscopy test method, with guidance from the EPA/600/R-93/116 July 1993 and OSHA ID 191 methods. Appendix "A" contains statements which an accredited laboratory must make to meet the requirements of accrediting agencies. It also contains additional information about the method of analysis. Appendix "A" must be included as an essential part of this test report. This analysis is accredited under NVLAP Lab Code: 101012-0. It does not contain data or calibrations for tests performed under the AIHA program under lab code 101579.

This report may be reproduced but all reproduction must be in full unless written approval is received from the laboratory for partial reproduction. The results of analysis are as follows:

Lab RR47500, Field WSU-MAB-01 9" VFT & Mastic

This is **12% chrysotile asbestos** in an off-white plastic and limestone tile.

**Note:** The black mastic contains **greater than 1% chrysotile asbestos**.

The tile is greater than 99% of the sample. The black mastic is less than 1% of the sample.

Lab RR47501, Field WSU-MAB-02 12" VFT & Mastic

This is a gray plastic and limestone tile with yellow resin mastic. **Asbestos is none detected.**

The tile is 99% of the sample. The mastic is 1% of the sample.

Batch # 122361

Lab # RR47500 - RR47533

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Lab RR47502, Field WSU-MAB-03 Rolled Vinyl Flooring

This sample contains three types of material: The first type is gray and white plastic and limestone; the second type is 25% plant fiber, 1% synthetic fiber, 3% wollastonite, and 5% fiberglass in gray binder; the third type is yellow resin mastic. **Asbestos is none detected.**

The first type is 55% of the sample. The second type is 44% of the sample. The third type is 1% of the sample.

Lab RR47503, Field WSU-MAB-04 Black Vinyl Stair Skirt & Mastic

This sample contains two types of material: The first type is 5% **chrysotile asbestos** in black rubber; the second type is 1% talc fiber in brown resin mastic. This sample is non-homogeneous.

The first type is 99% of the sample. The second type is 1% of the sample.

**Note:** Under certain geologic conditions, talc and amphibole minerals occur in the same deposit. In some of those deposits, asbestiform fibers grow. The chemical composition and crystal structure of these fibers range between that of talc and that of anthophyllite, the fibers are asbestiform mineraloids which can be very difficult to characterize by PLM and/or TEM.

Lab RR47504, Field WSU-MAB-05 Black VCB & Mastic

This sample contains two types of material: The first type is black rubber and limestone; the second type is white resin mastic with mica. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 95% of the sample. The second type is 5% of the sample.

Lab RR47505, Field WSU-MAB-06 Carpet Mastic

This is brown and yellow resin mastic. **Asbestos is none detected.**

Lab RR47506, Field WSU-MAB-07 12" CT #1

This is 65% mineral wool in white resin binder with 1% wollastonite in a white coating on one side. **Asbestos is none detected.**

The white coating is 1% of the sample.

Lab RR47507, Field WSU-MAB-08 12" CT #2

This is 65% mineral wool in white resin binder with a white coating on one side. **Asbestos is none detected.**

The white coating is 1% of the sample.

Batch # 122361

Lab # RR47500 - RR47533

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Lab RR47508, Field WSU-MAB-09 2' X 4' CP #1

This is a light gray sample with perlite, 25% plant fiber, and 25% mineral wool in resin binder with a white coating on one side. **Asbestos is none detected.**

The white coating is 1% of the sample.

Lab RR47509, Field WSU-MAB-10 2' X 4' CP #2

This is a light gray sample with perlite, 25% plant fiber, and 25% mineral wool in resin binder with a white coating on one side. **Asbestos is none detected.**

The white coating is 1% of the sample.

Lab RR47510, Field WSU-MAB-11 2' X 2' CP

This is a light gray sample with perlite, 25% plant fiber, and 25% mineral wool in resin binder with a white coating on one side. **Asbestos is none detected.**

The white coating is 1% of the sample.

Lab RR47511, Field WSU-MAB-12 Vault Door Insulation

This sample contains two types of material: The first type is black paint; the second type is white plaster with vermiculite. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 1% of the sample. The second type is 99% of the sample.

Lab RR47512, Field WSU-MAB-13 Fire Door Insulation

This is 5% plant fiber in white plaster with vermiculite. **Asbestos is none detected.**

Lab RR47513, Field WSU-MAB-14 CMU Wall Coating

This sample contains three types of material: The first type is white paint; the second type is **less than 1% chrysotile asbestos** in white binder; the third type is gray sandy cement. This sample is non-homogeneous.

The first type is 5% of the sample. The second type is 5% of the sample. The third type is 90% of the sample.

The analysis sensitivity is limited in the 2<sup>nd</sup> material type due to small sample size and pigment interference.

**Note:** Insufficient sample for point count.

Batch # 122361

Lab # RR47500 - RR47533

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Lab RR47514, Field WSU-MAB-15 CMU Wall Coating

This sample contains three types of material: The first type is white paint; the second type is **less than 1% chrysotile asbestos** in off-white binder; the third type is gray concrete with cinders. This sample is non-homogeneous.

The first type is 49% of the sample. The second type is 1% of the sample. The third type is 50% of the sample.

The analysis sensitivity is limited in the 2<sup>nd</sup> material type due to small sample size and pigment interference.

**Note:** Insufficient sample size for point count.

Lab RR47515, Field WSU-MAB-16 CMU Wall Coating

This sample contains three types of material: The first type is white paint; the second type is **1.2% chrysotile asbestos** in off-white binder; the third type is gray concrete with cinders. This sample is non-homogeneous.

The first type is 38% of the sample. The second type is 2% of the sample. The third type is 60% of the sample.

The analysis sensitivity is limited in the 2<sup>nd</sup> material type due to small sample size and pigment interference.

**Note:** Insufficient sample size for point count.

Lab RR47516, Field WSU-MAB-17 Wall System

This sample contains four types of material: The first type is off-white paint layers, the second type is white limestone plaster with perlite and mica, the third type is brown plant fiber paper, and the fourth type is white gypsum plaster with 1% plant fiber. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 1% of the sample. The second type is 6% of the sample. The third type is 3% of the sample. The fourth type is 90% of the sample.

Batch # 122361

Lab # RR47500 - RR47533

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Lab RR47517, Field WSU-MAB-18 Wall System

This sample contains four types of material: The first type is off-white paint layers, the second type is white limestone and gypsum plasters with mica, the third type is brown plant fiber paper, and the fourth type is white gypsum plaster with 1% plant fiber. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 1% of the sample. The second type is 5% of the sample. The third type is 3% of the sample. The fourth type is 91% of the sample.

Lab RR47518, Field WSU-MAB-19 Wall System

This sample contains four types of material: The first type is off-white paint layers, the second type is white limestone and gypsum plasters with mica, the third type is brown plant fiber paper, and the fourth type is white gypsum plaster with 1% plant fiber. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 1% of the sample. The second type is 3% of the sample. The third type is 3% of the sample. The fourth type is 93% of the sample.

Lab RR47519, Field WSU-MAB-20 Wall System

This sample contains four types of material: The first type is off-white paint layers, the second type is white limestone plaster with mica and perlite, the third type is brown plant fiber paper, and the fourth type is white gypsum plaster with 1% fiberglass and 1% plant fiber. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 1% of the sample. The second type is 6% of the sample. The third type is 3% of the sample. The fourth type is 90% of the sample.

Lab RR47520, Field WSU-MAB-21 Wall System

This sample contains four types of material: The first type is off-white paint layers, the second type is white limestone plaster with perlite and mica, the third type is brown plant fiber paper, and the fourth type is white gypsum plaster with 1% fiberglass and 1% plant fiber. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 1% of the sample. The second type is 6% of the sample. The third type is 3% of the sample. The fourth type is 90% of the sample.

Batch # 122361

Lab # RR47500 - RR47533

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Lab RR47521, Field WSU-MAB-22 Wall System

This sample contains four types of materials: The first type is off-white paint layers, the second type is **1.2% chrysotile asbestos** in white limestone plaster with mica, the third type is brown plant fiber paper, and the fourth type is white gypsum plaster with 1% fiberglass and 1% plant fiber. This sample is non-homogeneous.

The first type is 1% of the sample. The second type is 4% of the sample. The third type is 3% of the sample. The fourth type is 92% of the sample.

If this sample meets the EPA criteria for "wall system", based on the sample given, the overall asbestos percentage is less than 1%. EPA requires point count to verify less than 1% asbestos content.

**Note:** Some of the chrysotile asbestos is a low grade variety that grades into a lizardite antigorite polymorph.

Lab RR47522, Field WSU-MAB-23 Wall System

This sample contains four types of materials: The first type is off-white paint, the second type is **less than 1% chrysotile asbestos** in white limestone plaster with mica, the third type is brown plant fiber paper, and the fourth type is white gypsum plaster with 1% fiberglass and 1% plant fiber. This sample is non-homogeneous.

The first type is 1% of the sample. The second type is 4% of the sample. The third type is 3% of the sample. The fourth type is 92% of the sample.

If this sample meets the EPA criteria for "wall system", based on the sample given, the overall asbestos percentage is less than 1%. EPA requires point count to verify less than 1% asbestos content.

**Note:** Some of the chrysotile asbestos is a low grade variety that grades into a lizardite antigorite polymorph.

Lab RR47523, Field WSU-MAB-24 Plaster Surfacing

This sample contains three types of material: The first type is off-white paint; the second type is white plaster with sand; the third type is off-white plaster with sand. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 5% of the sample. The second type is 80% of the sample. The third type is 15% of the sample.

**Note:** Small sample size.

Batch # 122361

Lab # RR47500 - RR47533

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Lab RR47524, Field WSU-MAB-25 Plaster Surfacing

This sample contains three types of material: The first type is white paint layers; the second type is white plaster with sand; the third type is off-white sandy plaster. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 15% of the sample. The second type is 60% of the sample. The third type is 25% of the sample.

The analysis sensitivity is limited in the 3<sup>rd</sup> material type due to small sample size.

Lab RR47525, Field WSU-MAB-26 Plaster Surfacing

This sample contains two types of material: The first type is white paint layers; the second type is white and off-white plaster with sand. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 40% of the sample. The second type is 60% of the sample.

The analysis sensitivity is limited due to small sample size.

Lab RR47526, Field WSU-MAB-27 Plaster Surfacing

This sample contains two types of material: The first type is white paint layers; the second type is white and off-white plaster with sand. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 10% of the sample. The second type is 90% of the sample.

The analysis sensitivity is limited due to small sample size.

Lab RR47527, Field WSU-MAB-28 Plaster Surfacing

This sample contains three types of material: The first type is white paint layers; the second type is white plaster with sand; the third type is off-white sandy plaster with sand. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 20% of the sample. The second type is 35% of the sample. The third type is 45% of the sample.

The analysis sensitivity is limited due to small sample size.

Batch # 122361

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Lab RR47528, Field WSU-MAB-29 Plaster Surfacing

This sample contains three types of material: The first type is white paint layers; the second type is white plaster with sand; the third type is off-white and tan sandy plasters. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 10% of the sample. The second type is 40% of the sample. The third type is 50% of the sample.

The analysis sensitivity is limited due to small sample size.

Lab RR47529, Field WSU-MAB-30 Plaster Surfacing

This sample contains three types of material: The first type is white paint layers; the second type is white plaster with sand; the third type is off-white sandy plaster. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 10% of the sample. The second type is 50% of the sample. The third type is 40% of the sample.

The analysis sensitivity is limited due to small sample size.

Lab RR47530, Field WSU-MAB-31 TSI-Plaster Fittings

This sample contains two types of material: The first type is white cotton cloth; the second type is **1.2% chrysotile asbestos** and 15% mineral wool in gray plaster. This sample is non-homogeneous.

The first type is 2% of the sample. The second type is 98% of the sample.

Lab RR47531, Field WSU-MAB-32 TSI-Plaster Fittings

This sample contains four types of material: The first type is white paint; the second type is white cotton cloth; the third type is **1.2% chrysotile asbestos** and 15% mineral wool in gray plaster; the fourth type is 95% glass wool in yellow resin. This sample is non-homogeneous.

The first type is 1% of the sample. The second type is 1% of the sample. The third type is 90% of the sample. The fourth type is 8% of the sample.

Lab RR47532, Field WSU-MAB-33 TSI-Plaster Fittings

This sample contains three types of material: The first type is white paint; the second type is white cotton cloth; the third type is **1.2% chrysotile asbestos** and 15% mineral wool in gray plaster. This sample is non-homogeneous.

The first type is 1% of the sample. The second type is 2% of the sample. The third type is 97% of the sample.

Batch #122361  
Lab #RR47500-RR47533  
Page 9 of 9

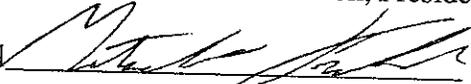
Lab RR47533, Field WSU-MAB-34 Wall Insulation Sealant  
This is 12% **chrysotile asbestos** and 3% fiberglass in black tar with debris.

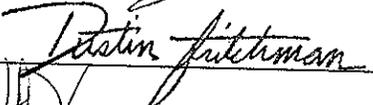
In order to be sure reagents and tools used for analysis are not contaminated with asbestos, blanks are tested. Asbestos was none detected in the blanks tested with this bulk sample set.

Very truly yours,



Steve H. Dixon, President

Analyst: Mitch Howell 

Analyst: Dustin Fritchman 

Analyst: Steve H. Dixon 

Date Analyzed: October 2, 2014

# RUSH



122361

### Bulk Analytical Request Form

LAB: Dixon Information  
 78 West 2400 South  
 South Salt Lake, UT 84115  
 Ph. 801-486-0800  
 Fax. 801-486-0849

Page | of 2

Turnaround Time: Rush Non-Rush 2-hr Rush

Location sample was taken WSU - Miller Administration Building  
 Street address where sample was taken 3850 Dixon Pkwy Ogden, UT 84403  
 Sampled by Steve Smith Date of Collection 9-29-14

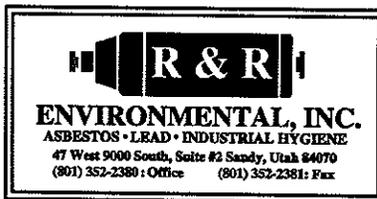
<b>Report to be sent to:</b>	<b>Billing to be sent to:</b>
Name: <u>Dave Roskelley</u>	Name: <u>R&amp;R Environmental Inc.</u>
Address: _____	Address: _____
City: _____ State: _____	City: _____ State: _____
Zip Code: _____	Zip Code: _____
Telephone #: _____	Telephone #: _____
Fax #: _____	Fax #: _____

Field #	Description	Date	Lab #
WSU-MAB-01	9" VFT + mastic	9-29-14	47500
" 02	12" VFT + mastic		47501
" 03	Roller Vinyl Flooring		47502
" 04	Black Vinyl Stair Skirt + mastic		47503
" 05	Black VCB + mastic		47504
" 06	Carpet mastic		47505
" 07	12" CT #1		47506
" 08	12" CT #2		47507
" 09	2' x 4' CP #1		47508
" 10	2' x 4' CP #2		47509
" 11	2' x 2' CP		47510
" 12	Vault Door Insulation		47511
" 13	Fire Door Insulation		47512
" 14	CMU wall coating		47513
" 15	"		47514
" 16	"		47515
" 17	Wall System		47516
" 18	"		47517

#### Chain of Custody

By submitting asbestos samples for analysis and/or signing a chain of custody, R&R Environmental agrees that this is the equivalent of the submission of a purchase order and agrees to pay for services provided by the analytical laboratory according to its posted standard schedule of fees for services.

Submitted by <u>[Signature]</u>	Date <u>9-30-14</u>	Time <u>10:33</u>
Received by Lab <u>[Signature]</u>	Date <u>9-30-14</u>	Time <u>11:33</u>
Received by Analyst <u>[Signature]</u>	Date <u>10-2-14</u>	Time <u>17:00</u>
Returned by Lab _____	Date _____	Time _____



### Bulk Analytical Request Form

LAB: Dixon Information  
 78 West 2400 South  
 South Salt Lake, UT 84115  
 Ph. 801-486-0800  
 Fax. 801-486-0849

Turnaround Time:      Rush      Non-Rush      2-hr Rush

Location sample was taken WSU - Miller Administration Building  
 Street address where sample was taken 3850 Dixon Pkwy Ogden, UT 84403  
 Sampled by Steve Smith      Date of Collection 9-29-14

<b>Report to be sent to:</b>		<b>Billing to be sent to:</b>	
Name: <u>Dave Roskelley</u>	Address: _____	Name: _____	Address: <u>R&amp;R Environmental Inc.</u>
City: _____ State: _____	City: _____ State: _____	City: _____ State: _____	City: _____ State: _____
Zip Code: _____	Zip Code: _____	Zip Code: _____	Zip Code: _____
Telephone #: _____	Telephone #: _____	Telephone #: _____	Telephone #: _____
Fax #: _____	Fax #: _____	Fax #: _____	Fax #: _____

Field #	Description	Date	Lab #
<u>WSU - MAR - 19</u>	<u>Wall System</u>	<u>9-29-14</u>	<u>47518</u>
<u>" 20</u>	<u>"</u>		<u>47519</u>
<u>" 21</u>	<u>"</u>		<u>47520</u>
<u>" 22</u>	<u>"</u>		<u>47521</u>
<u>" 23</u>	<u>"</u>		<u>47522</u>
<u>" 24</u>	<u>Plaster Surfacing</u>		<u>47523</u>
<u>" 25</u>	<u>"</u>		<u>47524</u>
<u>" 26</u>	<u>"</u>		<u>47525</u>
<u>" 27</u>	<u>"</u>		<u>47526</u>
<u>" 28</u>	<u>"</u>		<u>47527</u>
<u>" 29</u>	<u>"</u>		<u>47528</u>
<u>" 30</u>	<u>"</u>		<u>47529</u>
<u>" 31</u>	<u>T&amp;I - Plaster Fittings</u>		<u>47530</u>
<u>" 32</u>	<u>"</u>		<u>47531</u>
<u>" 33</u>	<u>"</u>		<u>47532</u>
<u>" 34</u>	<u>Wall Insulation Sealant</u>		<u>47533</u>

#### Chain of Custody

By submitting asbestos samples for analysis and/or signing a chain of custody, R&R Environmental agrees that this is the equivalent of the submission of a purchase order and agrees to pay for services provided by the analytical laboratory according to its posted standard schedule of fees for services.

Submitted by <u>[Signature]</u>	Date <u>9-30-14</u>	Time <u>1033</u>
Received by Lab <u>[Signature]</u>	Date <u>9-30-14</u>	Time <u>1033</u>
Received by Analyst _____	Date _____	Time _____
Returned by Lab _____	Date _____	Time _____

## **Appendix "A"**

"This report relates only to the items tested. This report must not be used to claim product endorsement by NVLAP or AIHA"

NVLAP and AIHA requires laboratories to state the condition of samples received for testing: These samples are in acceptable condition for analysis unless there is a statement in the report of analysis that a test item has some characteristics or condition that precludes analysis or requires a modification of standard analytical methodology. If a test item is not acceptable, the reasons for non-acceptability will be given under the laboratory number for that particular test item. The reported percentages of each material type are based on the sample received by the laboratory and may not be representative of the parent material. Orientation of top and bottom may not be specified due to uncertainty of orientation.

### **Methods of Analysis and Limit of Detection**

In air count analysis, the results may be biased when interferences are noted.

The accuracy of asbestos analysis in bulk samples increases with increasing concentration of asbestos. Pigments, binders, small sample size and multiple layers may affect the analysis sensitivity.

There are two methods for analysis of asbestos in a bulk test sample. Visual estimation is the most sensitive method. If an analyst makes a patient search, 0.1% or less asbestos can be detected in a bulk sample.

The second method of analysis is a statistical approach called point counting. EPA will not accept visual estimations if a laboratory detects a trace of asbestos in a sample i.e. anything less than 1% asbestos. Government agencies regulate asbestos containing materials (ACM) whenever the ACM is more than 1%. OSHA requirements apply on samples containing any amount of asbestos.

Due to the higher charge for a point count analysis, Dixon Information Inc. does not perform a point count unless authorized to do so by the customer. If a sample is point counted, when possible, various chemical and/or physical means may be used to concentrate the asbestos in the sample. This is permitted by the EPA method and it increases the accuracy of the analysis.

**LEAD-BASED PAINT INSPECTION  
FOR THE  
WEBER STATE UNIVERSITY  
MILLER ADMINISTRATION BUILDING**



**WEBER STATE UNIVERSITY**

**OCTOBER 20, 2014**

**Prepared for:**



State of Utah—Department of Administrative Services

**DIVISION OF FACILITIES CONSTRUCTION  
AND MANAGEMENT**

4110 State Office Building/Salt Lake City, Utah 84114/538-3018

**Mr. Robert Anderson  
Hazardous Materials Manager  
State of Utah  
Department of Administrative Services  
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**Prepared by:**

**David C. Roskelley, MSPH, CIH, CSP  
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47 West 9000 South, Suite #2  
Sandy, Utah 84070  
dave@rrenviro.com  
Phone (801) 541-1035**



**LEAD-BASED PAINT INSPECTION  
WEBER STATE UNIVERSITY  
MILLER ADMINISTRATION BUILDING  
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7.0 Limitations and Exclusion of Warranty .....	5

**Appendices**

- A. Data Tables
  - Table 1 – Building Component with Lead Levels at 0.3 mg/cm<sup>2</sup> and above
  - Table 2 – Building Component with Lead Levels below 0.3 mg/cm<sup>2</sup>

# Lead-Based Paint Inspection

Weber State University  
Miller Administration Building

## 1.0 INTRODUCTION

On October 1, 2014 a lead-based paint (LBP) survey was conducted for the Weber State University Miller Administration Building in Ogden, Utah. The purpose of the survey was to identify lead in paint on interior and exterior surfaces of the building. Measurements for lead in paint were made using a Niton XLp 300 X-ray Fluorescence (XRF) Spectrum Analyzer. No chip sampling or laboratory analysis was performed for confirmation of XRF measurements.

The survey work was overseen by David Roskelley with R & R Environmental, Inc. in Sandy, Utah. David Roskelley has completed Lead Inspector Training through the University of Utah, Rocky Mountain Center for Occupational and Environmental Health (RMCOEH), an EPA-sponsored Regional Lead Training Center, and is certified by the State of Utah, Division of Environmental Quality, as a Lead Inspector.

The U.S. Department of housing and Urban Development (HUD) *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in housing* (HUD Guidelines), Chapter 7: Lead-Based Paint Inspection, 1997 Revision, was generally followed for this survey, with modifications appropriate for a non-residential building.

The following accredited and certified inspector oversaw the inspection, collection of samples and made assessment:



\_\_\_\_\_  
David C. Roskelley  
Lead-Based Paint Inspector  
State of Utah, Division of Air Quality  
Certification Number: PB-1041  
Certified Safety Professional #15774  
Certified Industrial Hygienist #8529

\_\_\_\_\_  
October 17, 2014

Date

This report was reviewed by:



\_\_\_\_\_  
David C. Roskelley, MSPH, CIH, CSP  
Lead-Based Paint Inspector  
State of Utah, Division of Air Quality  
Certification Number: PB-1041  
Certified Safety Professional #15774  
Certified Industrial Hygienist #8529

\_\_\_\_\_  
October 17, 2014

Date

**BUILDING DESCRIPTION**

Building Identification

Building Name ..... Miller Administration Building  
Building Address ..... 3848 Harrison Blvd, Ogden, Utah 84403

Building Construction

Building Construction Date ..... 1960's  
Building Type ..... Offices  
Building Total Sq. Ft..... 24,843  
Structural System ..... Concrete  
Exterior Wall Construction ..... Masonry  
Floor Deck Construction ..... Concrete  
Roof Construction ..... Flat, Membrane  
Floors Above Grade ..... 2  
Floors Below Grade ..... 1

Interior Finishes

Floors ..... Carpet, Ceramic, Vinyl Flooring  
Walls ..... Wall System, Plaster, Wood  
Attic..... None  
Crawl space ..... None

Building Mechanical

Heating Plant..... Hot Water  
Main Heating Distribution ..... Forced Air  
Cooling Plant ..... Chilled Water  
Main A / C Distribution ..... Forced Air

### **3.0 LEAD-BASED PAINT DEFINITIONS**

HUD defines “lead-based paint” as any coating that has a lead concentration of 1.0 milligram of lead per square centimeter ( $1.0 \text{ mg/cm}^2$ ) or greater, or if the lead concentration is greater than 0.5% by weight. The Consumer Product Safety Commission (CPSC) currently considers paint to be lead-containing if the concentration of lead exceeds 600 ppm (0.06% by weight). In 1978, the CPSC banned the sale of lead-based paint to consumers, and banned its application in areas where consumers have direct access to painted surfaces. Both the CPSC and HUD definitions of lead-containing paint are aimed at protecting the general population from exposure to lead in the residential setting.

By contrast, the mission of the Occupational Safety and Health Administration (OSHA) with respect to lead-containing paint, is to protect workers during construction activities that may generate elevated airborne lead concentrations. OSHA states that construction work (including renovation, maintenance, and demolition) carried-out on structures coated with paint have lead concentrations lower than the HUD or CPSC can still result in airborne lead concentrations in excess of regulatory limits. For this reason, OSHA has not defined lead-containing paint, but states that paint having any measurable level of lead may pose a substantial exposure hazard during construction work, depending upon the work performed.

## **2.0 PROCEDURES**

### **2.1 Paint Sampling Methodologies**

Direct measurements of lead in paint were made using a Niton 300 XLp Series X-ray Fluorescence (XRF) Spectrum Analyzer. The Niton 300 XLp Lead Paint Analyzer non-destructively measures lead concentrations of painted surfaces, regardless of the number of layers present. These instruments were developed specifically for addressing lead-based paint issues in housing and their use in identifying potential exposure hazards for renovation or construction work must be augmented by selective collection and analysis of physical paint chip samples.

The newer XRF instruments are capable of identifying lead in paint at concentrations of about 0.3 milligram per square centimeter ( $\text{mg/cm}^2$ ) or greater. When lead concentrations are lower than this, the instruments are not capable of making accurate, reliable measurements, and the reported lead concentration may underestimate or overestimate the actual lead concentration in the paint. Therefore, an XRF readings of  $0.4 \text{ mg/cm}^2$  or greater may be considered lead-containing from an OSHA perspective, and any readings of  $0.3 \text{ mg/cm}^2$  or less should be confirmed by the collection and laboratory analysis of paint chip samples, or assumed to be positive for lead.

Where paint chip samples are necessary, samples are collected according to the protocol specified in the HUD Guidelines. The samples are then submitted to a laboratory recognized under the EPA's National Lead Laboratory Accreditation Program (NLLAP)

for analysis by flame atomic absorption spectrophotometry according to American Society of Testing and Materials (ASTM) method ASTM E 1645.

## **2.2 XRF Calibration**

Before beginning the testing and after the testing was completed, the internal calibration of the Niton XLp 300 was checked by taking three consecutive measurements on a National Institute for Standards and Technology (NIST) standard with a known concentration of lead. These calibration checks are reported within the XRF data tables found in Appendix A of this report and are maintained in a file at R & R Environmental, Inc. to detect changes in instrument performance over time.

## **2.3 Lead Paint Inspection Data Tables**

The XRF instrument generates a unique set of data tables for each inspection and can be exported into Microsoft Excel Spreadsheet format .xls. The Sequential Report lists the measurements made throughout the property in sequential order, from the first measurement to the last. The Data table is maintained in a file at R & R Environmental, Inc.

## **3.0 FINDINGS**

The XRF instrument indicated that lead is present on interior surfaces that were tested. Lead is not present on exterior surfaces. These surfaces are listed in Table 1 "positive" building components (Measurements of 0.3 mg/cm<sup>2</sup> and above) in Appendix A of this report:

### **Interior**

- Metal Window Frames
- Metal Door Frames
- Metal Wall Trim
- Yellow Ceramic Wall Tiles

Since lead has been detected in some of the building's painted surfaces, the OSHA Lead in Construction Standard (29 CFR 1926.62) would apply to any construction work (including renovation and demolition) that may disturb those surfaces. The standard requires, among other things, the following:

- Initial training on the hazards of lead exposure, proper work practices, respiratory protection, and other topics;
- An initial exposure assessment, by air monitoring, to determine the lead exposure assessment, until sample analysis indicates exposures below the Permissible Exposure Limit;
- Hand washing facilities, designated clean change areas, and designated eating areas.

In addition to the above considerations, the presence of lead in demolition debris has the potential to impose limitations on where and how the debris may be disposed. The Resource Conservation and Recovery Act (RCRA), Subtitles C and D, require that the waste must be analyzed to determine the amount of leachable lead present. The type of test to be performed on the waste is the Toxicity Characteristic Leaching Procedure (TCLP) for lead, and the results of this test will determine whether the material must be handled and disposed of as hazardous waste. For structures containing large amounts of lead-containing paint, significant potential for failing the TCLP exists.

#### **4.0 RESULTS AND RECOMMENDATIONS**

Lead-based paint was found on exterior and interior components of the building. The lead-based paint on these components is intact.

#### **5.0 LIMITATIONS AND EXCLUSIONS OF WARRANTY**

This lead inspection was performed using procedures and a level of diligence typically exercised by professional consultants performing similar services. However, lead-based paint (LBP) can be present in a surface, but not identified using ordinary investigative procedures.

No lead inspection can completely eliminate uncertainty regarding the presence of LBP. R & R Environmental, Inc. level of diligence and investigative procedures are intended to reduce, but not eliminate, potential uncertainty regarding the presence of LBP. The procedures used for this survey attempt to establish a balance between the competing goals of limiting investigative costs, time, and building damage, and reducing the uncertainty about unknown conditions. Therefore, the determinations in this report should not be construed as a guarantee that all LBP present in the subject property has been included in this report.

This report presents R & R Environmental, Inc.'s professional determinations, which are dependent upon information obtained during performance of consulting services. R & R Environmental, Inc. assumes no responsibility for omissions or errors resulting from inaccurate information provided by sources outside of R & R Environmental, Inc.

No warranty or guarantee, expressed or implied, is made regarding the findings, conclusions, or recommendations contained in this report. The limitations presented above supersede the requirements or provisions of all other contracts or scopes of work, implied or otherwise, except those stated or acknowledged herein.

Appendix A

**Lead Paint Inspection Data Tables**

# Table 1

## Building Components with Lead Levels at 0.3 mg/cm<sup>2</sup> and Above Weber State University Miller Administration Building

Room	Floor	Sample Number	Lead Level (mg/cm <sup>2</sup> )	Component	Side (1)	Substrate	Color	Condition
204	SECOND	27	0.3	TRIM	D	METAL	BROWN	INTACT
213 A MENS RR	SECOND	58	0.3	DOOR FRAME	D	METAL	BROWN	INTACT
204	SECOND	21	0.4	DOOR Frame	A	METAL	PINK	INTACT
				Interior Window				
204	SECOND	30	0.4	Frame	D	METAL	BROWN	INTACT
308	THIRD	116	0.4	DOOR FRAME	C	METAL	BROWN	INTACT
		126	0.4		CALIBRATE			
		1	0.49		CALIBRATE			
207E	SECOND	42	0.5	DOOR FRAME	C	METAL	BROWN	INTACT
		34	0.56		CALIBRATE			
STAIRS	SECOND	51	0.6	DOOR FRAME	D	METAL	BROWN	INTACT
STAIRS	SECOND	52	0.6	DOOR FRAME	D	METAL	BROWN	INTACT
308	THIRD	119	0.6	DOOR FRAME	A	METAL	TAN	INTACT
		2	1	calibrate				
		3	1	calibrate				
		4	1	calibrate				
		129	1		CALIBRATE			
		130	1		CALIBRATE			
		131	1		CALIBRATE			
315 WOMEN	THIRD	124	4.6	WALL	D	CERAMIC	YELLOW	INTACT
213 A MENS RR	SECOND	59	5.7	WALL	D	CERAMIC	YELLOW	INTACT

Note 1: A=North, B=East, C=South, D=West

## Table 2

### Building Components with Lead Levels Below 0.3 mg/cm<sup>2</sup> Weber State University Miller Administration Building

Room	Floor	Sample Number	Lead Level (mg/cm <sup>2</sup> )	Component	Side (1)	Substrate	Color	Condition
OUTSIDE	FIRST	5	0	Gate	A	METAL	Black	POOR
OUTSIDE	FIRST	6	0	Gate	A	METAL	Black	POOR
OUTSIDE	FIRST	7	0	DOOR	A	METAL	Black	INTACT
OUTSIDE	FIRST	8	0	WINDOW	A	METAL	Black	INTACT
OUTSIDE	FIRST	11	0	Fuel Storage Door	A	METAL	Black	POOR
OUTSIDE	FIRST	13	0	Pipe	A	METAL	Black	POOR
OUTSIDE	FIRST	14	0	Pipe	A	METAL	Black	POOR
OUTSIDE	FIRST	15	0	DOOR	C	METAL	BROWN	POOR
OUTSIDE	FIRST	16	0	WINDOW	C	METAL	BROWN	POOR
Entry	FIRST	17	0	Chair Rail	A	WOOD	BROWN	INTACT
Entry	FIRST	18	0	WALL	B	Wall Paper	WHITE	INTACT
Hallway	SECOND	19	0	WALL	B	Stone	BROWN	INTACT
204	SECOND	20	0	DOOR	A	WOOD	BROWN	INTACT
						DRYWAL		
204	SECOND	22	0	WALL	A	L	WHITE	INTACT
204F	SECOND	24	0	DOOR	D	WOOD	BROWN	INTACT
						DRYWAL		
204	SECOND	25	0	WALL	D	L	WHITE	INTACT
						DRYWAL		
204	SECOND	26	0	WALL	D	L	WHITE	INTACT
204N	SECOND	28	0	Door Frame	D	METAL	BROWN	INTACT
204N	SECOND	29	0	DOOR	D	WOOD	BROWN	INTACT
						DRYWAL		
204	SECOND	31	0	WALL	D	L	WHITE	INTACT
204 Q	SECOND	32	0	DOOR Frame	D	METAL	BROWN	INTACT
204 Q	SECOND	33	0	DOOR	A	WOOD	BROWN	INTACT
200	SECOND	35	0	CABINET	B	WOOD	TAN	INTACT
200	SECOND	36	0	CABINET	B	WOOD	TAN	INTACT
						DRYWAL		
200	SECOND	37	0	WALL	B	L	PURPLE	INTACT
207A	SECOND	38	0	DOOR	A	WOOD	BROWN	INTACT
207A	SECOND	40	0	CABINET	C	WOOD	BROWN	INTACT
207A	SECOND	41	0	CABINET	C	WOOD	BROWN	INTACT
						DRYWAL		
200	SECOND	43	0	WALL	B	L	TAN	INTACT
NORTH ENTY	SECOND	44	0	WALL OF HONOR	A	WOOD	BROWN	INTACT
NORTH ENTY	SECOND	45	0	WALL OF HONOR	A	WOOD	BROWN	INTACT
NORTH ENTY	SECOND	46	0	WALL OF HONOR	A	WOOD	BROWN	INTACT
211K	SECOND	47	0	DOOR	B	WOOD	BROWN	INTACT
211K	SECOND	48	0	DOOR FRAME	B	METAL	BROWN	INTACT
211K	SECOND	49	0	DOOR FRAME	B	METAL	BROWN	INTACT
						DRYWAL		
211K	SECOND	50	0	WALL	A	L	WHITE	INTACT
STAIRS	SECOND	53	0	WALL	D	PLASTER	WHITE	INTACT
STAIRS	SECOND	54	0	WALL	A	PLASTER	WHITE	INTACT
STAIRS	SECOND	55	0	DOOR	A	WOOD	BROWN	INTACT
STAIRS	SECOND	56	0	HAND RAIL	A	WOOD	BROWN	INTACT
213 A MENS RR	SECOND	57	0	DOOR	D	WOOD	BROWN	INTACT
213 A MENS RR	SECOND	60	0	FLOOR	D	CERAMIC	YELLOW	INTACT
STAIRS	FIRST	61	0	WALL	D	PLASTER	WHITE	INTACT
NORTH ENTRY	FIRST	62	0	CHAIR RAIL	B	WOOD	BROWN	INTACT
101	FIRST	63	0	DOOR FRAME	B	METAL	BROWN	INTACT
						DRYWAL		
101	FIRST	64	0	WALL	B	L	WHITE	INTACT
						DRYWAL		
101	FIRST	65	0	WALL	A	L	WHITE	INTACT
101	FIRST	66	0	DOOR FRAME	C	METAL	BROWN	INTACT
						CONCRET		
101	FIRST	67	0	WALL	A	E	WHITE	INTACT

Room	Floor	Sample Number	Lead Level (mg/cm <sup>2</sup> )	Component	Side (1)	Substrate	Color	Condition
NORTH ENTRY	FIRST	68	0	CEILING	A	DRYWAL		
NORTH ENTRY	FIRST	69	0	TRIM	B	L	WHITE	INTACT
NORTH ENTRY	FIRST	70	0	TRIM	D	WOOD	WHITE	INTACT
SPONSORED PROJECTS	FIRST	71	0	WALL	C	WOOD	BROWN	INTACT
SPONSORED PROJECTS	FIRST	72	0	WALL	D	DRYWAL		
SPONSORED PROJECTS	FIRST	73	0	DOOR FRAME	A	L	TAN	INTACT
SPONSORED PROJECTS	FIRST	74	0	DOOR FRAME	A	DRYWAL		
102E	FIRST	75	0	DOOR FRAME	B	L	PURPLE	INTACT
102	FIRST	76	0	CABINET	B	METAL	BLACK	INTACT
103	FIRST	77	0	DOOR FRAME	B	METAL	BLACK	INTACT
103	FIRST	78	0	WALL	B	DRYWAL		
103	FIRST	79	0	WALL	D	L	WHITE	INTACT
103B	FIRST	80	0	DOOR	D	WOOD	BROWN	INTACT
103B	FIRST	81	0	DOOR FRAME	B	METAL	BLACK	INTACT
103	FIRST	82	0	WALL	B	DRYWAL		
103F	FIRST	83	0	CABINET	D	L	WHITE	INTACT
103	FIRST	84	0	WALL	C	WOOD	GRAY	INTACT
103	FIRST	85	0	DOOR	C	DRYWAL		
103	FIRST	86	0	DOOR FRAME	C	L	WHITE	INTACT
103	FIRST	87	0	CEILING	C	WOOD	BROWN	INTACT
103	FIRST	88	0	COLUMN	C	METAL	BLACK	INTACT
104	FIRST	89	0	DOOR FRAME	A	DRYWAL		
104	FIRST	90	0	WALL	A	L	WHITE	INTACT
104	FIRST	91	0	WALL	C	CONCRET		
104	FIRST	92	0	WALL	C	E	WHITE	INTACT
107	FIRST	93	0	WALL	D	CONCRET		
107	FIRST	94	0	WALL	D	E	WHITE	INTACT
107	FIRST	95	0	WALL	D	CERAMIC	PURPLE	INTACT
107	FIRST	96	0	WALL	D	CERAMIC	PURPLE	INTACT
107	FIRST	97	0	FLOOR	D	CERAMIC	GRAY	INTACT
107	FIRST	98	0	CEILING	D	CERAMIC	GRAY	INTACT
105	FIRST	99	0	DOOR FRAME	C	DRYWAL		
105	FIRST	100	0	DOOR	C	L	WHITE	INTACT
105	FIRST	101	0	WALL	C	METAL	BLACK	INTACT
HALLWAY	THIRD	102	0	WALL	C	WOOD	BROWN	INTACT
HALLWAY	THIRD	103	0	TRIM	C	WOOD	BROWN	INTACT
HALLWAY	THIRD	104	0	BASEBOARD	C	WOOD	BROWN	INTACT
HALLWAY	THIRD	105	0	TRIM	C	WOOD	BROWN	INTACT
HALLWAY	THIRD	106	0	TRIM	C	WOOD	BROWN	INTACT
SE OFFICES	THIRD	107	0	DOOR	A	WOOD	BROWN	INTACT
302	THIRD	108	0	WALL	A	DRYWAL		
302	THIRD	109	0	DOOR FRAME	A	L	WHITE	INTACT
302	THIRD	110	0	DOOR	A	METAL	BROWN	INTACT
302	THIRD	111	0	WALL	C	WOOD	BROWN	INTACT
302	THIRD	112	0	CABINET	C	DRYWAL		
302	THIRD	113	0	CABINET	C	L	WHITE	INTACT
302C	THIRD	114	0	WALL	C	WOOD	BROWN	INTACT
302	THIRD	115	0	RADIATOR	C	WOOD	BROWN	INTACT
308	THIRD	117	0	WALL	C	CERAMIC	BROWN	INTACT
308	THIRD	118	0	WALL	A	METAL	WHITE	INTACT
308	THIRD	120	0	CABINET	D	METAL	TAN	INTACT
308	THIRD	120	0	CABINET	D	WOOD	WHITE	INTACT

Room	Floor	Sample Number	Lead Level (mg/cm <sup>2</sup> )	Component	Side (1)	Substrate	Color	Condition
308	THIRD	121	0	CABINET	D	WOOD	WHITE	INTACT
308	THIRD	122	0	WALL	D	DRYWALL	PURPLE	INTACT
WEST HALL	THIRD	123	0	WALL	D	PAPER	BROWN	INTACT
315 WOMEN	THIRD	125	0	FLOOR	D	CERAMIC	YELLOW	INTACT
OUTSIDE	FIRST	9	0.01	Hand rail	A	METAL	Black	POOR
OUTSIDE	FIRST	10	0.01	Hand rail	A	METAL	Black	POOR
OUTSIDE	FIRST	12	0.01	Door Frame	A	METAL	Black	POOR
204	SECOND	23	0.03	WINDOW	D	METAL	BROWN	INTACT
MECHANICAL	FIRST	128	0.1	PIPE	C	METAL	WHITE	POOR
MECHANICAL	FIRST	127	0.25	PIPE	C	METAL	WHITE	POOR
207A	SECOND	39	0.28	DOOR FRAME	A	METAL	BROWN	INTACT

Note 1: A=North, B=East, C=South, D=West

**HAZARDOUS MATERIALS INSPECTION  
FOR THE  
MILLER ADMINISTRATION BUILDING  
WEBER STATE UNIVERSITY  
OGDEN, UTAH 84403**

**DFCM PROJECT NUMBER: 13079300**



**WEBER STATE UNIVERSITY**

**October 20, 2014**

**Prepared for:**



State of Utah—Department of Administrative Services

**DIVISION OF FACILITIES CONSTRUCTION  
AND MANAGEMENT**

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# Hazardous Materials Inspection

## Miller Administration Building Weber State University Ogden, Utah

During October 2014, Steve Smith of R & R Environmental, Inc., conducted a hazardous materials inspection of the Miller Administration Building located at Weber State University, Ogden, Utah. The purpose of this survey was to identify the existence, extent, and condition of hazardous materials. The inspection was conducted based on an agreement with Mr. Robert J. Anderson, State of Utah Division of Facility Construction and Management (DFCM), Hazardous Material Manager.

Hazardous materials requiring proper removal and disposal was identified at the Miller Administration Building, Weber State University, Ogden, Utah as follows:

<b>Material</b>	<b>Location</b>	<b>Quantity</b>	<b>Unit Cost</b>
PCB Ballast	Throughout	609 units	\$2.00 / lbs. (avg. 5 lbs. / unit)
Fluorescent Light	Throughout	1,462 tubes	\$0.50 / linear foot
Refrigeration Units	Throughout	2 Units	\$1,200.00 / unit
Thermostats	Throughout	108	\$75.00 / unit

The State of Utah's DFCM policy requires the items above to be removed and disposed of at a facility approved to accept such waste prior to demolition. This may or may not be applied to the city of Ogden, Weber County, but R & R Environmental, Inc. recommends removal and proper disposal of these components prior to any demolition activities.

The cost estimate to remove and dispose of these hazardous materials is estimated at approximately **\$17,321.00**. This cost estimate does not include transportation, removal, design, or management fees associated with dismantling and packaging the materials.

WSU Miller Administration  
MEP Upgrade  
Addendum #2  
Attachment A2-3

SECTION 064600 - WOOD TRIM

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Interior standing and running trim.
  2. Shop finishing of wood trim.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product, including fire-retardant-treated materials and finishing materials and processes.
- B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
- C. Samples:
1. Lumber for transparent finish, for each species and cut, finished on one side and one edge.

1.3 FIELD CONDITIONS

- A. Environmental Limitations for Interior Work: Do not deliver or install interior wood trim until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

PART 2 - PRODUCTS

2.1 WOOD TRIM, GENERAL

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of wood trim indicated for construction, finishes, installation, and other requirements.

2.2 INTERIOR STANDING AND RUNNING TRIM FOR TRANSPARENT FINISH

- A. Grade: Custom.
- B. Wood Species and Cut: Match species and cut indicated for other types of transparent-finished architectural woodwork located in same area of building unless otherwise indicated.

1. Species: (Match existing hardwood in the room. Verify at Site).
2. Cut: (Match existing hardwood in the room. Verify at Site).

## 2.3 WOOD MATERIALS

- A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of wood trim and quality grade specified unless otherwise indicated.

1. Wood Moisture Content for Interior Materials: 5 to 10 percent.

## 2.4 MISCELLANEOUS MATERIALS

- A. Interior Furring, Blocking, Shims, and Hanging Strips: Fire-retardant-treated softwood lumber, kiln dried to less than 15 percent moisture content.

- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.

- C. Adhesives: Do not use adhesives that contain urea formaldehyde.

- D. VOC Limits for Installation Adhesives and Sealants: Use products that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Wood Glues: 30 g/L.
2. Multipurpose Construction Adhesives: 70 g/L.
3. Structural Wood Member Adhesive: 140 g/L.
4. Architectural Sealants: 250 g/L.

## 2.5 FABRICATION

- A. Fabricate wood trim to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:

1. Edges of Solid-Wood (Lumber) Members: 1/16 inch (1.5 mm) unless otherwise indicated.

- B. Backout or groove backs of flat trim members and kerf backs of other wide, flat members except for members with ends exposed in finished work.

## 2.6 SHOP PRIMING

- A. Interior Wood Trim for Transparent Finish: Shop seal with stain (if required), other required pretreatments, and first coat of finish as specified in Section 099300 "Staining and Transparent Finishing."

- B. Preparations for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing wood trim, as applicable to each unit of work.
  - 1. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of wood trim. Apply two coats to surfaces installed in contact with concrete or masonry and to end-grain surfaces.

## 2.7 SHOP FINISHING

- A. General: Finish wood trim at fabrication shop as specified in this Section. Defer only final touchup, cleaning, and polishing until after installation.
- B. Preparation for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing wood trim, as applicable to each unit of work.
  - 1. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of wood trim. Apply two coats to end-grain surfaces.
- C. Transparent Finish for Interior Trim:
  - 1. Grade: Custom.
  - 2. Finish: System - 4, water-based latex acrylic.
  - 3. Wash Coat for Closed-Grain Woods: Apply wash-coat sealer to woodwork made from closed-grain wood before staining and finishing.
  - 4. Staining: Match approved sample, (that matches existing building wood panels), for color.
  - 5. Sheen: Satin, 31-45 gloss units measured on 60-degree gloss meter per ASTM D 523.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Before installation, condition wood trim to average prevailing humidity conditions in installation areas.

### 3.2 INSTALLATION

- A. Grade: Install wood trim to comply with same grade as item to be installed.
- B. Install wood trim level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm).
- C. Scribe and cut wood trim to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

- D. Anchor wood trim to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork.
  - 1. For shop-finished items, use filler matching finish of items being installed.
- E. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Do not use pieces less than 36 inches (900 mm)] long except where shorter single-length pieces are necessary. Scarf running joints and stagger in adjacent and related members.
  - 1. Install standing and running trim with no more variation from a straight line than 1/8 inch in 96 inches (3 mm in 2400 mm).

END OF SECTION 064600

MARK	PRODUCT	MANUFACTURER	DESCRIPTION
	<b>CARPET</b>		
CPT-1	TILE	SHAW	18"X36", QUARTZ TILE 5T017 SMOKY QUARTZ 14761, DIRECT GLUE
CPT-2	TILE	SHAW	18"x36", BLUR TILE 59596 SHADED 95585, DIRECT GLUE
CPT-3	WALK-OFF TILE	J+J INVISION	24"X24", CATWALK 7010 SPOTLIGHT 1427, DIRECT GLUE
CPT-4	BROADLOAM	SHAW	HIGHLIGHT 60735 EGGPLANT 35990
	<b>RUBBER</b>		
R-1	RUBBER STAIR SYSTEM	ROPPE	SAFETCORK, COLOR: TBD
R-2	RUBBER FLOOR LANDING	ROPPE	20" X 20", SAFETCORK, COLOR: TBD
R-2	RUBBER FLOOR ACCENT	ROPPE	SAFETCORK, COLOR: TBD
	<b>TILE</b>		
T-1	PORCELAIN FLOOR TILE	MARAZZI	2"X4" BRICK, ESSENTIALS GREY MOSAIC
T-2	CERAMIC WALL TILE	CONTEMPO TILE	5"X7", CENTO W-MATTE
T-3	CERAMIC WALL TILE	CONTEMPO TILE	5"X7", CENTO W-GLOSS
T-4	CERAMIC WALL TILE	CONTEMPO TILE	5"X7", CENTO DG-MATTE
T-5	CERAMIC WALL TILE	CONTEMPO TILE	5"X7", CENTO DG-GLOSS
T-6	CERAMIC WALL TILE	CONTEMPO TILE	5"X7", CENTO VA-GLOSS
	<b>GROUT</b>		
G-1	FLOOR GROUT	MAPEI	FLEXCOLOR CQ, 47 CHARCOAL
G-2	WALL GROUT	MAPEI	FLEXCOLOR CQ, 00 WHITE
	<b>BASE/TRANSITIONS</b>		
B-1	RUBBER BASE	ROPPE	700 SERIES TYPE TP/TRADITIONAL WALL BASE, 100 BLACK
B-2	TILE BASE	CONTEMPO TILE	5"X7", CENTO W-MATTE
B-3	RUBBER STAIR STRINGER	ROPPE	10", COLOR: 100 BLACK
B-4	RUBBER BASE	MATCH EXISTING	MATCH EXISTING
TR-1	TRANSITION STRIP	ROPPE	VINYL REDUCER #160, 100 BLACK
	<b>PAINT</b>		
P-1	WALL PAINT	SHERWIN WILLIAMS	COLOR: SW7006 EXTRA WHITE, SEMI-GLOSS
P-2	WALL PAINT	SHERWIN WILLIAMS	COLOR: SW6150 UNIVERSAL KHAKI, SEMI-GLOSS
P-3	H.M. FRAME PAINT	SHERWIN WILLIAMS	COLOR: SW6990 CAVIAR, SEMI-GLOSS
P-4	WALL PAINT	SHERWIN WILLIAMS	COLOR: WEBER STATE PURPLE, SEMI-GLOSS
P-5	WALL PAINT	SHERWIN WILLIAMS	COLOR: MATCH EXISTING, MATCH EXISTING
	<b>WALL COVERING</b>		
WC-1	WALL COVERING	KOROSEAL	MOJAVE II 1651, BLIZZARD WHITE 00
WC-2	WALL COVERING	KOROSEAL	VECTOR V121, SPECTRUM 69

	<b>SOLID SURFACE</b>		
SS-1	SOLID SURFACE	WILSONART	FROSTY WHITE MIRAGE 1573MG (2)
	<b>ACOUSTICAL</b>		
AC-1	ACOUSTICAL CEILING TILE	USG	24"X24"X3/4", ECLIPSE CLIMAPLUS, SLT -76775 - ANGLED TEGULAR
AC-2	ACOUSTICAL CEILING TILE	USG	24"X24"X7/8", RADAR EDUCATION SQ - 22421

SECTION 090000 – FINISH SCHEDULE

END OF SECTION

WSU Miller Administration  
MEP Upgrade  
Addendum #2  
Attachment A2-5

SECTION 097200 - WALL COVERINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Vinyl wall covering.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each type of wall covering and for each color, pattern, texture, and finish specified, full width by 36-inch- (914-mm-) long in size.

1.3 INFORMATIONAL SUBMITTALS

- A. Product test reports.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance data.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics: As determined by testing identical wall coverings applied with identical adhesives to substrates according to test method indicated below by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
1. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
    - a. Flame-Spread Index: 25 or less.
    - b. Smoke-Developed Index: 450 or less.

2.2 VINYL WALL COVERING "WC-1"

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
1. Koroseal. (Refer to Finish Schedule for product identification).

- B. Description: Provide products in rolls from same production run and complying with the following:
  - 1. FS CCC-W-408D for Type II, Medium-Duty products.
  - 2. ASTM F 793 for strippable wall coverings.
- C. Width: 53/54 inches.
- D. Backing: Osnaburg fabric.
- E. Repeat: Random Match, Reverse Hang.
- F. Colors, Textures, and Patterns: Match Architect's samples.

### 2.3 VINYL WALL COVERING "WC-2"

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
  - 1. Koroseal. (Refer to Finish Schedule for product identification).
- B. Description: Provide products in rolls from same production run and complying with the following:
  - 1. FS CCC-W-408D for Type II, Medium-Duty products.
  - 2. ASTM F 793 for strippable wall coverings.
- C. Width: 52/54 inches.
- D. Backing: Non-Woven Fabric.
- E. Repeat: Random Match, Reverse Hang.
- F. Colors, Textures, and Patterns: Match Architect's samples.

### 2.4 ACCESSORIES

- A. Adhesive: Heavy-Duty, mildew-resistant, nonstaining, strippable adhesive, for use with specific wall covering and substrate application indicated and as recommended in writing by wall-covering manufacturer.
  - 1. Adhesive shall have a VOC content of 50> g/L or less.
- B. Primer/Sealer: Mildew resistant, complying with requirements in Section 099123 "Interior Painting" and recommended in writing by primer/sealer and wall-covering manufacturers for intended substrate.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Comply with manufacturer's written instructions for surface preparation.
- B. Clean substrates of substances that could impair bond of wall covering, including dirt, oil, grease, mold, mildew, and incompatible primers.
- C. Prepare substrates to achieve a smooth, dry, clean, structurally sound surface free of flaking, unsound coatings, cracks, and defects.
  - 1. Moisture Content: Maximum of 5 percent on new plaster, concrete, and concrete masonry units when tested with an electronic moisture meter.
  - 2. Metals: If not factory primed, clean and apply primer recommended in writing by primer/sealer manufacturer and wall-covering manufacturer.
  - 3. Gypsum Board: Prime with primer as recommended in writing by primer/sealer manufacturer and wall-covering manufacturer.
  - 4. Painted Surfaces: Treat areas susceptible to pigment bleeding.
- D. Check painted surfaces for pigment bleeding. Sand gloss, semigloss, and eggshell finish with fine sandpaper.
- E. Remove hardware and hardware accessories, electrical plates and covers, light fixture trims, and similar items.
- F. Acclimatize wall-covering materials by removing them from packaging in the installation areas not less than 24 hours before installation.

### 3.2 WALL-COVERING INSTALLATION

- A. Comply with wall-covering manufacturers' written installation instructions applicable to products and applications indicated.
- B. Cut wall-covering strips in roll number sequence. Change the roll numbers at partition breaks and corners.
- C. Install strips in same order as cut from roll.
- D. Install wall covering without lifted or curling edges and without visible shrinkage.
- E. Install seams vertical and plumb at least 6 inches (150 mm) from outside corners and [3 inches (75 mm)] [6 inches (150 mm)] from inside corners unless a change of pattern or color exists at corner. Horizontal seams are not permitted.
- F. Trim edges and seams for color uniformity, pattern match, and tight closure. Butt seams without overlaps or gaps between strips.
- G. Fully bond wall covering to substrate. Remove air bubbles, wrinkles, blisters, and other defects.
- H. Remove excess adhesive at seams, perimeter edges, and adjacent surfaces.

- I. Reinstall hardware and hardware accessories, electrical plates and covers, light fixture trims, and similar items.

END OF SECTION 097200

SECTION 123661 - SIMULATED STONE COUNTERTOPS

PART 1 - GENERAL

WSU Miller Administration  
MEP Upgrade  
Addendum #2  
Attachment A2-6

1.1 SUMMARY

- A. Section Includes:
1. Solid-surface-material countertops.

1.2 ACTION SUBMITTALS

- A. Product Data: For countertop materials.
- B. Shop Drawings: For countertops. Show materials, finishes and edge profiles, methods of joining, and cutouts for plumbing fixtures.
- C. Samples: For each type of material exposed to view.

PART 2 - PRODUCTS

2.1 SOLID-SURFACE-MATERIAL COUNTERTOPS

- A. Configuration: Provide countertops with the following front and backsplash style:
1. Front: Straight, 1/4" round at top.
- B. Countertops: 1/2-inch (12.7-mm) thick, solid surface material with vertical front edge with same material.

2.2 COUNTERTOP MATERIALS

- A. Plywood: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.
- B. Adhesives: Adhesives shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- C. Solid Surface Material: Homogeneous solid sheets of filled plastic resin complying with ANSI SS1.
1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated in Finish Schedule or comparable product by one of the following:
    - a. E. I. du Pont de Nemours and Company.
    - b. Formica Corporation.

- c. Wilsonart LLC\_ (Basis of Design)
  - 2. Type: Provide Standard Type unless Special Purpose Type is indicated.
  - 3. Colors and Patterns: As indicated in Specification Division 090000 "Finish Schedule."

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.

END OF SECTION 123661





Consultant

**GENERAL DEMOLITION NOTES**

- DEMOLITION WORK WITHIN THE EXISTING BUILDING WILL NOT COMMENCE BEFORE MAY 01, 2015.
- THE CONTRACTOR TO INSTALL FLEXBOARD OVER ALL FLOOR MATERIAL TO REMAIN, TO PROTECT SURFACES FROM CONSTRUCTION DEBRIS AND PROJECT WORK. 45 MIL MINIMUM THICKNESS. TAPE ALL JOINTS. CLEAN CARPET IF NECESSARY AT COMPLETION OF CONSTRUCTION.
- THE CONTRACTOR TO MOVE ALL EXISTING FURNITURE A MINIMUM OF (3) FEET FROM WALLS IN EACH ROOM. WRAP THE PERIMETER OF FURNITURE WITH 60 GAUGE STRETCH WRAP FILM A MINIMUM OF (2) WRAPS. COVER FURNITURE TOPS WITH 6 MIL PLASTIC AND WRAP PERIMETER WITH (2) MORE LAYERS OF 60 GAUGE STRETCH WRAP TO SEAL.
- ALL EXISTING ARTWORK TO BE REMOVED BY WSU.
- CONTRACTOR TO REMOVE ALL SIGNAGE IN CORRIDORS NOT INDICATED TO BE REINSTALLED. (COORDINATE WITH OWNER).
- THE CONTRACTOR MUST FIELD VERIFY ALL DIMENSIONS AND CONDITIONS INCLUDING EXISTING UTILITIES PRIOR TO BIDDING AS THE LOCATIONS SHOWN IN THE DOCUMENTS ARE APPROXIMATED. ALL VARIANCES NOT SHOWN IN THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO BID.
- CONTRACTOR TO COORDINATE WITH ELECTRICAL, MECHANICAL AND FIRE PROTECTION PLANS FOR LOCATIONS OF ALL EXISTING AND NEW EQUIPMENT, SYSTEMS, AND DEVICES.
- AS SOME DEMOLITION WORK WILL BE SPECIFIC TO DIVISION 22, 23, 24, THE CONTRACTOR SHALL CROSS REFERENCE WITH ELECTRICAL AND MECHANICAL PLANS FOR ADDITIONAL DEMOLITION WHICH IS REQUIRED, BUT NOT REFLECTED ON ARCHITECTURAL DRAWINGS.
- CONTRACTOR TO COORDINATE WITH ELECTRICAL, MECHANICAL AND FIRE PROTECTION PLANS FOR LOCATIONS OF ALL EXISTING AND NEW EQUIPMENT, SYSTEMS, AND DEVICES.
- ALL EXISTING INTERIOR FINISHES, MATERIALS, STRUCTURE, SYSTEMS, LANDSCAPING, AND SITE FEATURES, ETC., NOT IDENTIFIED FOR DEMOLITION THAT ARE DAMAGED DURING THE PROCESS OF CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR REPLACED TO MATCH AT THE CONTRACTORS EXPENSE.
- CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL FLOORING, WALLS & CEILING SYSTEMS AS SHOWN ON THE DRAWINGS.
- ALL EXISTING FINISHED SURFACES DAMAGED DUE TO WORK UNDER THIS CONTRACT SHALL BE PATCHED & FINISHED TO MATCH EXISTING ADJACENT SURFACES.
- PATCH & LEVEL EXISTING CONCRETE SLABS AS REQUIRED FOR NEW FINISHES WITH FLOOR LEVELING COMPOUND AS APPROVED BY ARCHITECT.
- THE GENERAL CONTRACTOR SHALL BRING TO THE ATTENTION OF THE ARCHITECT FOR IMMEDIATE RESOLUTION, ANY CODE VIOLATIONS, INCORRECT CONSTRUCTIONS OR SAFETY PROBLEMS THAT ARE EXISTING FIELD CONDITIONS.
- THE GENERAL CONTRACTOR IS RESPONSIBLE TO COORDINATE SCOPE IN REMODEL AS INDICATED ON ALL ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND FIRE PROTECTION SHEETS AND COORDINATE AND PROVIDE DEMOLITION AS NEEDED. WORK AS DESCRIBED FOR REMODEL THAT IS IN CONFLICT WITH EXISTING CONDITION IS TO BE BROUGHT TO THE ATTENTION OF ARCHITECT PRIOR TO DEMOLITION.
- REMOVE EXISTING RED IRON CEILING TILE SUSPENDED GRID SUPPORT SYSTEM.
- EXISTING METAL SUSPENDED GRID PERIMETER WALL ANGLES CAN BE REUSED IF IN GOOD CONDITION AND NOT DAMAGED FROM DEMOLITION. PROVIDE ADDITIONAL ANCHORAGE SUPPORT FOR NEW SEISMIC CLIPS WHERE REQUIRED FOR NEW GRID SYSTEM.

**WSU- MILLER ADMINISTRATION  
MEP Upgrades and Remodel**

3848 HARRISON BLVD.  
OGDEN, UTAH 84401

Project Name

Issued		
No.	Date	Description
1	01.16.15	DFCM PLAN REVIEW
2	02.03.15	BID DOCUMENTS

Revision		
No.	Date	Description
2	03-19-15	ADDENDUM #2

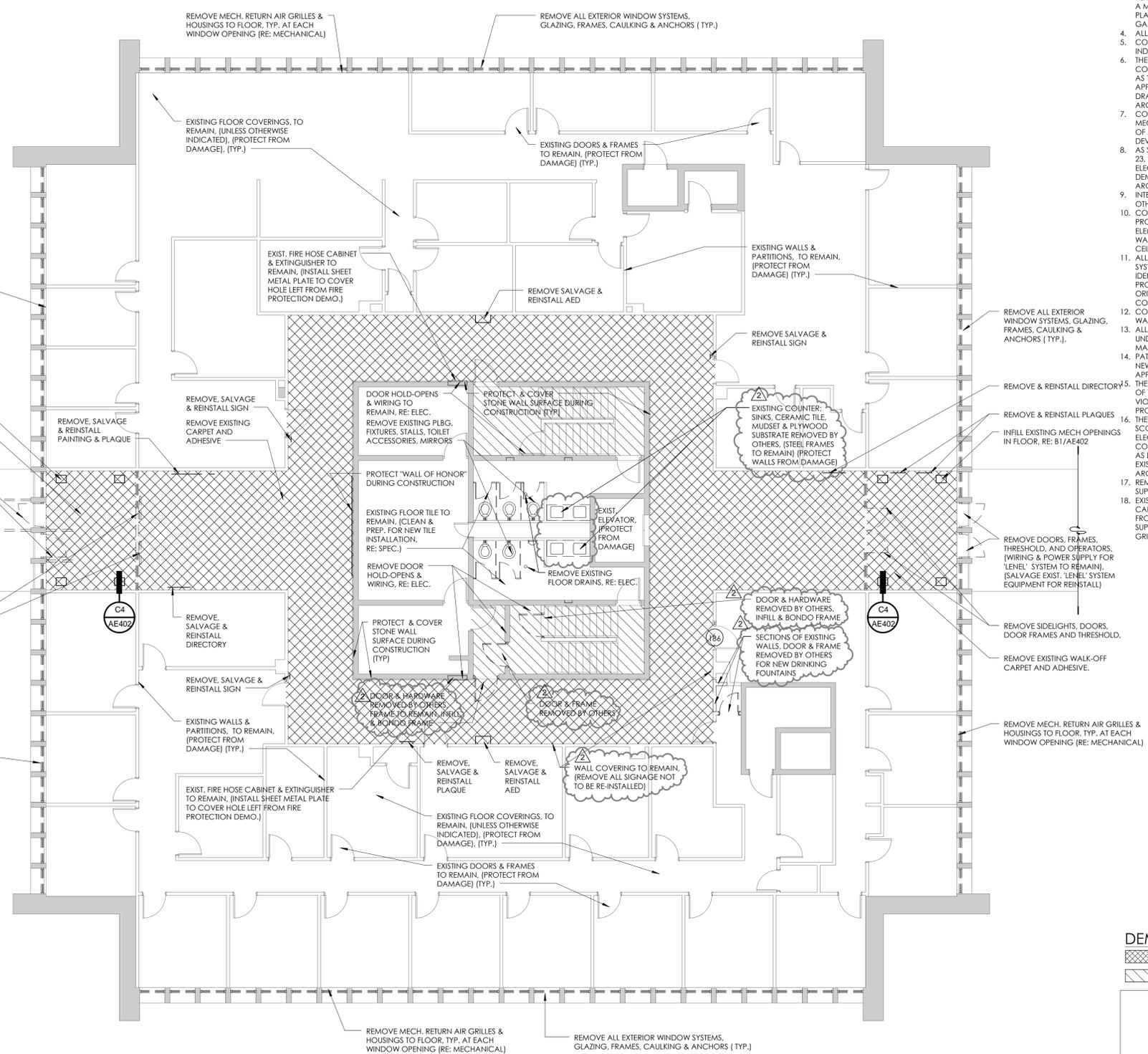
DFCM Project No. 14031810  
SAA Project No. 214016  
Drawing Title

**LEVEL TWO  
DEMOLITION PLAN**

Sheet Number

**AD101**

DFCM approval

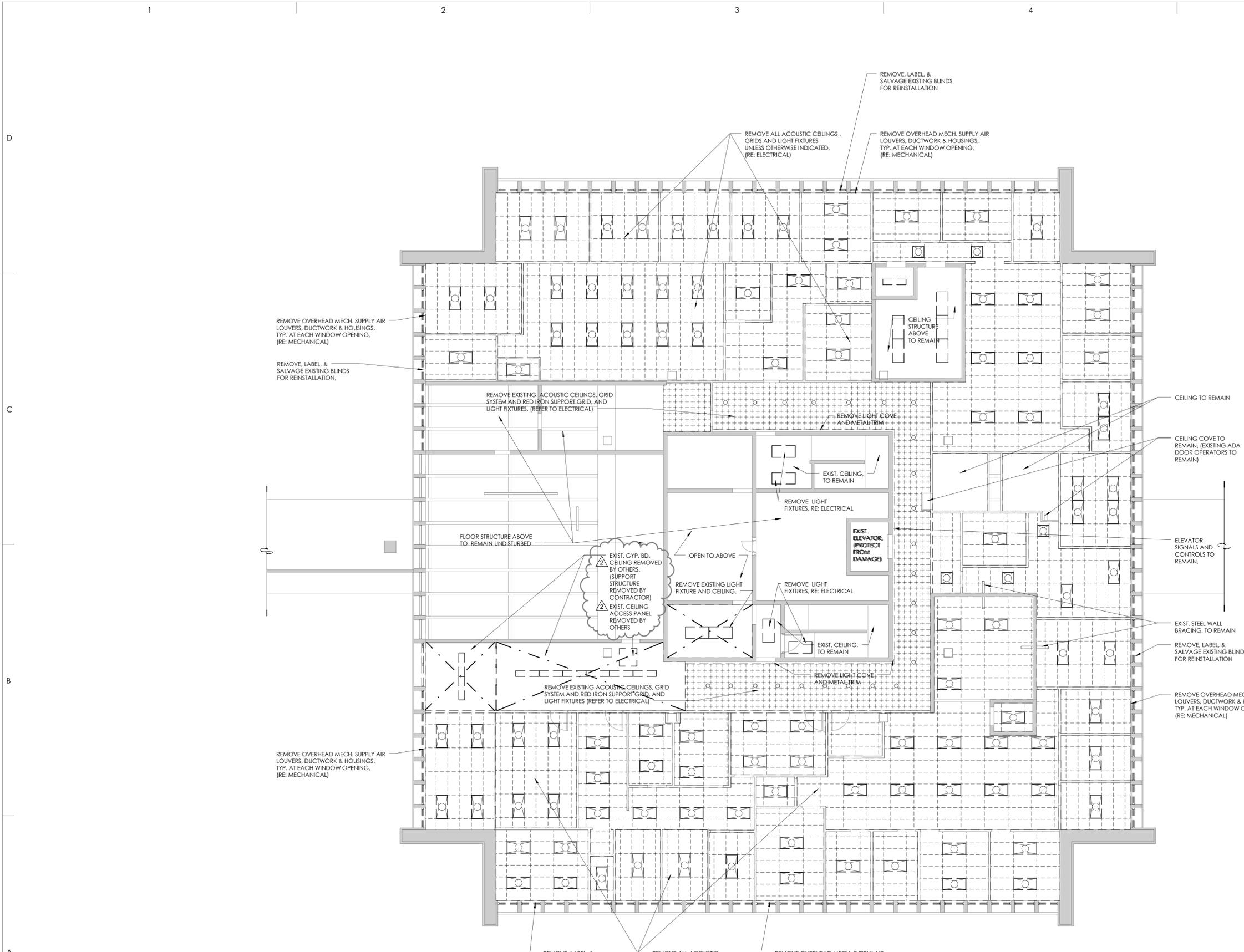


**Level Two Demolition Plan**

1/8" = 1'-0"







**GENERAL DEMOLITION NOTES**

1. DEMOLITION WORK WITHIN THE EXISTING BUILDING WILL NOT COMMENCE BEFORE MAY 01, 2015.
2. THE CONTRACTOR TO INSTALL FLEXBOARD OVER ALL FLOOR MATERIAL TO REMAIN, TO PROTECT SURFACES FROM CONSTRUCTION DEBRIS AND PROJECT WORK. 45 MIL MINIMUM THICKNESS. TAPE ALL JOINTS. CLEAN CARPET IF NECESSARY AT COMPLETION OF CONSTRUCTION.
3. THE CONTRACTOR TO MOVE ALL EXISTING FURNITURE A MINIMUM OF (3) FEET FROM WALLS IN EACH ROOM. WRAP THE PERIMETER OF FURNITURE WITH 60 GAUGE STRETCH WRAP FILM A MINIMUM OF (2) WRAPS. COVER FURNITURE TOPS WITH 6 MIL PLASTIC AND WRAP PERIMETER WITH (2) MORE LAYERS OF 60 GAUGE STRETCH WRAP TO SEAL.
4. ALL EXISTING ARTWORK TO BE REMOVED BY WSU.
5. CONTRACTOR TO REMOVE ALL SIGNAGE IN CORRIDORS NOT INDICATED TO BE REINSTALLED. (COORDINATE WITH OWNER).
6. THE CONTRACTOR MUST FIELD VERIFY ALL DIMENSIONS AND CONDITIONS INCLUDING EXISTING UTILITIES PRIOR TO BIDDING AS THE LOCATIONS SHOWN IN THE DOCUMENTS ARE APPROXIMATED. ALL VARIANCES NOT SHOWN IN THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO BID.
7. CONTRACTOR TO COORDINATE WITH ELECTRICAL, MECHANICAL, AND FIRE PROTECTION PLANS FOR LOCATIONS OF ALL EXISTING AND NEW EQUIPMENT, SYSTEMS, AND DEVICES.
8. AS SOME DEMOLITION WORK WILL BE SPECIFIC TO DIVISION 22, 23, 24, THE CONTRACTOR SHALL CROSS REFERENCE WITH ELECTRICAL AND MECHANICAL PLANS FOR ADDITIONAL DEMOLITION WHICH IS REQUIRED, BUT NOT REFLECTED ON ARCHITECTURAL DRAWINGS.
9. INTERIOR WALLS AND PARTITIONS TO REMAIN, UNLESS OTHERWISE INDICATED. (PROTECT FROM DAMAGE).
10. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT THE EXISTING STRUCTURE, FINISHES, AND SITE ELEMENTS NOT CALLED FOR DEMOLITION DURING REMODEL OF WALLS, FLOORING MATERIAL, CASEWORK, DOORS, WINDOWS, CEILING, AND SITE.
11. ALL EXISTING INTERIOR FINISHES, MATERIALS, STRUCTURE, SYSTEMS, LANDSCAPING, AND SITE FEATURES, ETC., NOT IDENTIFIED FOR DEMOLITION THAT ARE DAMAGED DURING THE PROCESS OF CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR REPLACED TO MATCH AT THE CONTRACTORS EXPENSE.
12. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL FLOORING, WALLS, & CEILING SYSTEMS AS SHOWN ON THE DRAWINGS.
13. ALL EXISTING FINISHED SURFACES DAMAGED DUE TO WORK UNDER THIS CONTRACT SHALL BE PATCHED & FINISHED TO MATCH EXISTING ADJACENT SURFACES.
14. PATCH & LEVEL EXISTING CONCRETE SLABS AS REQUIRED FOR NEW FINISHES WITH FLOOR LEVELING COMPOUND AS APPROVED BY ARCHITECT.
15. THE GENERAL CONTRACTOR SHALL BRING TO THE ATTENTION OF THE ARCHITECT FOR IMMEDIATE RESOLUTION, ANY CODE VIOLATIONS, INCORRECT CONSTRUCTIONS OR SAFETY PROBLEMS THAT ARE EXISTING FIELD CONDITIONS.
16. THE GENERAL CONTRACTOR IS RESPONSIBLE TO COORDINATE SCOPE IN REMODEL AS INDICATED ON ALL ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND FIRE PROTECTION SHEETS AND COORDINATE AND PROVIDE DEMOLITION AS NEEDED. WORK AS DESCRIBED FOR REMODEL THAT IS IN CONFLICT WITH EXISTING CONDITION IS TO BE BROUGHT TO THE ATTENTION OF ARCHITECT PRIOR TO DEMOLITION.
17. REMOVE EXISTING RED IRON CEILING TILE SUSPENDED GRID SUPPORT SYSTEM.
18. EXISTING METAL SUSPENDED GRID PERIMETER WALL ANGLES CAN BE REUSED IF IN GOOD CONDITION AND NOT DAMAGED FROM DEMOLITION. PROVIDE ADDITIONAL ANCHORAGE SUPPORT FOR NEW SEISMIC CLIPS WHERE REQUIRED FOR NEW GRID SYSTEM.

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2	03-19-15	ADDENDUM #2

DFCM Project No. 14031810  
 SAA Project No. 214016  
 Drawing Title

**LEVEL ONE REFLECTED CEILING DEMOLITION PLAN**

Sheet Number

**AD110**

**Level One Reflected Ceiling Demolition**

1/8" = 1'-0"







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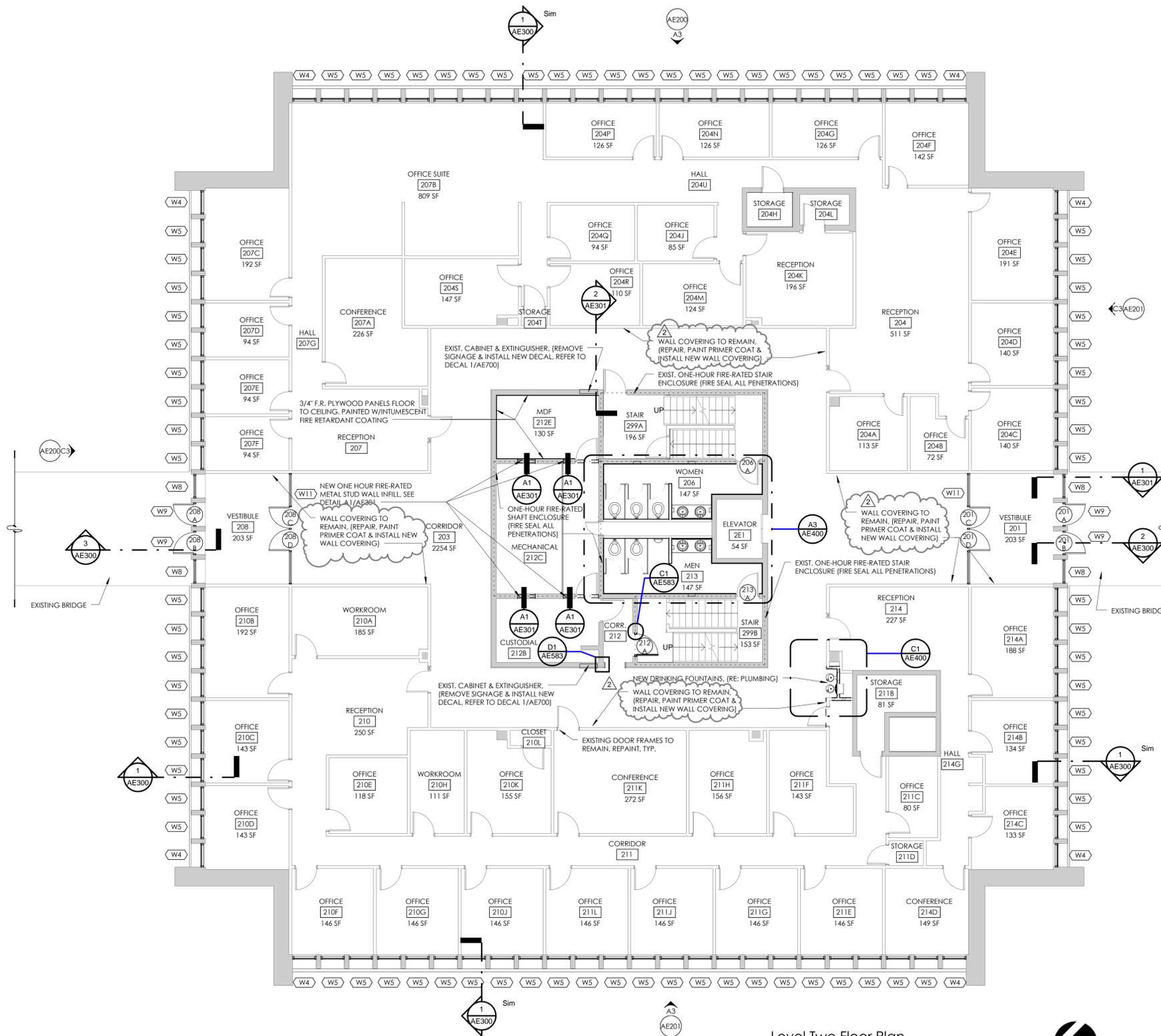
DFCM Project No.	14031810
SAA Project No.	214016
Drawing Title	

**LEVEL TWO FLOOR PLAN**

Sheet Number

**AE101**

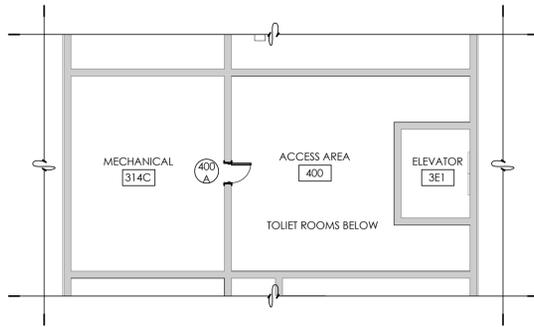
DFCM approval



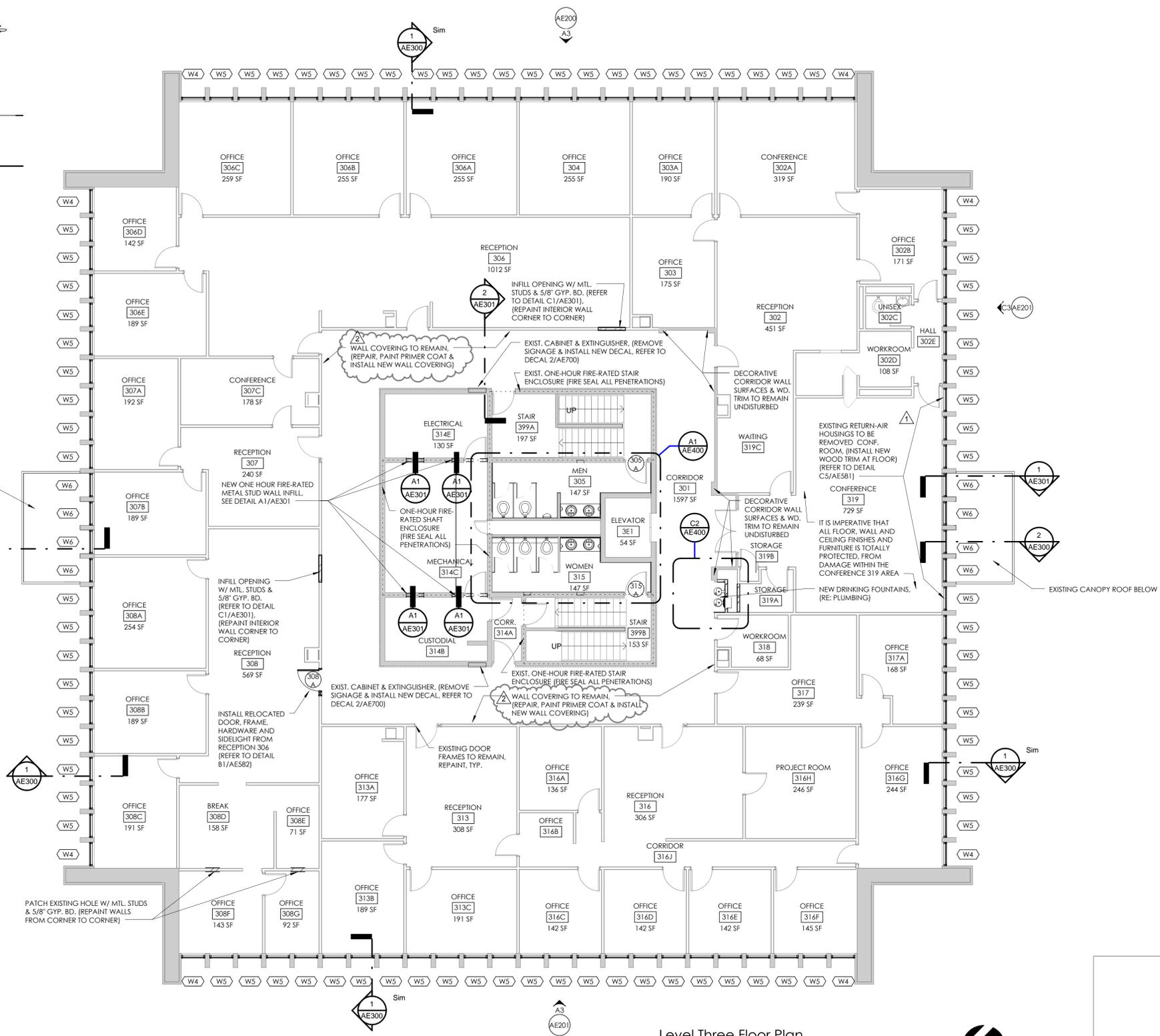
Level Two Floor Plan

1/8" = 1'-0"





2 Access Area Floor Plan  
1/8" = 1'-0"



Level Three Floor Plan  
1/8" = 1'-0"



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1	01.16.15	DFCM PLAN REVIEW
2	02.03.15	BID DOCUMENTS

Revision

No.	Date	Description
1	02-27-15	ADDENDUM #1
2	03-19-15	ADDENDUM #2

DFCM Project No. 14031810  
SAA Project No. 214016  
Drawing Title

LEVEL THREE FLOOR PLAN

Sheet Number

**AE102**

DFCM approval

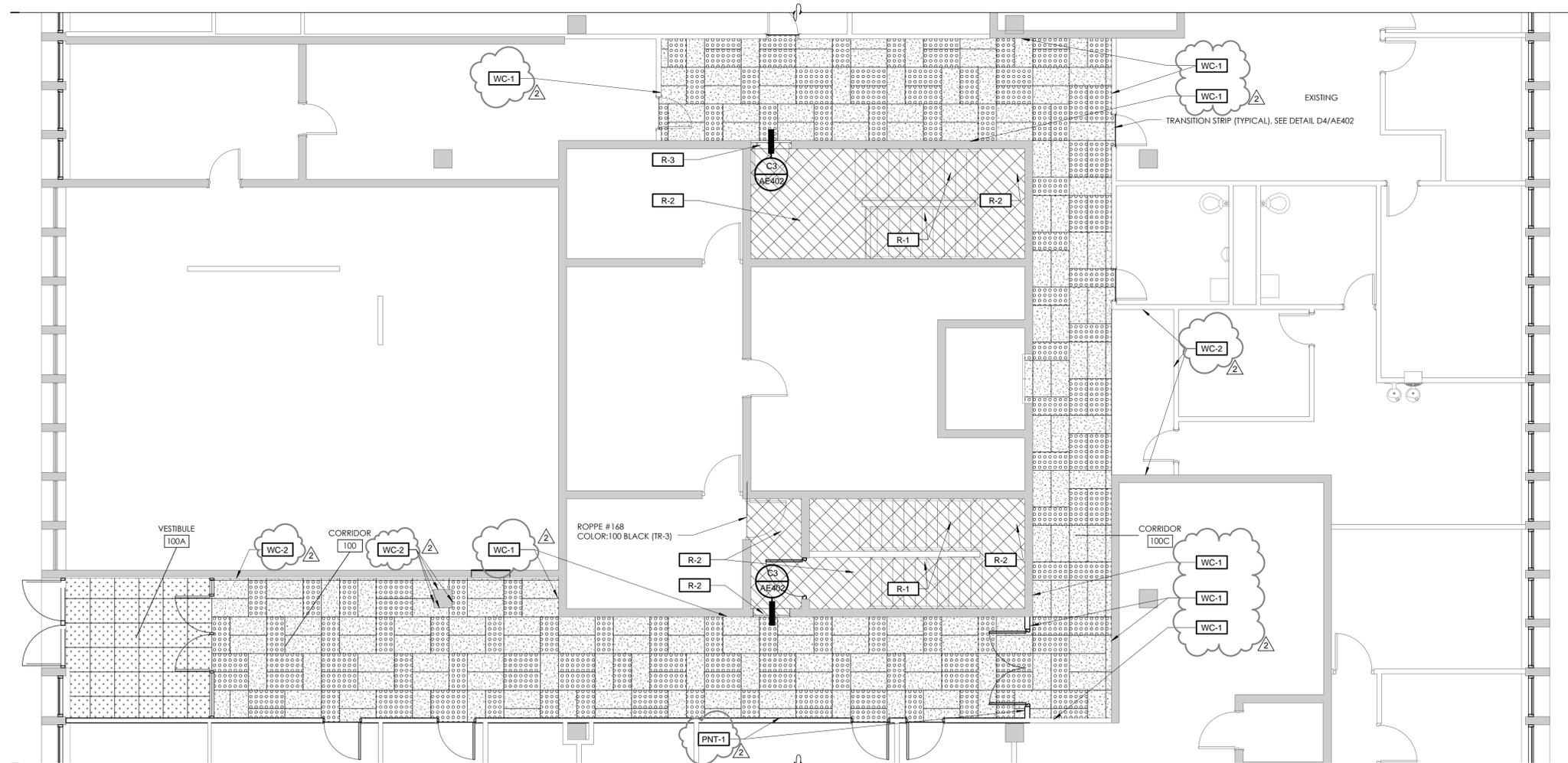
INTERIOR FINISH KEY

NOTE: SCHEDULE MATERIALS AND FINISHES SHALL BE USED FOR BASIS OF DESIGN.

CODE	MATERIAL	MANUFACTURER	PRODUCT NAME/NUMBER	COLOR-FINISH	SIZE	COMMENTS
<b>CARPET</b>						
CPT-1	CARPET TILE	SHAW	QUARTZ - ST017	SMOKY QUARTZ - 14761	18" X 36"	SEE FINISH FLOOR PLAN FOR LAYOUT
CPT-2	CARPET TILE	SHAW	BLUR TILE - 59596	SHADED - 95585	18" X 36"	SEE FINISH FLOOR PLAN FOR LAYOUT
CPT-3	WALK-OFF CARPET TILE	J+J INVISION	CATWALK - STYLE 7010	SPOTLIGHT - 1427	24" X 24"	QUARTER TURN INSTALLATION METHOD
CPT-4	BROADLOAM CARPET	SHAW	HIGHLIGHT- 60735	EGGPLANT- 35990		CARPET BOARDER AT CURTAINWALL. SEE DETAIL C4/AE581
<b>RUBBER</b>						
R-1	RUBBER STAIR SYSTEM	ROPPE	SAFECORK	TBD		
R-2	RUBBER FLOOR LANDING	ROPPE	SAFECORK	TBD	20" X 20"	
R-3	RUBBER FLOOR ACCENT	ROPPE	SAFECORK	TBD	20" X 20"	
<b>TILE</b>						
T-1	PORCELAIN FLOOR TILE	MARAZZI TILE	ESSENTIALS	GREY MOSAIC	2" X 4" BRICK	
T-2	CERAMIC WALL TILE	CONTEMPO TILE	CENTO	W - MATTE	5" X 7"	SEE INTERIOR ELEVATIONS FOR LAYOUT
T-3	CERAMIC WALL TILE	CONTEMPO TILE	CENTO	W - GLOSS	5" X 7"	SEE INTERIOR ELEVATIONS FOR LAYOUT
T-4	CERAMIC WALL TILE	CONTEMPO TILE	CENTO	DG - MATTE	5" X 7"	SEE INTERIOR ELEVATIONS FOR LAYOUT
T-5	CERAMIC WALL TILE	CONTEMPO TILE	CENTO	DG - GLOSS	5" X 7"	SEE INTERIOR ELEVATIONS FOR LAYOUT
T-6	CERAMIC WALL TILE	CONTEMPO TILE	CENTO	VA - GLOSS	5" X 7"	SEE INTERIOR ELEVATIONS FOR LAYOUT
<b>GROUT</b>						
G-1	FLOOR GROUT	MAPEI	FLEXCOLOR CQ	47 CHARCOAL		
G-2	WALL GROUT	MAPEI	FLEXCOLOR CQ	00 WHITE		
<b>BASE / TRANSITIONS</b>						
B-1	RUBBER BASE	ROPPE	700 SERIES TYPE TP	100 BLACK	4" STRAIGHT PROFILE	
B-2	TILE BASE	CONTEMPO TILE	CENTO	W - MATTE	5" X 7"	
B-3	RUBBER STAIR STRINGER	ROPPE	10"	100 BLACK		
B-4	RUBBER BASE	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	
TR-1	TRANSITION STRIP	ROPPE	VINYL REDUCER #160	100 BLACK		
<b>PAINT</b>						
PNT-1	PAINT	SHERWIN WILLIAMS	EXTRA WHITE - SW7006	SEMI-GLOSS		
PNT-2	PAINT	SHERWIN WILLIAMS	UNIVERSAL KHAKI - SW6150	SEMI-GLOSS		
PNT-3	PAINT	SHERWIN WILLIAMS	CAVIAR - SW6990	SEMI-GLOSS		PAINT COLOR FOR ALL HOLLOW METAL DOOR FRAMES
PNT-4	PAINT	SHERWIN WILLIAMS	WEBER STATE PURPLE	SEMI-GLOSS		
PNT-5	PAINT	SHERWIN WILLIAMS	MATCH EXISTING	MATCH EXISTING		
NOTE: ANY PAINT TOUCH-UP IS TO BE REPAINTED FROM WALL CORNER TO WALL CORNER.						
<b>WALLCOVERING</b>						
WC-1	WALLCOVERING	KOROSEAL	MOJAVE II - 1651	BLIZZARD WHITE - 00		
WC-2	WALLCOVERING	KOROSEAL	VECTOR - V121	SPECTRUM - 69		
<b>SOLID SURFACE</b>						
SS-1	SOLID SURFACE	WILSONART	SOLID SURFACE	FROSTY WHITE MIRAGE - 1573MG		
<b>ACOUSTICAL</b>						
AC-1	ACOUSTICAL CEILING TILE	USG	ECLIPSE CLIMAPLUS, SLT-78775	MEDIUM TEXTURE, WHITE	24" X 24" X 3/4"	ANGLED TEGULAR
AC-2	ACOUSTICAL CEILING TILE	USG	RADAR EDUCATION SQ - 22421	MEDIUM TEXTURE, WHITE	24" X 24" X 7/8"	SQUARE EDGE

ROOM FINISH SCHEDULE

NO.	NAME	FLOOR FINISH	BASE FINISH	NORTH WALL	SOUTH WALL	EAST WALL	WEST WALL	CEILING FINISH	COMMENTS	NO. 2
1E1	ELEVATOR	CPT-2	-	-	-	-	-	-		1E1
100	CORRIDOR	CPT-1 / CPT-2	B-1	-	-	-	-	AC-1 / PNT-1	*SEE AE161 FOR WALL FINISHES	100
100A	VESTIBULE	CPT-3	B-1	-	-	WC-2	PNT-1	PNT-1		100A
100B	CORR.	R-2 / R-3	B-1	PNT-1	PNT-1	PNT-1	PNT-1	PNT-1		100B
100C	CORRIDOR	CPT-1 / CPT-2	B-1	-	-	-	-	AC-1 / PNT-1	*SEE AE161 FOR WALL FINISHES	100C
101	RECEPTION	-	B-4	-	-	PNT-5	-	-		101
101A	OFFICE	-	B-4	-	-	PNT-5	-	-		101A
102	OPEN OFFICE	-	B-4	-	-	PNT-5	-	-		102
102F	RECEPTION	-	B-4	-	-	PNT-5	-	-		102F
102G	OFFICE	-	B-4	-	-	PNT-5	-	-		102G
102H	CONFERENCE	-	B-4	-	-	PNT-5	-	-		102H
103	OPEN OFFICE	-	B-4	-	-	PNT-5	-	-		103
103P	SERVICE	-	B-4	-	-	PNT-5	-	-		103P
199A	STAIR	R-1 / R-2 / R-3	B-1 / B-3	PNT-1	PNT-1	PNT-1	PNT-1	PNT-1		199A
199B	STAIR	R-1 / R-2	B-1 / B-3	PNT-1	PNT-1	PNT-1	PNT-1	PNT-1		199B
201	VESTIBULE	CPT-3	B-1	-	-	WC-1	WC-1	PNT-1		201
203	CORRIDOR	CPT-1 / CPT-2	B-1 / B-2	-	-	-	AC-1 / PNT-1	AC-1 / PNT-1	*SEE AE162 FOR WALL FINISHES	203
206	WOMEN	T-1	-	T-2 / T-3 / T-6	T-2 / T-3 / T-4 / T-5 / T-6	T-2 / T-3 / T-6	T-2 / T-3 / T-4 / T-5 / T-6	PNT-1	SEE INTERIOR ELEVATIONS	206
208	VESTIBULE	CPT-3	B-1	-	-	WC-1	WC-1	PNT-1		208
212	CORR.	R-2 / R-3	B-1	PNT-1	PNT-1	PNT-1	PNT-1	PNT-1		212
213	MEN	T-1	-	T-2 / T-3 / T-6	T-2 / T-3 / T-4 / T-5 / T-6	T-2 / T-3 / T-6	T-2 / T-3 / T-6	PNT-1	SEE INTERIOR ELEVATIONS	213
229A	STAIR	R-1 / R-2 / R-3	B-1 / B-3	PNT-1	PNT-1	PNT-1	PNT-1	PNT-1		229A
229B	STAIR	R-2 / R-3	B-1 / B-3	PNT-1	PNT-1	PNT-1	PNT-1	PNT-1		229B
301	CORRIDOR	CPT-1 / CPT-2	B-1 / B-2	-	-	-	AC-1 / PNT-1	AC-1 / PNT-1	*SEE AE163 FOR WALL FINISHES	301
305	MEN	T-1	-	T-2 / T-3 / T-6	T-2 / T-3 / T-4 / T-5 / T-6	T-2 / T-3 / T-6	T-2 / T-3 / T-4 / T-5 / T-6	PNT-1	SEE INTERIOR ELEVATIONS	305
314A	CORR.	R-2 / R-3	B-1	PNT-1	PNT-1	PNT-1	PNT-1	PNT-1		314A
315	WOMEN	T-1	-	T-2 / T-3 / T-6	T-2 / T-3 / T-4 / T-5 / T-6	T-2 / T-3 / T-6	T-2 / T-3 / T-6	PNT-1	SEE INTERIOR ELEVATIONS	315
319A	STORAGE	-	B-4	-	-	PNT-5	-	-		319A
399A	STAIR	R-1 / R-2 / R-3	B-1 / B-3	PNT-1	PNT-1	PNT-1	PNT-1	PNT-1		399A
399B	STAIR	R-1 / R-2	B-1 / B-3	PNT-1	PNT-1	PNT-1	PNT-1	PNT-1		399B



FINISH LEGEND

- CPT-1
- CPT-2
- CPT-3
- T-1
- RUBBER STAIR AND LANDING SYSTEM
- EXISTING FLOORING TO REMAIN (PROTECT AS INDICATED ON DEMOLITION NOTES)

Level One Finish Floor Plan

3/16" = 1'-0"

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2	03-19-15	ADDENDUM #2

DFCM Project No. 14031810  
 SAA Project No. 214016  
 Drawing Title

LEVEL ONE FINISH FLOOR PLAN

Sheet Number

**AE161**



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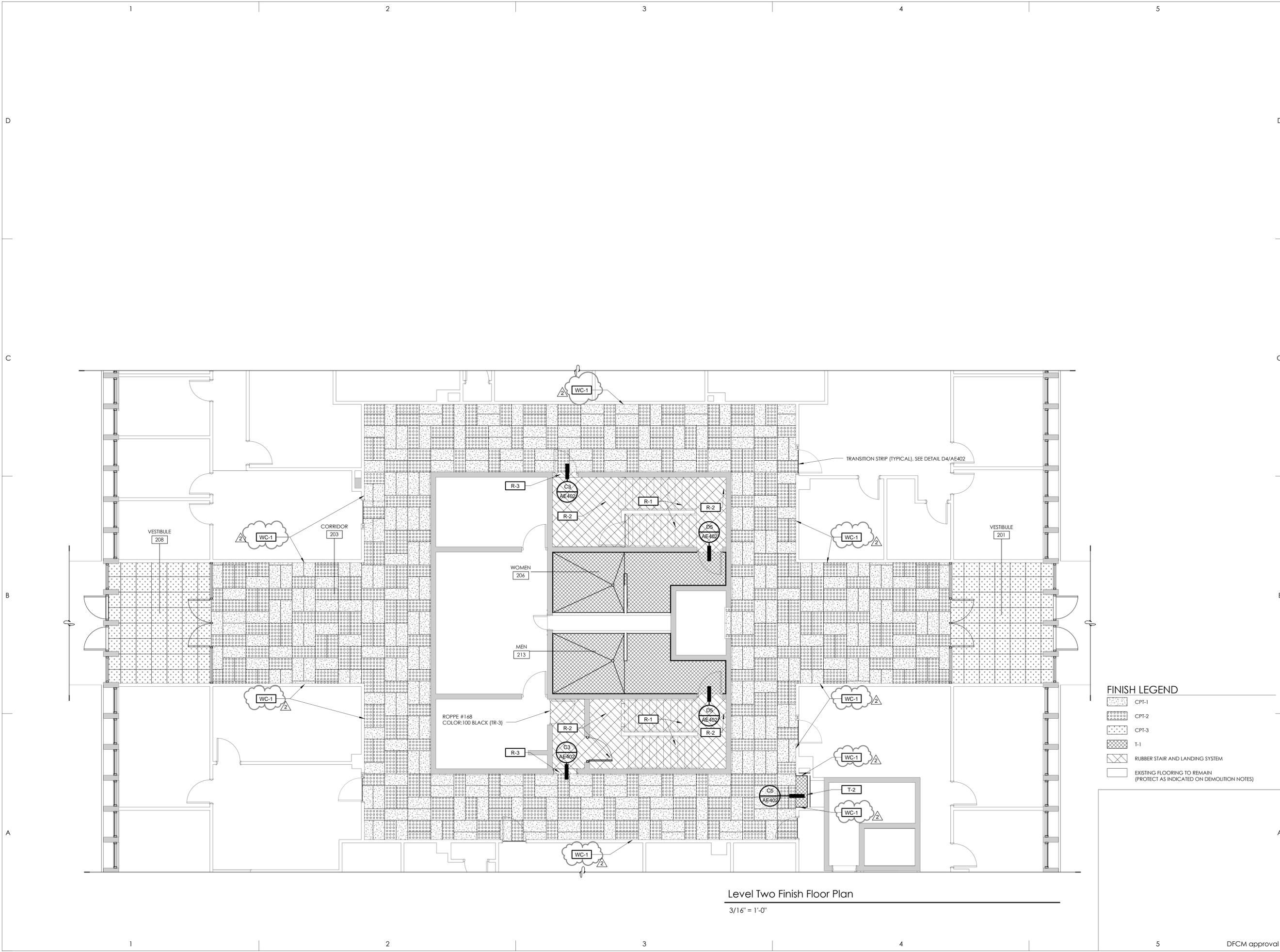
DFCM Project No.	14031810
SAA Project No.	214016
Drawing Title	

**LEVEL TWO FINISH FLOOR PLAN**

Sheet Number

**AE162**

DFCM approval





Consultant

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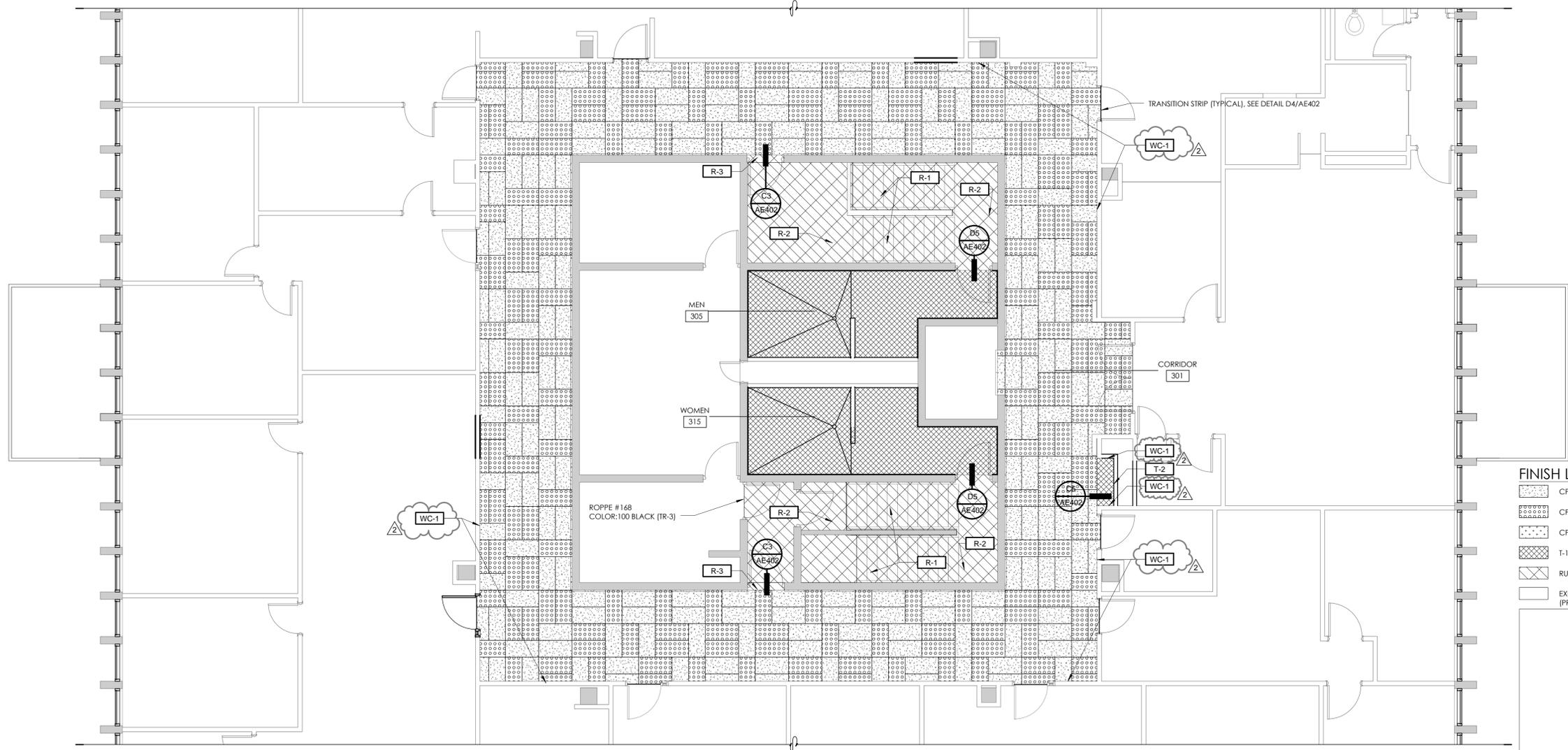
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SA Project No.	214016

LEVEL THREE FINISH FLOOR PLAN

Sheet Number

**AE163**

DFCM approval

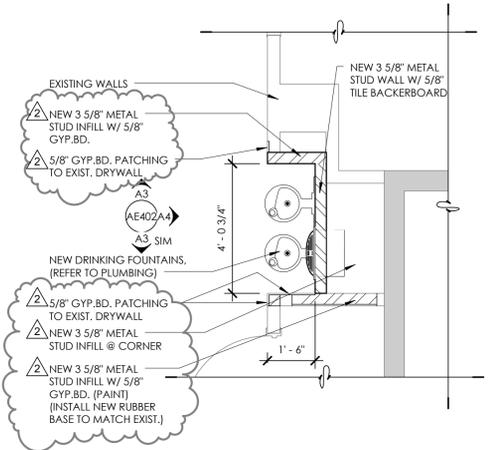


**FINISH LEGEND**

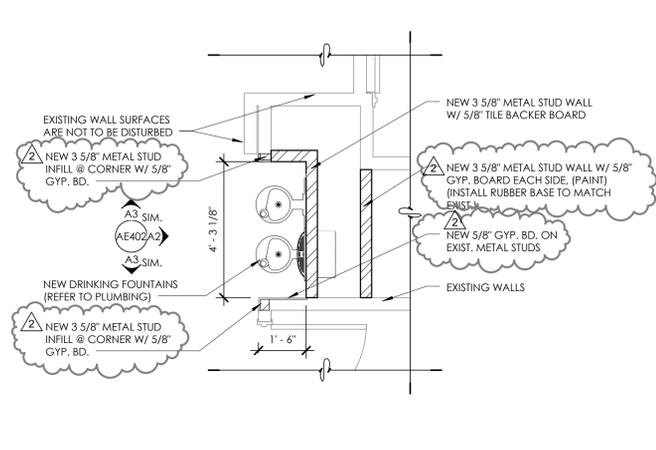
- CPT-1
- CPT-2
- CPT-3
- T-1
- RUBBER STAIR AND LANDING SYSTEM
- EXISTING FLOORING TO REMAIN  
(PROTECT AS INDICATED ON DEMOLITION NOTES)

Level Three Finish Floor Plan  
 3/16" = 1'-0"

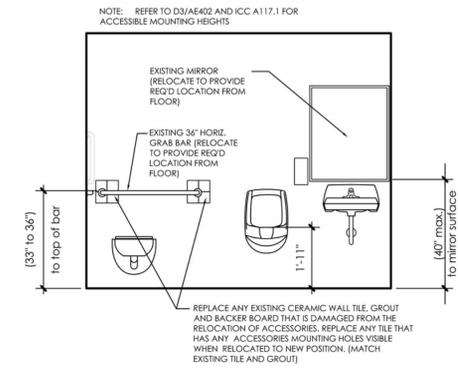




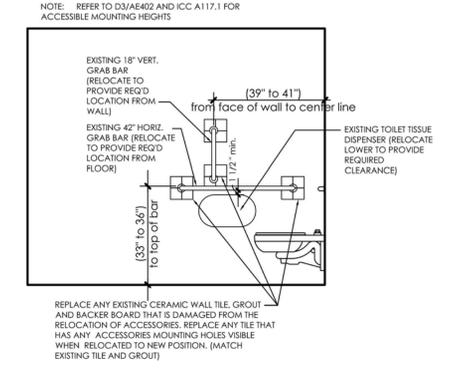
**C1** Level 2 - Enlarged Drinking Fountain Plan  
3/8" = 1'-0"



**C2** Level 3 - Enlarged Drinking Fountain Plan  
3/8" = 1'-0"

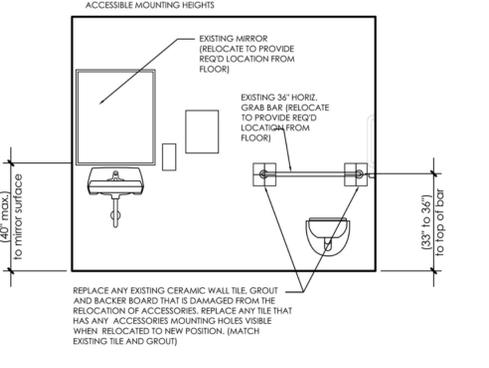


**C3** Men 109 South Elevation  
3/8" = 1'-0"

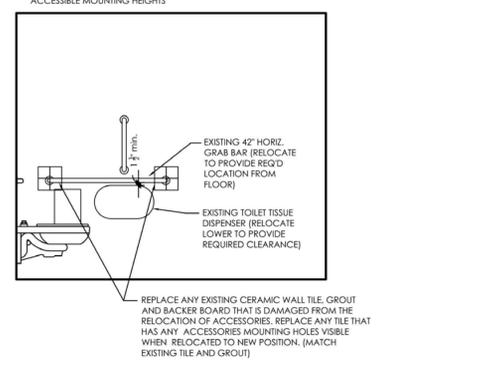


**C5** Men 109 East Elevation  
3/8" = 1'-0"

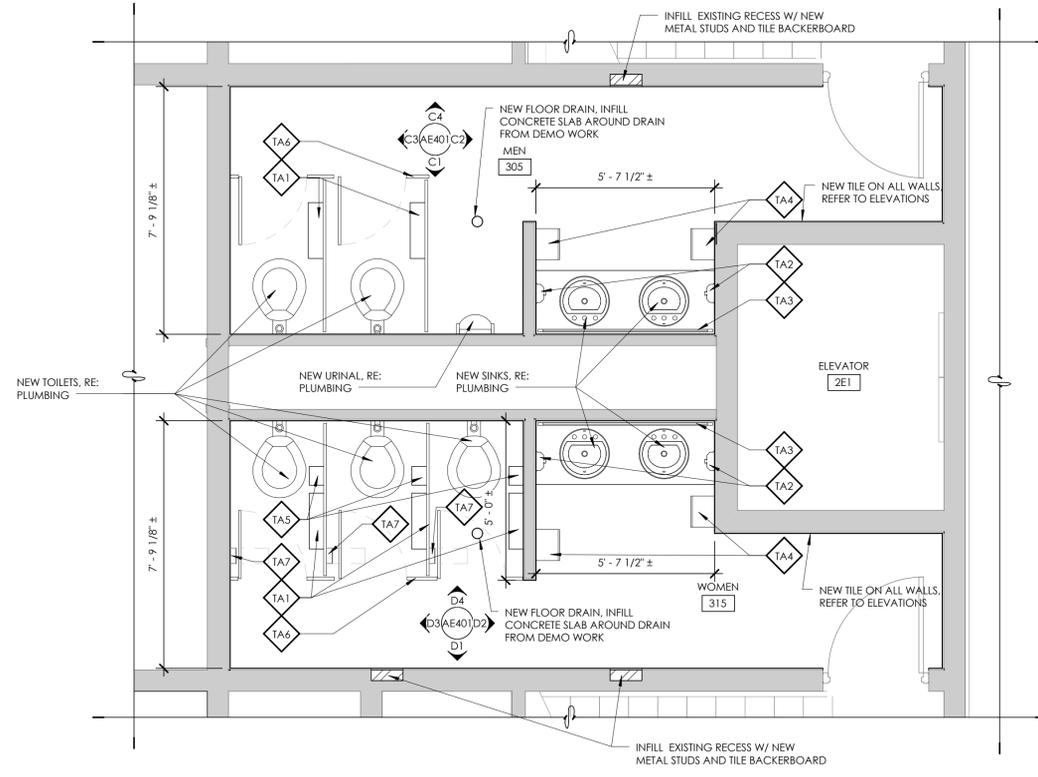
TOILET ROOM ACCESSORIES				
CODE	DESCRIPTION	MANU.	COMMENTS	PROVIDED/ INSTALLED BY
TA1	TOILET TISSUE DISPENSER	-	PROVIDE AT EACH TOILET.	OWNER / CONTRACTOR
TA2	WALL MOUNTED SOAP DISPENSER	-	PROVIDE AT EACH SINK. SEE ELEVATIONS.	OWNER / CONTRACTOR
TA3	1/4" POLISHED PLATE GLASS MIRROR	BOBRICK B-290 SERIES BASIS OF DESIGN	FRAMED, 66"x36", ABOVE EACH COUNTER AS SPECIFIED.	CONTRACTOR
TA4	SURFACE MOUNTED PAPER TOWEL DISPENSER	-	SEE ELEVATIONS.	OWNER / CONTRACTOR
TA5	SANITARY NAPKIN DISPOSAL UNIT	BOBRICK B-254 BASIS OF DESIGN	-	CONTRACTOR
TA6	FLOOR MOUNTED TOILET PARTITION	REFER TO SPECIFICATIONS	METAL FLOOR MOUNTED. COLOR: TBD.	CONTRACTOR
TA7	PURSE SHELF	BOBRICK B-287 BASIS OF DESIGN	-	CONTRACTOR



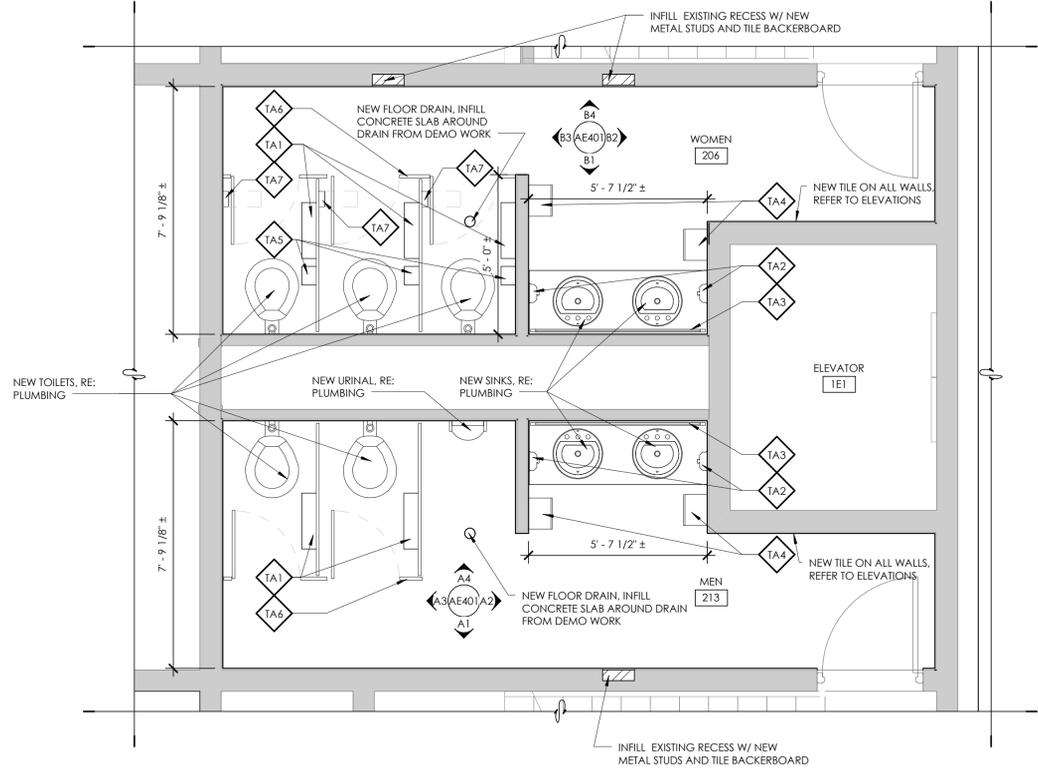
**B3** Women 107 North Elevation  
3/8" = 1'-0"



**B5** Women 107 East Elevation  
3/8" = 1'-0"



**A1** Level Three Enlarged Restrooms Plan  
3/8" = 1'-0"



**A3** Level Two Enlarged Restrooms Plan  
3/8" = 1'-0"



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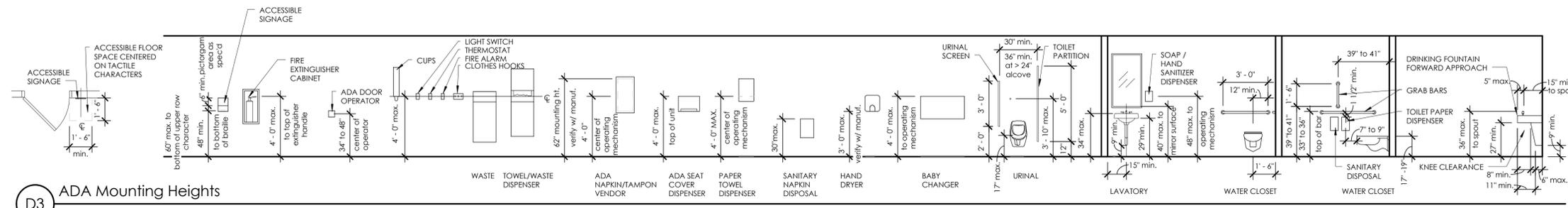
Revision

No.	Date	Description
2	03-19-15	ADDENDUM #2

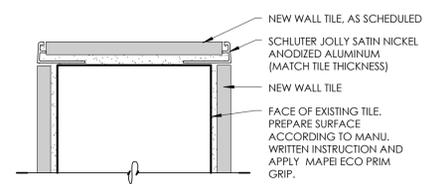
DFCM Project No.	14031810
SAA Project No.	214016
Drawing Title	

ENLARGED REST ROOM PLAN

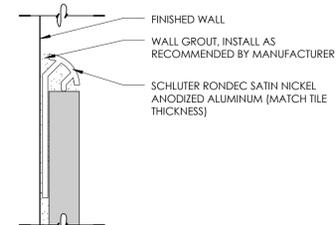
Sheet Number  
**AE400**



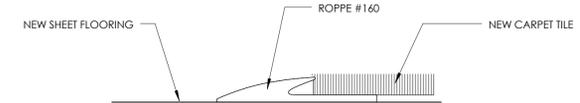
**D3 ADA Mounting Heights**  
1/4" = 1'-0"



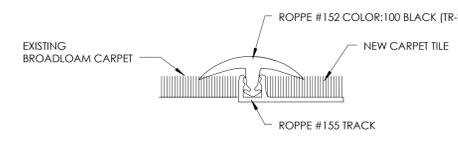
**C1 Endwall Detail**  
6" = 1'-0"



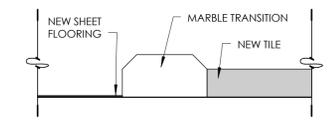
**C2 Tile Base Finish Detail**  
12" = 1'-0"



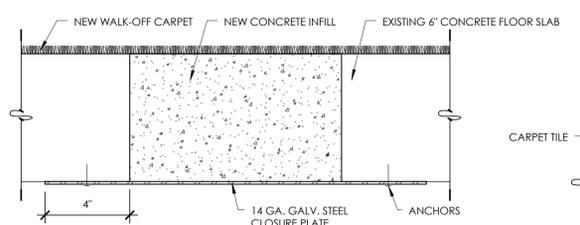
**C3 Carpet to Stair Floor**  
12" = 1'-0"



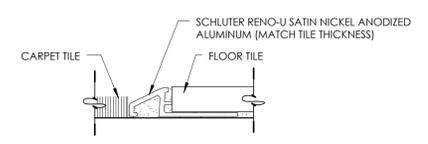
**D4 Existing Carpet to New Carpet Detail**  
12" = 1'-0"



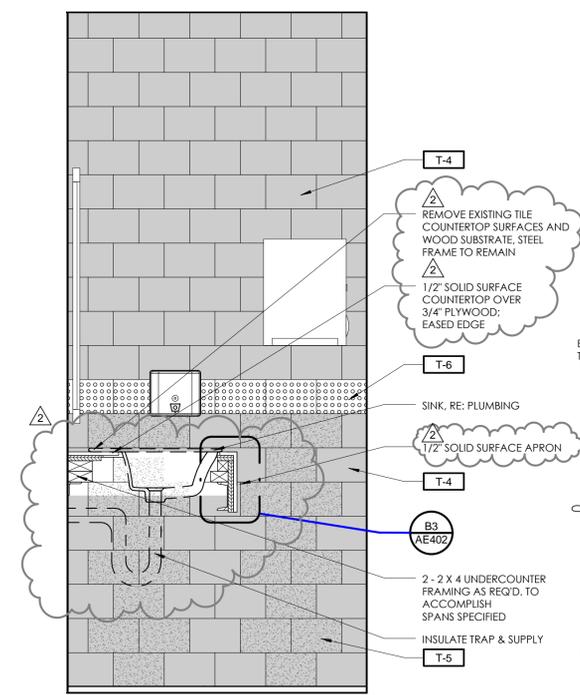
**D5 Tile Transition Strip**  
12" = 1'-0"



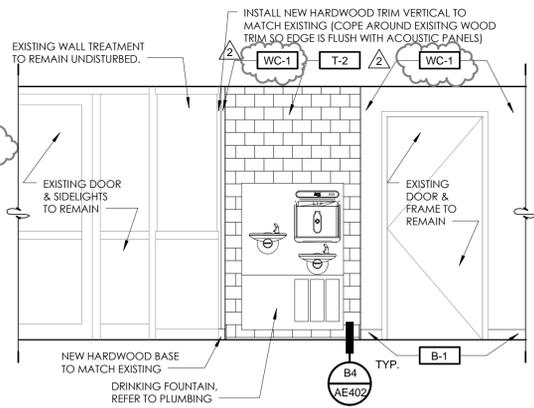
**C4 Floor Detail**  
3" = 1'-0"



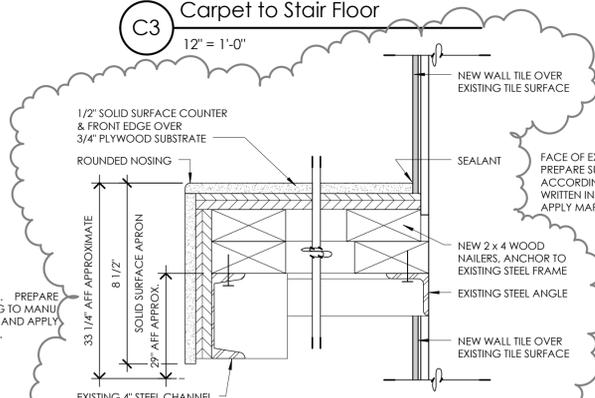
**C5 Tile to Carpet Detail**  
12" = 1'-0"



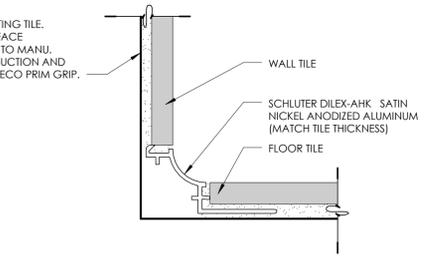
**A1 Countertop Section**  
1" = 1'-0"



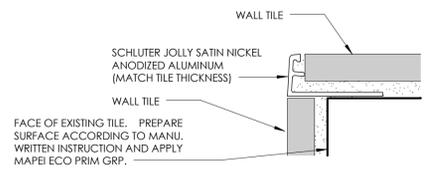
**A2 Drinking Fountain Level 3**  
3/8" = 1'-0"



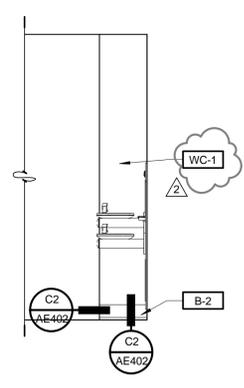
**B3 Countertop Detail**  
3" = 1'-0"



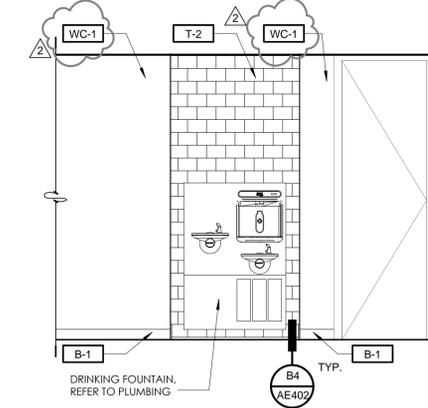
**B4 Wall Tile To Floor Tile Detail**  
12" = 1'-0"



**B5 Outside Corner Detail**  
12" = 1'-0"



**A3 Typical Drinking Fountain Alcove**  
3/8" = 1'-0"



**A4 Drinking Fountain Level 2**  
3/8" = 1'-0"



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**WSU-MILLER ADMINISTRATION**  
MEP Upgrades and Remodel  
3848 HARRISON BLVD.  
OGDEN, UTAH 84401

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DFCM Project No. 14031810  
SAA Project No. 214016  
Drawing Title

**INTERIOR ELEVATIONS AND DETAILS**

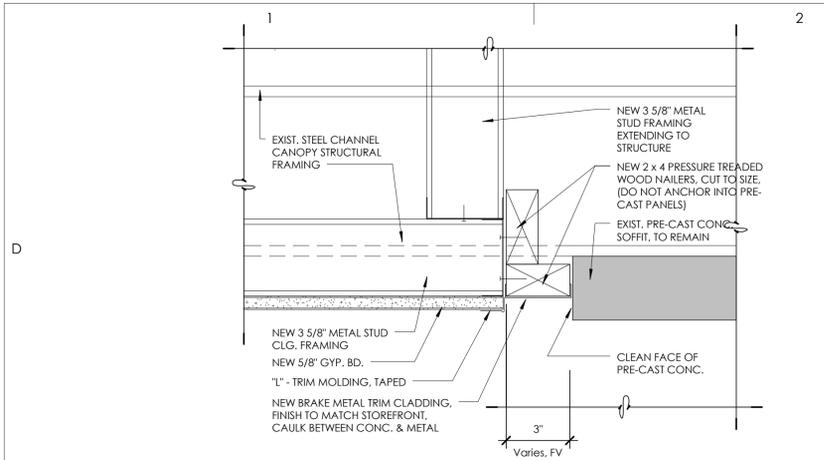
Sheet Number

**AE402**

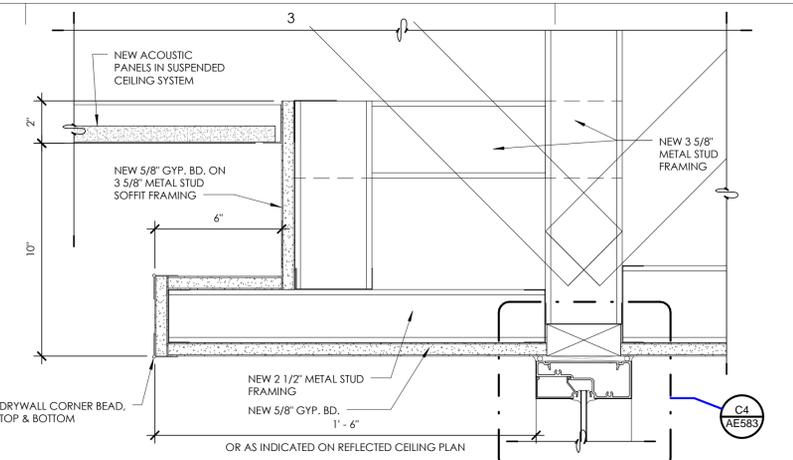
DFCM approval



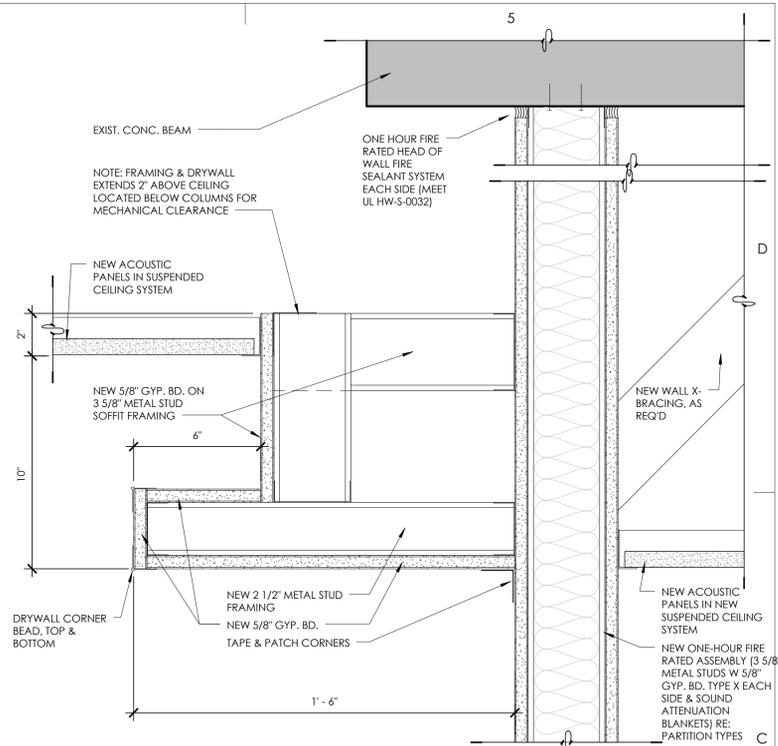
Consultant



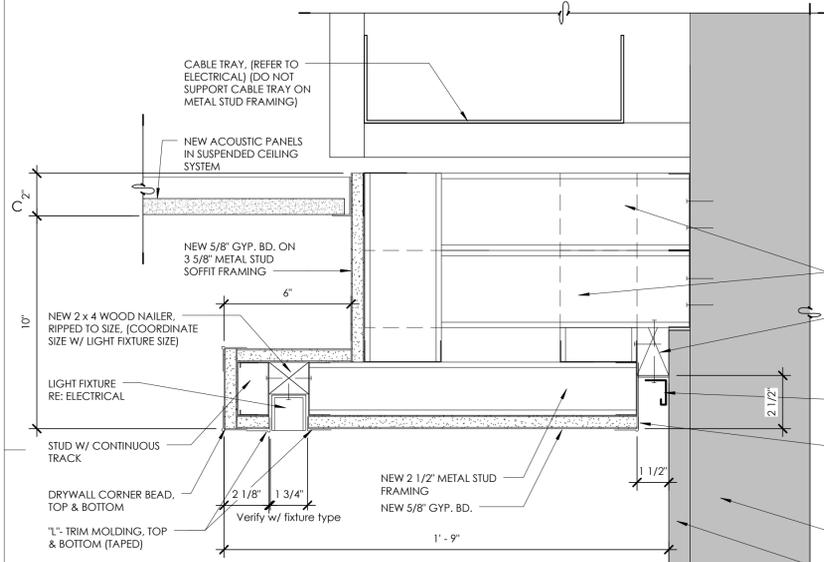
**D1 CEILING DETAIL**  
 3" = 1'-0"



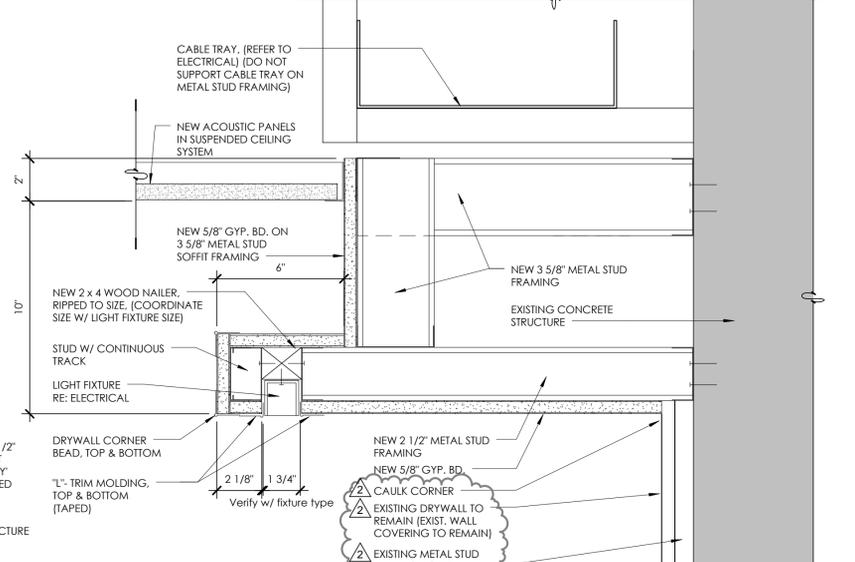
**D3 CEILING DETAIL**  
 3" = 1'-0"



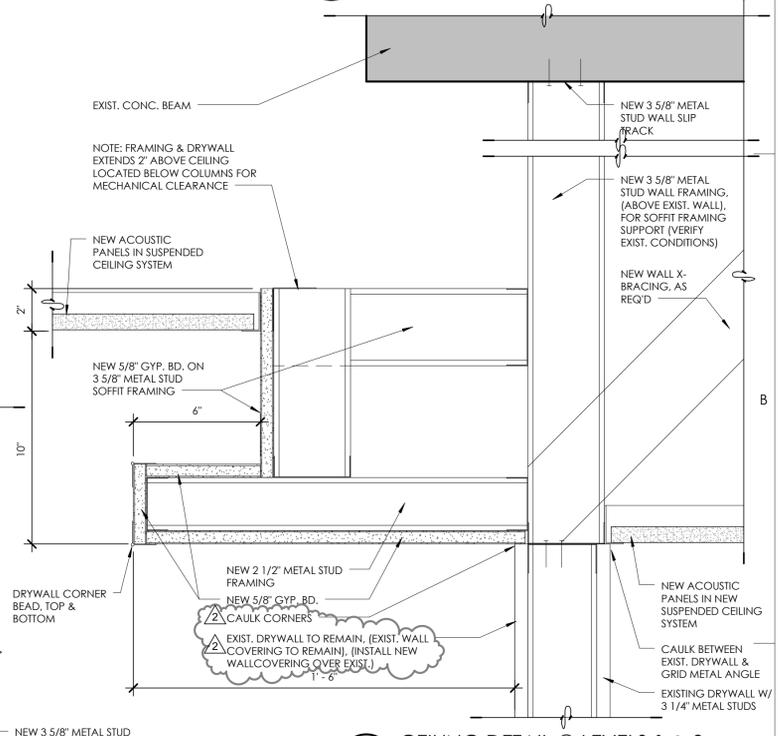
**C5 CEILING DETAIL @ LEVELS 1 FIRE RATED PARTITION**  
 3" = 1'-0"



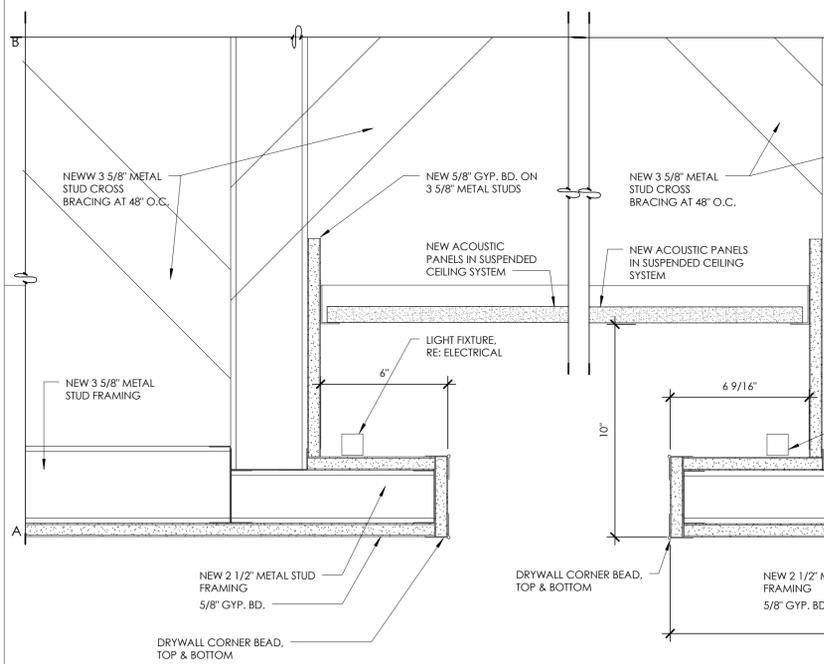
**B1 CEILING DETAIL**  
 3" = 1'-0"



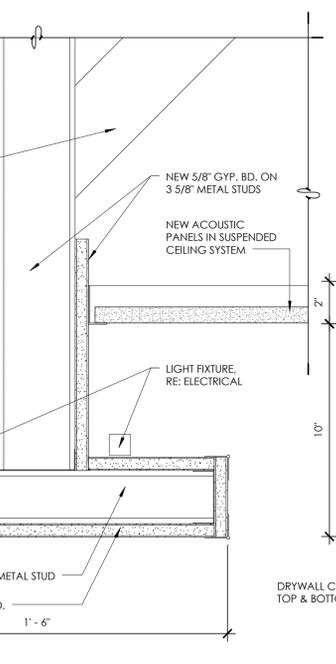
**B3 CEILING DETAIL LEVEL 1**  
 3" = 1'-0"



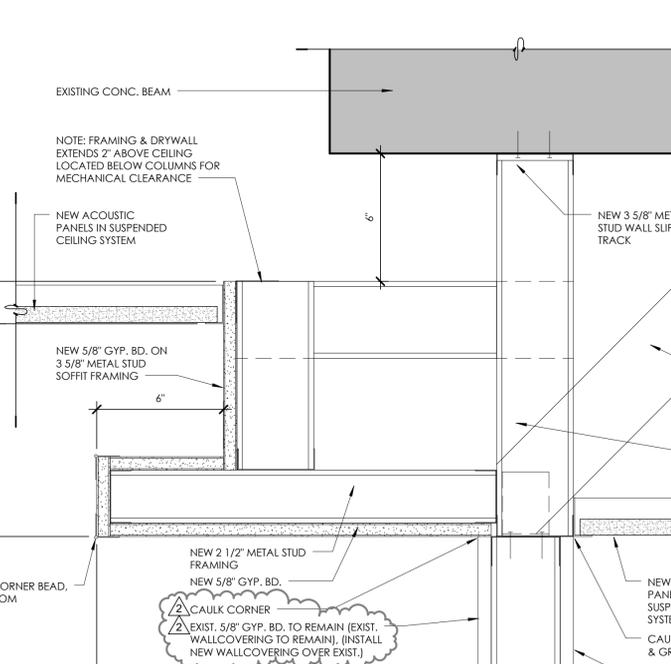
**B5 CEILING DETAIL @ LEVELS 1 & 3**  
 3" = 1'-0"



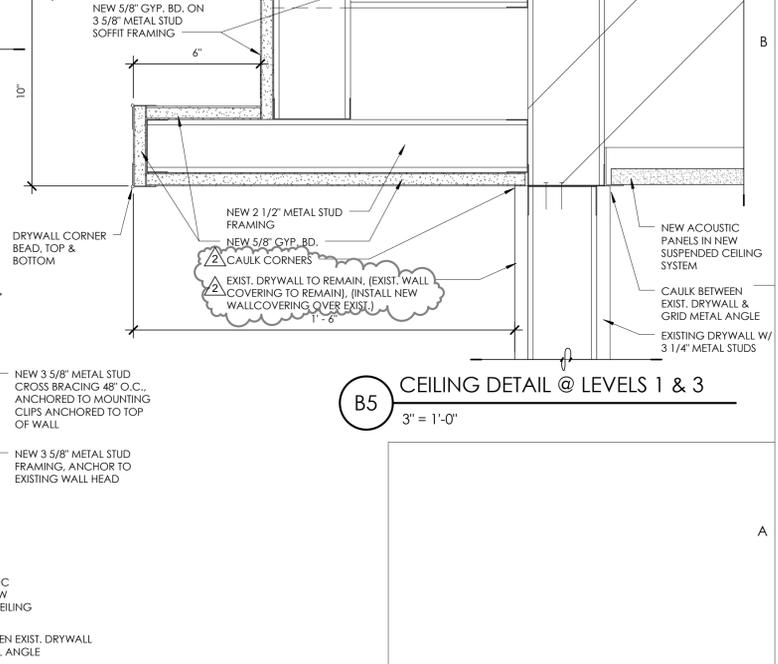
**A1 CEILING DETAIL**  
 3" = 1'-0"



**A2 CEILING DETAIL**  
 3" = 1'-0"



**A4 CEILING DETAIL @ LEVEL 2**  
 3" = 1'-0"



**A5 CEILING DETAIL @ LEVEL 2**  
 3" = 1'-0"

**WSU- MILLER ADMINISTRATION**  
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DFCM Project No. 14031810  
 SAA Project No. 214016  
 Drawing Title

CEILING DETAILS

Sheet Number

**AE541**

DFCM approval

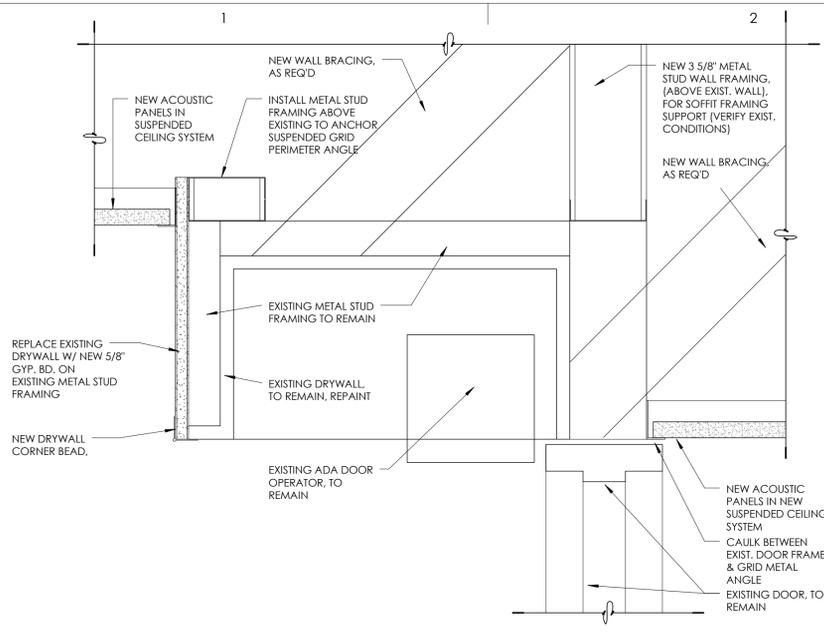
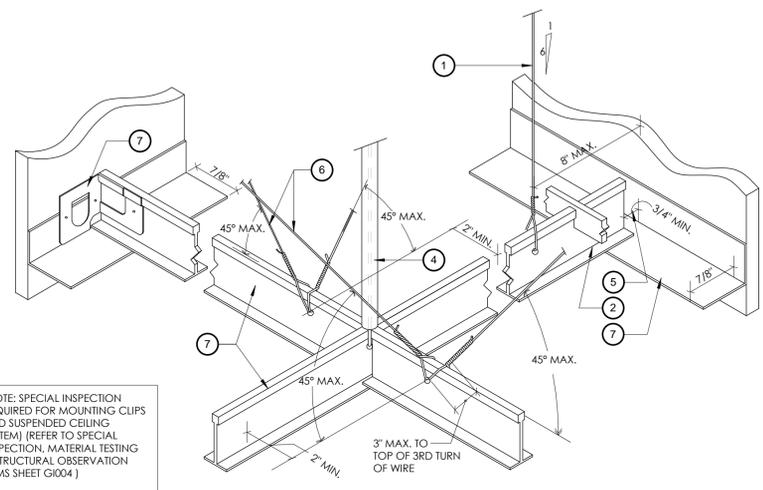


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### SUSPENDED CEILING SEISMIC BRACING NOTES

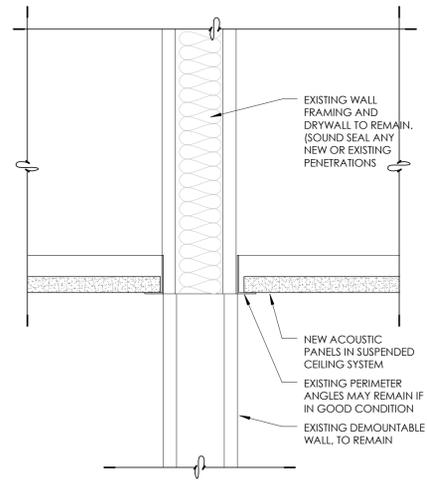
- 1 2 GAUGE HANGER WIRES @ 4'-0" O.C. OR 10 GAUGE HANGER WIRES @ 5'-0" O.C. ATTACHMENT AT MAIN BEAM AND AT STRUCTURE SHALL BE SECURED WITH A MIN. OF THREE COMPLETE TURNS AND MUST BE CAPABLE OF SUPPORTING 100 LBS. TERMINAL ENDS SUPPORTED WITHIN 8" OF EACH WALL W/ 12 GA. WIRE PLUMB TO WITHIN ONE SIX, ATTACHED TO ADJACENT WALL OR STRUCTURE ABOVE W/ A MIN. OF THREE COMPLETE TURNS.
- 2 UNATTACHED ENDS OF GRID MUST HAVE 3/4" CLEARANCE FROM WALL AND MUST REST UPON AND BE FREE TO SLIDE ON THE MOULDING.
- 3 MAIN BEAMS MUST BE HEAVY DUTY. MAIN BEAM AND CROSS TEE INTERSECTIONS AND SPLICES MUST HAVE CONNECTIONS AND TENSION.
- 4 RIDGED SEISMIC STRUT W/ STIFFNESS ADEQUATE TO RESIST THE VERTICAL LOADS IMPOSED. SHALL BE ATTACHED TO THE SUSPENSION SYSTEM AND TO THE STRUCTURE ABOVE @ EACH BRACING LOCATION. HORIZ. RESTRAINT POINTS SHALL BE NO MORE THAN 12'-0" O.C. IN EACH DIRECTION AND THE FIRST POINT SHALL BE WITHIN 6'-0" OF EACH WALL.
- 5 SPACER BAR, OR OTHER SUITABLE SYSTEM TO KEEP PERIMETER COMPONENTS FROM SPREADING APART.
- 6 SPLAY WIRE BRACING SHALL BE CLUSTERS OF FOUR 12-GAUGE WIRES ATTACHED TO THE MAIN BEAM WITHIN 2" OF THE CROSS TEE INTERSECTION. WIRES ARE ARRAYED 90 DEGREES FROM EACH OTHER AT ANGLE NOT EXCEEDING 45 DEGREES FROM THE PLANE OF THE CEILING. ATTACHMENT OF THE BRACING WIRES TO THE MAIN BEAM AND TO THE STRUCTURE SHALL BE CAPABLE OF SUPPORTING THE GREATER OF 200 LBS. OR THE ACTUAL DESIGN LOAD W/ A SAFETY FACTOR OF 2.
- 7 7/8" WALL MOULDING BERC2 CLIP, SCREWED ON ATTACHED WALLS & UNSCREWED ON UNATTACHED WALLS. (IBC)

(NOTE: SPECIAL INSPECTION REQUIRED FOR MOUNTING CLIPS AND SUSPENDED CEILING SYSTEM) (REFER TO SPECIAL INSPECTION, MATERIAL TESTING & STRUCTURAL OBSERVATION ITEMS SHEET G1004)

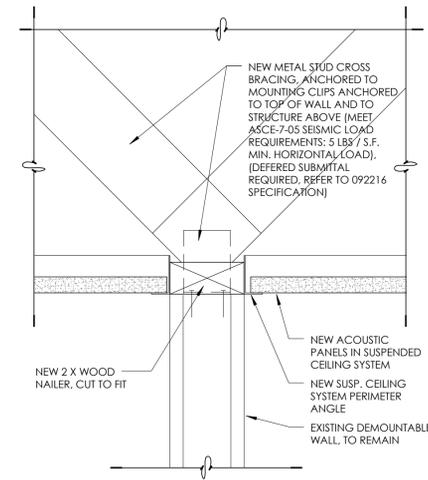


**C1** CEILING DETAIL @ LEVEL 1 ADA OPERATOR  
3" = 1'-0"

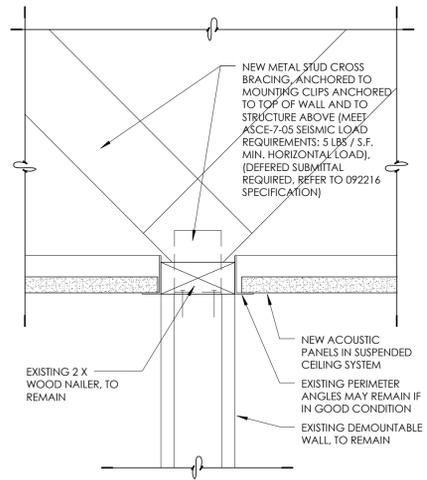
**1** Suspended Ceiling Seismic Bracing Detail  
3" = 1'-0"



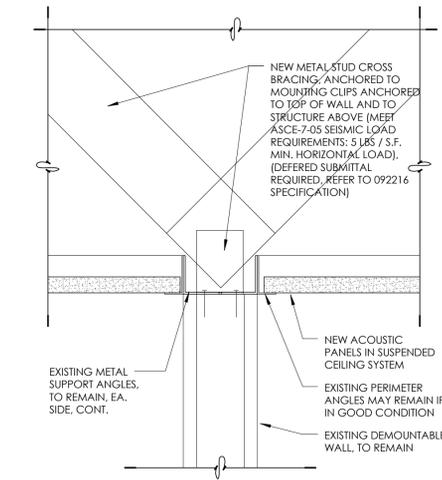
**H** CEILING DETAIL @ DEMOUNTABLE WALLS  
3" = 1'-0"



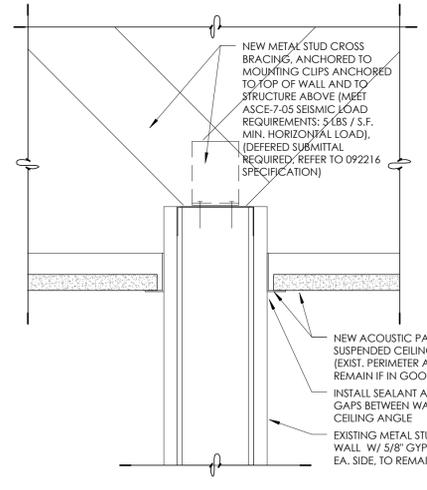
**G** CEILING DETAIL @ DEMOUNTABLE WALLS  
3" = 1'-0"



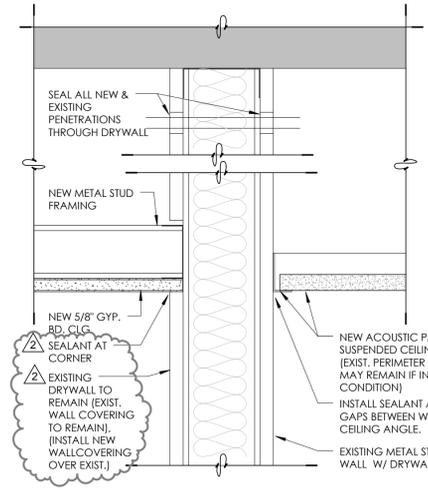
**F** CEILING DETAIL @ DEMOUNTABLE WALLS  
3" = 1'-0"



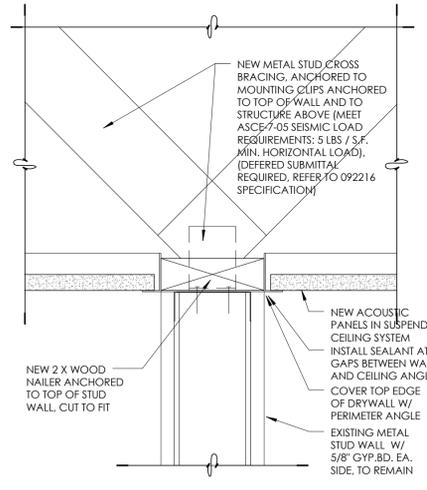
**E** CEILING DETAIL @ DEMOUNTABLE WALLS  
3" = 1'-0"



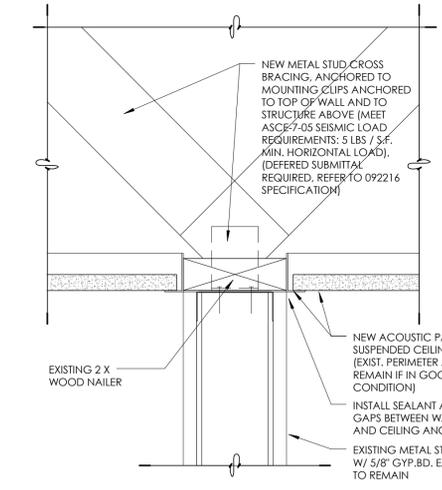
**A** CEILING DETAIL @ STEEL STUD WALLS  
3" = 1'-0"



**C** CEILING DETAIL @ STEEL STUD WALLS  
3" = 1'-0"



**B** CEILING DETAIL @ STEEL STUD WALLS  
3" = 1'-0"



**D** CEILING DETAIL @ STEEL STUD WALLS  
3" = 1'-0"

**WSU- MILLER ADMINISTRATION**  
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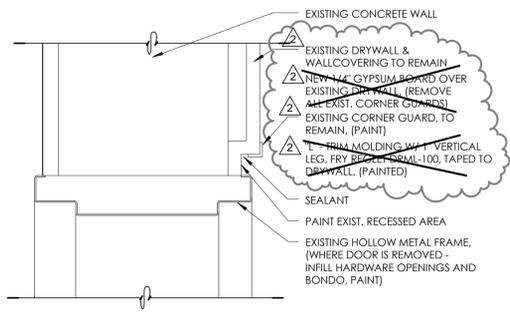
DFCM Project No. 14031810  
 SAA Project No. 214016  
 Drawing Title

CEILING DETAILS

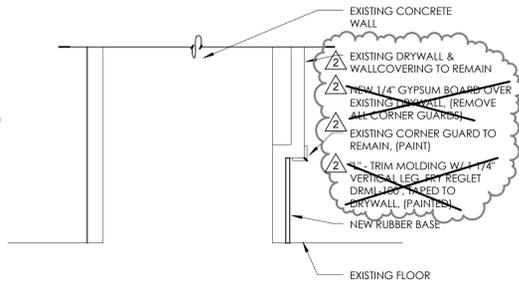
Sheet Number

**AE542**

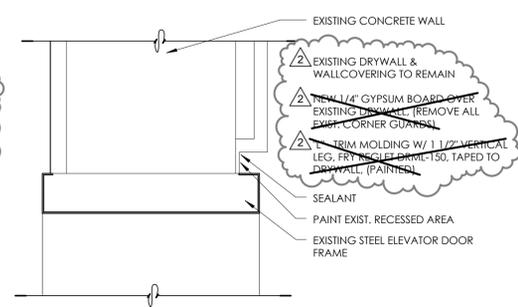
DFCM approval



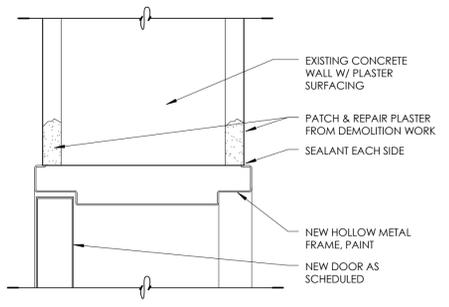
**D1** Exist. Hollow Metal Door Head & Jamb  
3" = 1'-0"



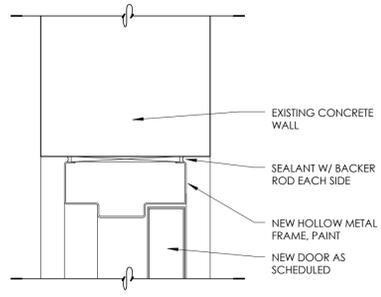
**D2** Base Detail  
3" = 1'-0"



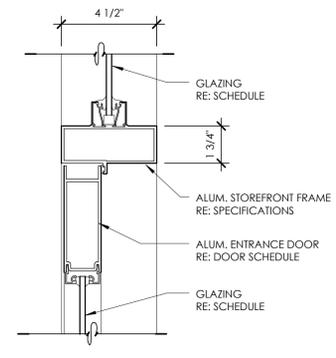
**D3** Exist. Elevator Door Head & Jamb  
3" = 1'-0"



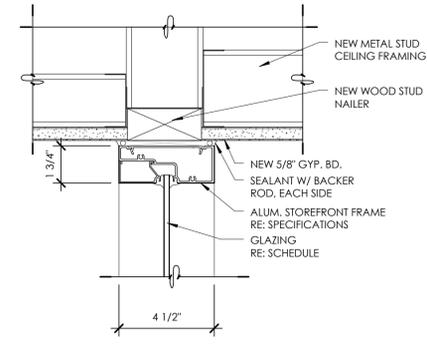
**C1** Hollow Metal Door Head & Jamb  
3" = 1'-0"



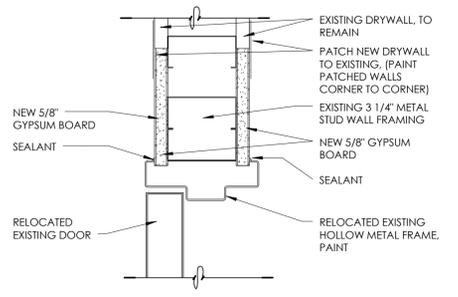
**C2** Hollow Metal Door Head & Jamb  
3" = 1'-0"



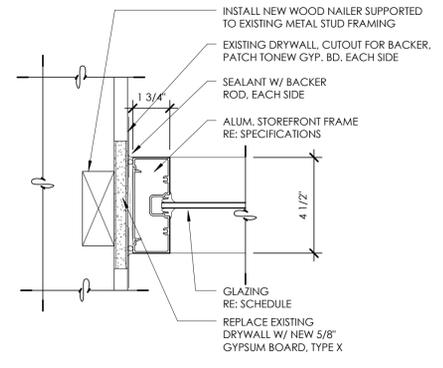
**C3** Storefront Door Head / Transom  
3" = 1'-0"



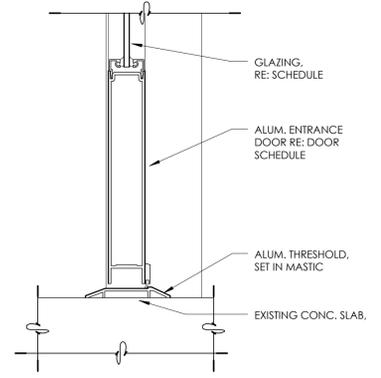
**C4** Storefront Head Detail  
3" = 1'-0"



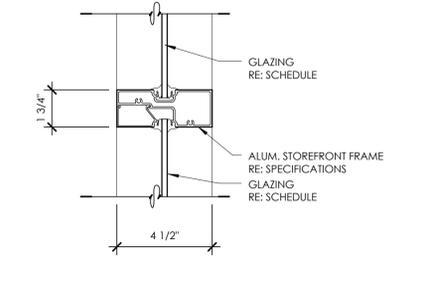
**B1** Relocated Hollow Metal Frame  
3" = 1'-0"



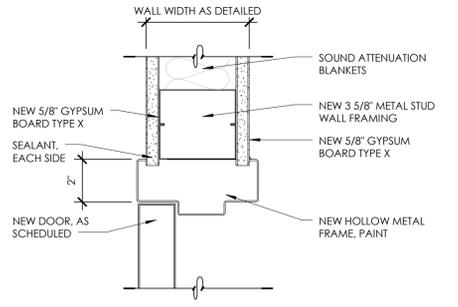
**B2** Storefront Jamb Detail  
3" = 1'-0"



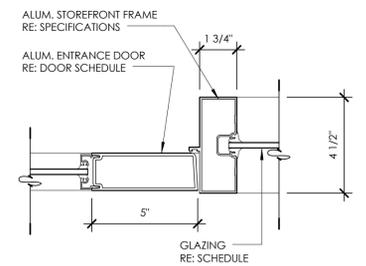
**B3** Storefront Door Sill  
3" = 1'-0"



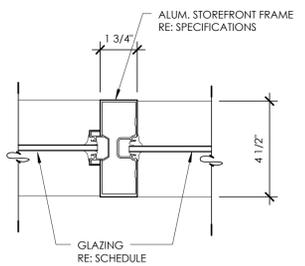
**B4** Storefront Horiz. Mullion  
3" = 1'-0"



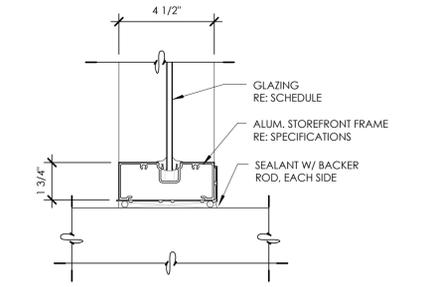
**A1** New Hollow Metal Jamb / Head Sim.  
3" = 1'-0"



**A2** Storefront Door Mullion  
3" = 1'-0"



**A3** Storefront Transom Mullion  
3" = 1'-0"



**A4** Storefront Sill Detail  
3" = 1'-0"

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DFCM Project No. 14031810  
SAA Project No. 214016  
Drawing Title

**STOREFRONT & HOLLOW METAL DETAILS**

Sheet Number

**AE583**

#	NAME	TEXT SIZE	TEXT	BRAILLE TEXT	BRAILLE SIZE	SIGN TYPE	OVERALL DIMENSIONS	TEXT & SIGN COLOR	MOUNTING	COMMENTS
101	RECEPTION	MATCH EXISTING	101, RECEPTION, AFFIRMATIVE ACTION/EQUAL OPPORTUNITY	101	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	WALL	
211	CORRIDOR	MATCH EXISTING	211, WEB DEVELOPMENT, INFORMATION SYSTEMS & SERVICES	211	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	WALL	
211K	CONFERENCE	MATCH EXISTING	211K, CONFERENCE	211K	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	WALL	
214	RECEPTION	MATCH EXISTING	214, RECEPTION, INTERNAL AUDIT	214	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	WALL	
304	RECEPTION	MATCH EXISTING	304, RECEPTION, STUDENT AFFAIRS	304	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	WALL	
306	RECEPTION	MATCH EXISTING	306, RECEPTION, ACADEMIC AFFAIRS	306	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	WALL	
307	RECEPTION	MATCH EXISTING	307, RECEPTION, UNIVERSITY LEGAL COUNSEL	307	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	WALL	
313	RECEPTION	MATCH EXISTING	313, RECEPTION, INFORMATION TECHNOLOGY DIVISION	313	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	WALL	
316	RECEPTION	MATCH EXISTING	316, RECEPTION, INFORMATION SYSTEMS & SERVICES DATA ADMINISTRATION	316	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	WALL	

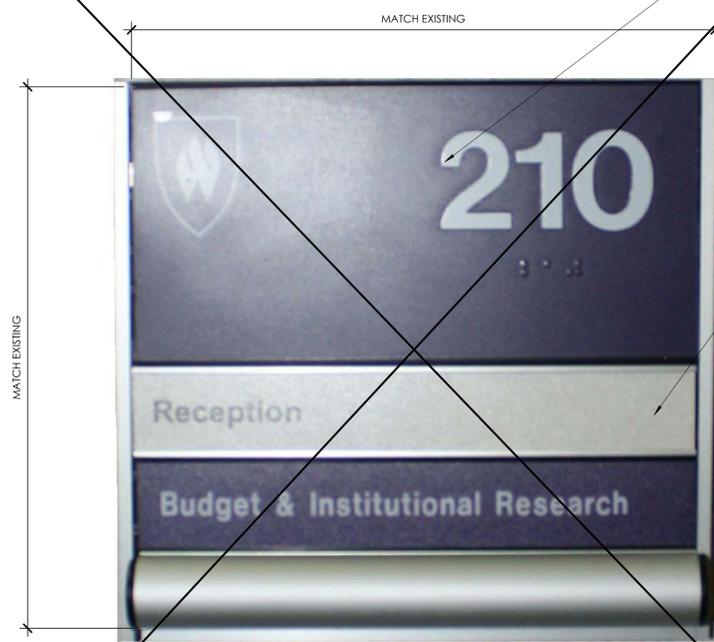


PHOTO OF EXISTING SIGN FOR MATCHING EXISTING

OMIT SIGNAGE, (OWNER WILL PROVIDE & INSTALL SIGNAGE)

MATCH LAYOUT MATERIALS AND COLOR OF EXISTING SIGN, REFER TO SIGNAGE SCHEDULE

FIRE EXTINGUISHER

7/8" BLACK LETTERS

LEVEL 2 - FIRE CABINET DECAL 1

FIRE EXTINGUISHER

7/8" BLACK LETTERS

LEVEL 3 - FIRE CABINET DECAL 2

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DFCM Project No. 14031810  
 SAA Project No. 214016  
 Drawing Title

SIGNS

Sheet Number

**AE700**

DFCM approval

**SHEET NOTES**

- 1 PROVIDE NEW CEILING CASSETTE IN THIS APPROXIMATE LOCATION. ROUTE OUTSIDE AIR DUCT TO UNIT AND BALANCE TO CFM SHOWN IN SCHEDULE. PROVIDE CONDENSATE PUMP AND ROUTE CONDENSATE PIPING TO JANITORS SINK.
- 2 PROVIDE DUCTED VRF UNIT. PROVIDE LINED SOUND BOOT WITH OPEN END INTO PLENUM. TIE OUTSIDE AIR INTO RETURN BOOT AS FAR AWAY FROM UNIT AS POSSIBLE.
- 3 PROVIDE NEW WALL MOUNTED VRF UNIT IN THIS APPROXIMATE LOCATION. PROVIDE CONDENSATE PUMP AND ROUTE CONDENSATE PIPING TO JANITORS SINK.
- 4 ROUTE EXHAUST AIR DUCT HIGH IN THE MECHANICAL ROOM THEN DROP DOWN EXPOSED AND INTO THE CEILING SPACE OF THE RESTROOMS. FIELD VERIFY. TRANSFER AIR SHALL TERMINATE IN THE MECHANICAL ROOM WITH OPEN END THEN ROUTE TO TRANSFER GRILLES IN THE RESTROOMS AS SHOWN.
- 5 COORDINATE WITH G.C. TO CORE DRILL THROUGH VAULT FOR EXHAUST DUCTWORK.
- 6 COORDINATE WITH EXISTING STRUCTURE AND NEW CEILINGS TO FIT NEW DUCTWORK IN THIS LOCATION.
- 7 PROVIDE REFRIGERANT PIPING BRANCH CONTROLLERS IN THIS APPROXIMATE LOCATION. INSTALL PER MANUFACTURERS REQUIREMENTS WITH RECOMMENDED CLEARANCE.
- 8 PROVIDE FIRE SMOKE DAMPER ON DUCTWORK PENETRATING SHAFT WALL.

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**WSU- MILLER ADMINISTRATION**

MEP Upgrades and Remodel

3848 HARRISON BLVD.  
OGDEN, UTAH 84401

Project Name

Issued		
No.	Date	Description
1	01.16.15	DFCM PLAN REVIEW
2	02.03.15	BID SET

Revision		
No.	Date	Description
2	03/20/15	ADD#2

DFCM Project No. 14031810

SAA Project No. 214016

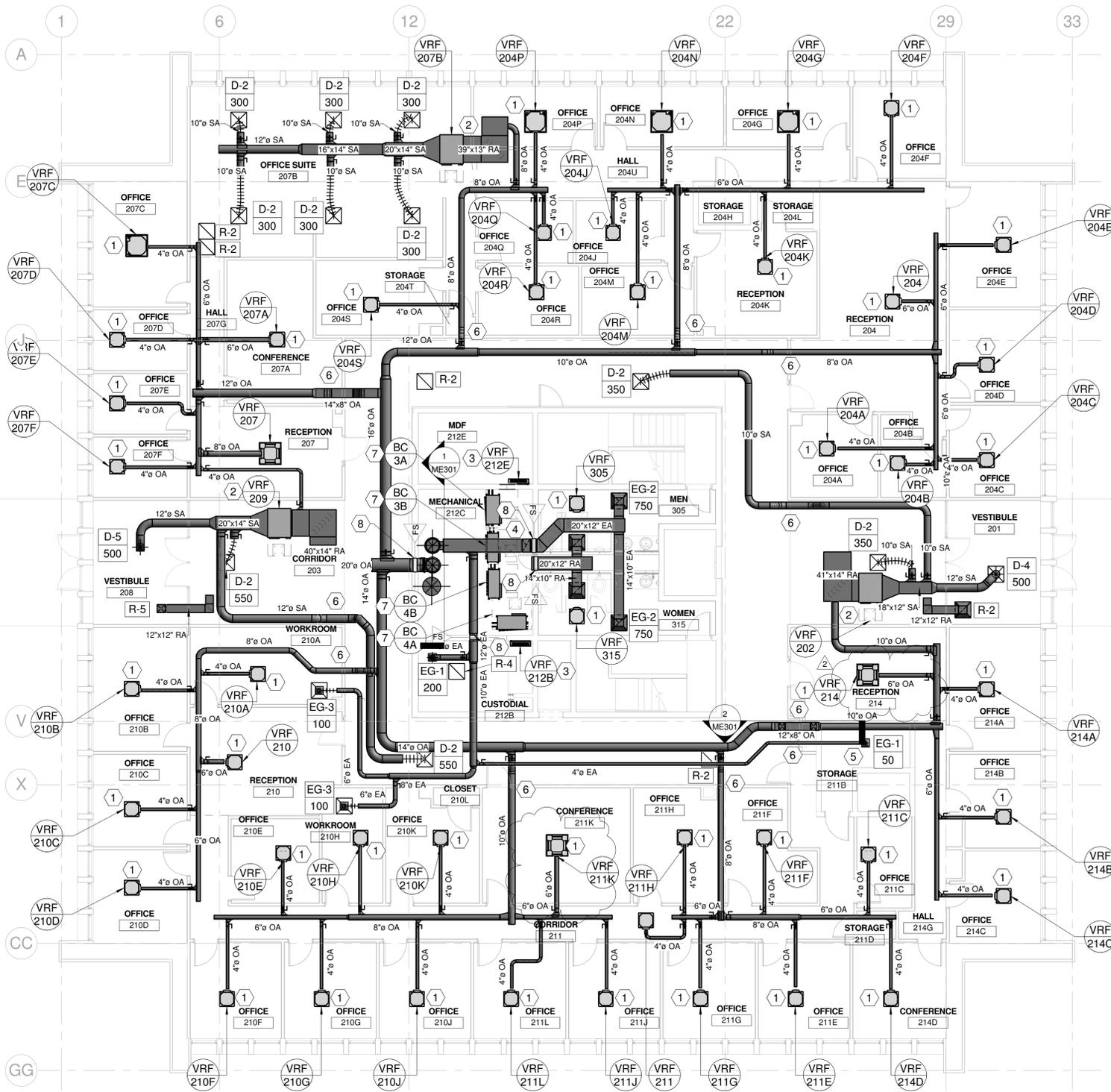
Drawing Title

MECHANICAL LEVEL 2 PLAN

Sheet Number

**ME102**

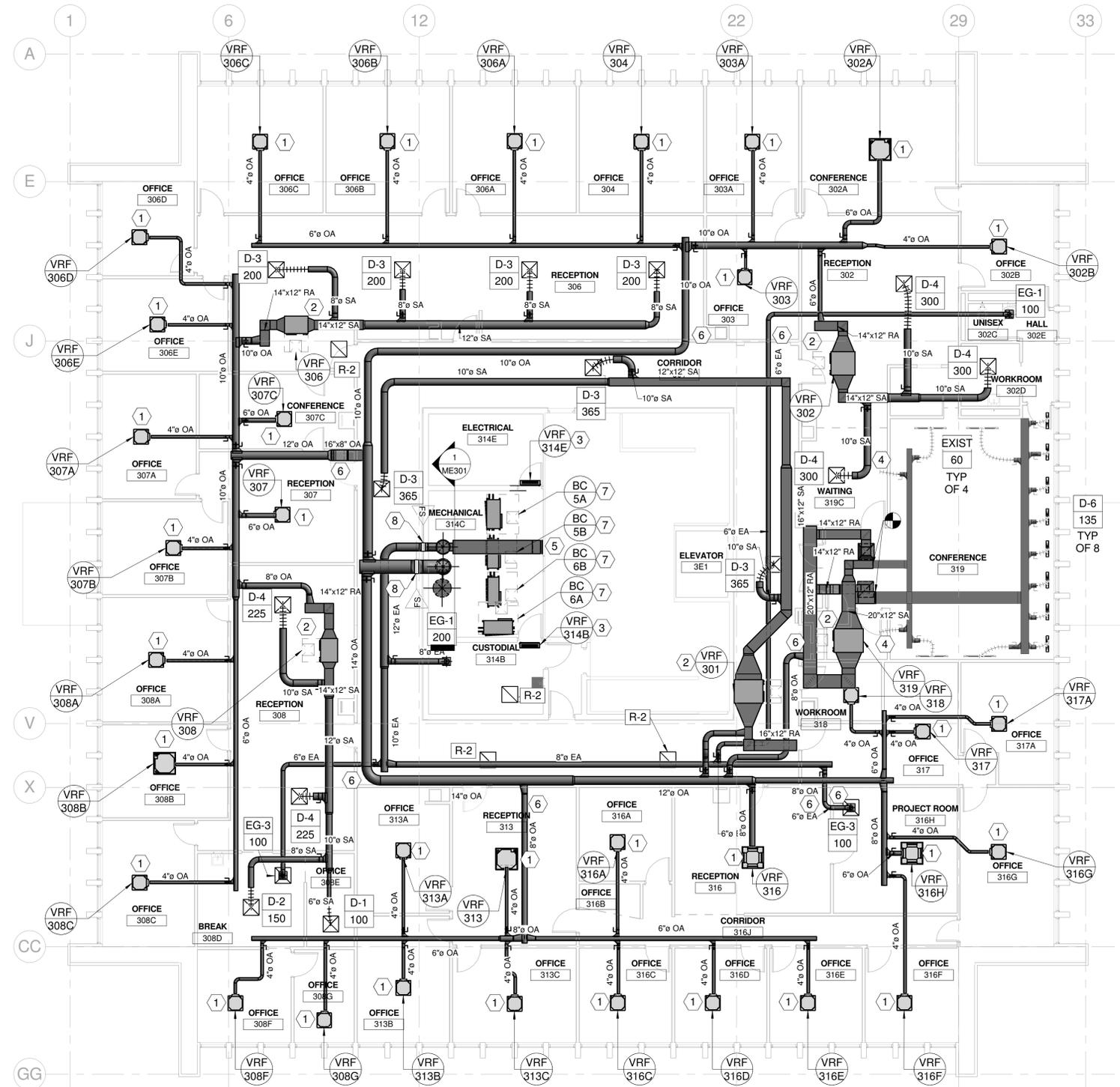
DFCM approval



MECHANICAL LEVEL 2 PLAN

1/8" = 1'-0"





1 MECHANICAL LEVEL 3 PLAN  
1/8" = 1'-0"

**SHEET NOTES**

- 1 PROVIDE NEW CEILING CASSETTE IN THIS APPROXIMATE LOCATION. ROUTE OUTSIDE AIR DUCT TO UNIT AND BALANCE TO CFM SHOWN IN SCHEDULE. PROVIDE CONDENSATE PUMP AND ROUTE CONDENSATE PIPING TO JANITORS SINK.
- 2 PROVIDE DUCTED VRF UNIT. PROVIDE LINED SOUND BOOT WITH OPEN END INTO PLENUM. TIE OUTSIDE AIR INTO RETURN BOOT AS FAR AWAY FROM UNIT AS POSSIBLE.
- 3 PROVIDE NEW WALL MOUNTED VRF UNIT IN THIS APPROXIMATE LOCATION. PROVIDE CONDENSATE PUMP AND ROUTE CONDENSATE PIPING TO JANITORS SINK.
- 4 CUT AND CAP EXISTING SUPPLY DUCT IN THIS APPROXIMATE LOCATION. FIELD VERIFY.
- 5 ROUTE EXHAUST AIR DUCT HIGH IN THE MECHANICAL ROOM THEN DROP DOWN EXPOSED AND INTO THE CEILING SPACE OF THE RESTROOMS. FIELD VERIFY. TRANSFER AIR SHALL TERMINATE IN THE MECHANICAL ROOM WITH OPEN END THEN ROUTE TO TRANSFER GRILLES IN THE RESTROOMS AS SHOWN.
- 6 COORDINATE WITH EXISTING STRUCTURE AND NEW CEILINGS TO FIT NEW DUCTWORK IN THIS LOCATION.
- 7 PROVIDE REFRIGERANT PIPING BRANCH CONTROLLERS IN THIS APPROXIMATE LOCATION. INSTALL PER MANUFACTURERS REQUIREMENTS WITH RECOMMENDED CLEARANCE.
- 8 PROVIDE FIRE SMOKE DAMPER ON DUCTWORK PENETRATING SHAFT WALL.

**GENERAL NOTES:**

1. COORDINATE WITH G.C. TO CORE DRILL THROUGH WALLS SURROUNDING THE MECHANICAL ROOM AND CUSTODIAL CLOSETS.

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DFCM Project No. 14031810  
SAA Project No. 214016  
Drawing Title

MECHANICAL LEVEL 3 PLAN

Sheet Number

**ME103**

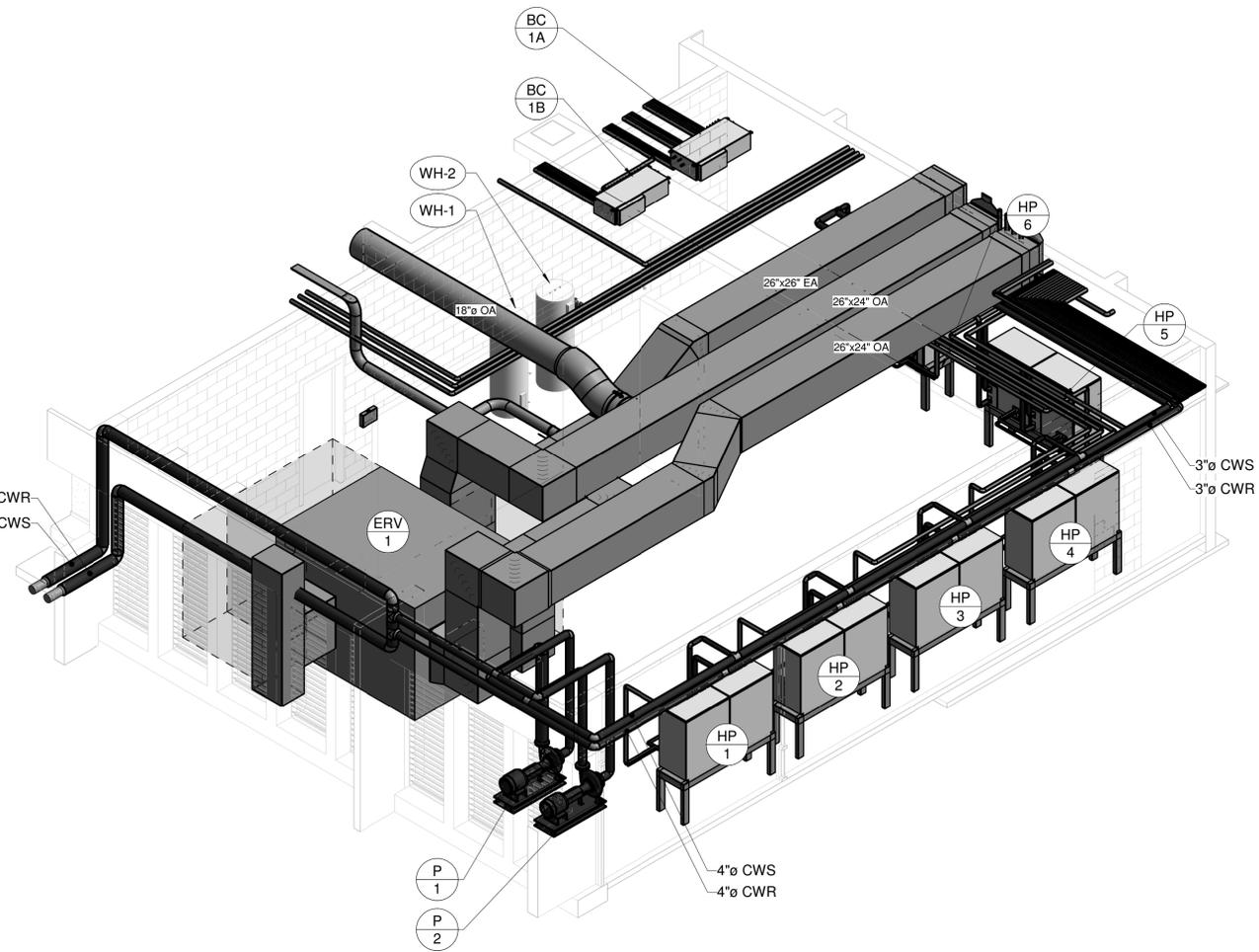
**SHEET NOTES**

- 1 BLANK OFF EXISTING LOUVER ON THE INSIDE WITH INSULATED SHEET METAL PANEL. FIELD VERIFY EXACT SIZE. SEAL TIGHT.
- 2 PROVIDE INSULATED PLENUM BOX AROUND THE EXISTING LOUVER AND DUCT TO THE RELIEF AIR OUTLET ON THE ERV-1 UNIT.
- 3 PROVIDE FLOW BTU METER ON CONDENSER WATER SUPPLY LINE.
- 4 PROVIDE WATER COOLED VRF HEAT PUMP UNIT. PIPE PER DETAILS AND INSTALL PER MANUFACTURERS RECOMMENDATIONS.
- 5 PROVIDE INDOOR PACKAGED AND DUCTED ENERGY RECOVERY VENTILATION UNIT. UNIT SHALL BE DISSEMBLED TO FIT THROUGH A STANDARD MAN DOOR THEN REASSEMBLED IN THE MECHANICAL ROOM.
- 6 PROVIDE REFRIGERANT PIPING FROM BRANCH CONTROLLERS TO VRF EVAPORATORS. COORDINATE PIPE SIZING WITH SCHEMATICS AND MANUFACTURERS RECOMMENDATIONS.
- 7 ADD ALTERNATE #2: PROVIDE BASE MOUNTED PUMPS IN THIS APPROXIMATE LOCATION. COORDINATE WITH ELECTRICAL TO PROVIDE VFD.

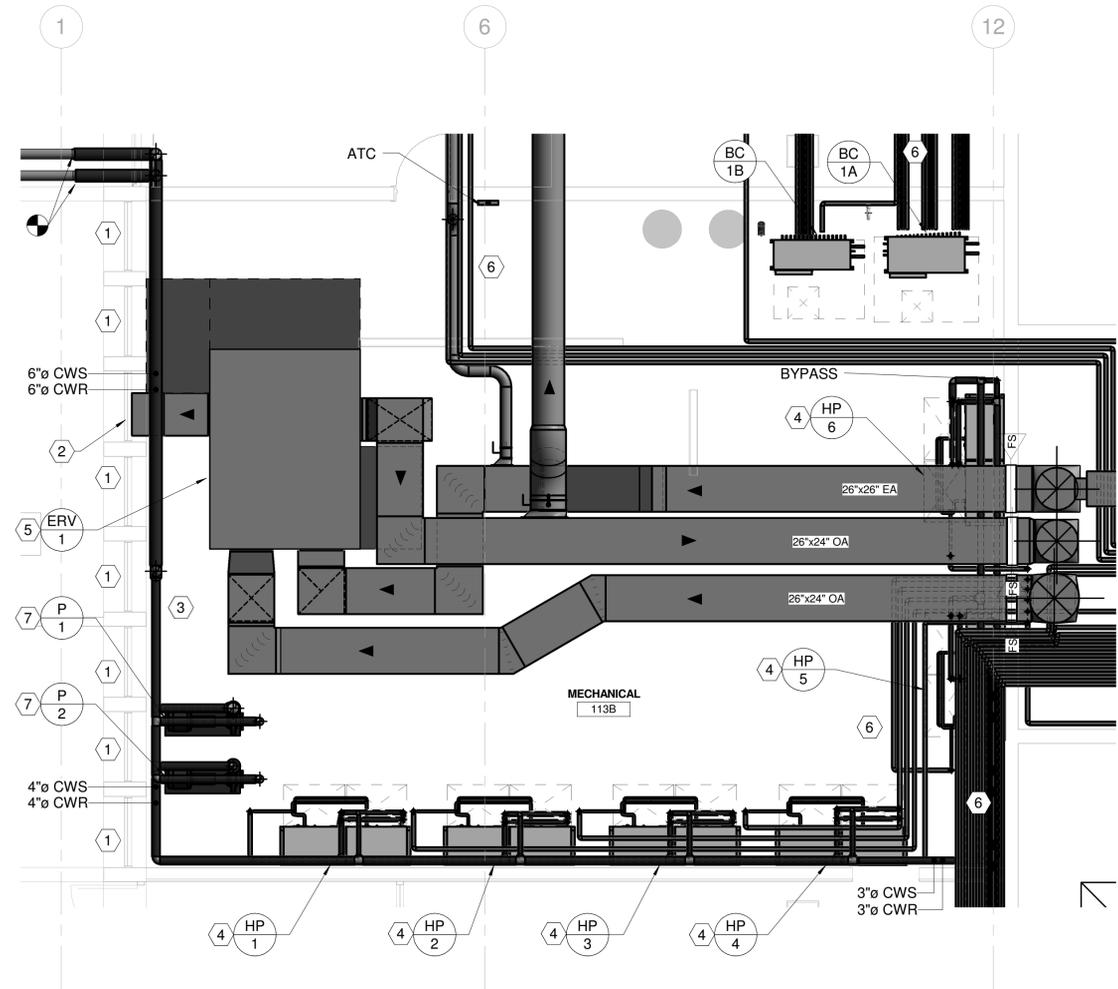
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1 MECHANICAL ROOM ISOMETRIC



2 MECHANICAL ROOM LARGE SCALE PLAN  
 1/4" = 1'-0"

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DFCM Project No. 14031810  
 SAA Project No. 214016  
 Drawing Title

MECHANICAL ROOM PLANS

Sheet Number

**ME401**

DFCM approval

ENERGY RECOVERY VENTILATOR SCHEDULE																						
TAG		AREA SERVED	EXHAUST AIR				OUTSIDE AIR				ELECTRICAL				DIMENSIONS					OPERATING WEIGHT	MANUF & MODEL	SCHEDULE NOTES
TYPE	#		CFM	ESP	EAT DB	LAT DB	CFM	ESP	EAT DB	LAT DB	VOLTAGE	PHASE	FREQUENCY	MCA	MOC	LENGTH	WIDTH	HEIGHT				
ERV	1	BUILDING VENTILATION	4600 CFM	1.5 in-wg	70 °F	35 °F	5100 CFM	1.5 in-wg	5 °F	35 °F	460 V	3	60 Hz	44.9 A	60 A	116"	96"	90"	2400 lb	RENEWAIRE HE6XIN	1,2,3,4,5,6,7	

1. ALL UNITS OVER 2,000 CFM MUST BE EQUIPPED WITH SMOKE DETECTORS.
2. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.
3. INDOOR ENERGY RECOVERY VENTILATOR WITH SOLID CORE.
4. ERV SHALL BE CONTROLLED AND INTERLOCKED WITH THE VRF SYSTEM.
5. PROVIDE MERV 8 FILTERS.
6. PROVIDE SINGLE POINT POWER CONNECTION WITH FACTORY INSTALLED FUSED DISCONNECT, MOTOR STARTERS, AND MOTORIZED DAMPERS ON OUTSIDE AIR AND EXHAUST AIR.
7. UNIT SHALL BE DISSEMBLED TO FIT THROUGH A STANDARD MAN DOOR THEN REASSEMBLED IN THE MECHANICAL ROOM.

VRF SCHEDULE - HEAT RECOVERY CONDENSER UNIT																			
TAG		AREA SERVED	COOLING (BTU/HR)	HEATING (BTU/HR)	ELECTRICAL				CONDENSER WATER				EER	OPERATING WEIGHT	MANUF & MODEL	SCHEDULE NOTES			
TYPE	#				VOLTAGE	PHASE	FREQUENCY	MODULE 1	MODULE 2	GPM	PRESSURE DROP (FT)								
HP	1	1ST LEVEL NW	192000 Btu/h	214000 Btu/h	460 V	3	60 Hz	11 A	15 A	11 A	15 A	50 GPM	6	10	900 lb	MITSUBISHI PQHY--P192YSHMU-A	1,2,3,4,5		
HP	2	1ST LEVEL SE	192000 Btu/h	214000 Btu/h	460 V	3	60 Hz	11 A	15 A	11 A	15 A	50 GPM	6	10	900 lb	MITSUBISHI PQHY--P192YSHMU-A	1,2,3,4,5		
HP	3	2ND LEVEL NW	240000 Btu/h	270000 Btu/h	460 V	3	60 Hz	14 A	20 A	14 A	20 A	50 GPM	6	10	900 lb	MITSUBISHI PQHY--P240TSHMU	1,2,3,4,5		
HP	4	2ND LEVEL SE	240000 Btu/h	270000 Btu/h	460 V	3	60 Hz	14 A	20 A	14 A	20 A	50 GPM	6	10	900 lb	MITSUBISHI PQHY--P240TSHMU	1,2,3,4,5		
HP	5	3RD LEVEL SE	240000 Btu/h	270000 Btu/h	460 V	3	60 Hz	14 A	20 A	14 A	20 A	50 GPM	6	10	900 lb	MITSUBISHI PQHY--P240TSHMU	1,2,3,4,5		
HP	6	3RD LEVEL NW	240000 Btu/h	270000 Btu/h	460 V	3	60 Hz	14 A	20 A	14 A	20 A	50 GPM	6	10	900 lb	MITSUBISHI PQHY--P240TSHMU	1,2,3,4,5		

1. REFRIGERANT R-410A.
2. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.
3. PROVIDE WITH CONTROLS SYSTEM, INCLUDING PANEL, SENSORS, PROGRAMMING, GRAPHICS, ETC. AS REQUIRED FOR A COMPLETE AND FUNCTIONING SYSTEM. SYSTEM SHALL BE WEB ENABLED FOR MONITORING AND ADJUSTMENTS. INCLUDE ENABLE/DISABLE OR ERV UNITS.
4. PROVIDE ANY ADDITIONAL PIPING, REFRIGERANT, ETC TO ACCOMMODATE ACTUAL PIPING LENGTHS.
5. WEBER STATE UNIVERSITY'S CAMPUS STANDARD IS MITSUBISHI VRF AND JOHNSON CONTROLS. IF OTHER MANUFACTURERS BID THE VRF EQUIPMENT THE CONTRACTOR IS RESPONSIBLE TO COORDINATE THE NECESSARY ELECTRICAL AND OTHER CHANGES. NO CHANGE ORDERS WILL BE ACCEPTED FROM MODIFICATIONS CREATED FROM USING ANOTHER MANUFACTURER.

VRF BRANCH CONTROLLER SCHEDULE								
TAG		AREA SERVED	ELECTRICAL			FULL LOAD CURRENT	MANUF & MODEL	SCHEDULE NOTES
TYPE	#		VOLTAGE	PHASE	FREQUENCY			
BC	1A	HP-1 MAIN	208 V	1	60 Hz	1.3 A	MITSUBISHI CMB-P1016NU-GA	1,2
BC	1B	HP-1 SUB	208 V	1	60 Hz	1.2 A	MITSUBISHI CMB-P1016NU-HB	1,2
BC	2A	HP-2 MAIN	208 V	1	60 Hz	1.3 A	MITSUBISHI CMB-P1016NU-GA	1,2
BC	2B	HP-2 SUB	208 V	1	60 Hz	1.2 A	MITSUBISHI CMB-P1016NU-HB	1,2
BC	3A	HP-3 MAIN	208 V	1	60 Hz	1.3 A	MITSUBISHI CMB-P1016NU-GA	1,2
BC	3B	HP-3 SUB	208 V	1	60 Hz	1.2 A	MITSUBISHI CMB-P1016NU-HB	1,2
BC	4A	HP-4 MAIN	208 V	1	60 Hz	1.3 A	MITSUBISHI CMB-P1016NU-GA	1,2
BC	4B	HP-4 SUB	208 V	1	60 Hz	1.2 A	MITSUBISHI CMB-P1016NU-HB	1,2
BC	5A	HP-5 MAIN	208 V	1	60 Hz	1.3 A	MITSUBISHI CMB-P1016NU-GA	1,2
BC	5B	HP-5 SUB	208 V	1	60 Hz	1.2 A	MITSUBISHI CMB-P1016NU-HB	1,2
BC	6A	HP-6 MAIN	208 V	1	60 Hz	1.3 A	MITSUBISHI CMB-P1016NU-GA	1,2
BC	6B	HP-6 SUB	208 V	1	60 Hz	1.2 A	MITSUBISHI CMB-P1016NU-HB	1,2

1. COORDINATE BRANCH CONTROLLER LAYOUT, SIZE, QUANTITY, ETC WITH MANUFACTURER. COORDINATE POWER WITH ELECTRICAL.
2. SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS.

PENTHOUSE SCHEDULE											
TAG	MAX FLOW	OVERALL DIMENSION			THROAT SIZE		MAX NC	FREE AREA	VELOCITY	MANUF & MODEL	SCHEDULE NOTES
		LENGTH	WIDTH	HEIGHT	LENGTH	WIDTH					
PH-1	5200 CFM	64"	52"	2' - 6"	48"	36"	25	12 ft²	500 ft/min	RUSKIN PH811	1

1. PROVIDE INSECT SCREEN.

PUMP SCHEDULE															
TAG		AREA SERVED	PUMP TYPE	GPM	PUMP HEAD	PUMP SUCTION SIZE	PUMP DISCHARGE SIZE	ELECTRICAL			PUMP HP	PUMP SPEED	OPERATING WEIGHT	MANUF & MODEL	SCHEDULE NOTES
TYPE	#							VOLTAGE	PHASE	FREQUENCY					
P	1	COND LOOP	BASE MOUNTED	300 GPM	45 ftH2O	4"	3"	460 V	3	60 Hz	5 hp	1150	450 lb	B&G 1510 3EB	1,2
P	2	COND LOOP	BASE MOUNTED	300 GPM	45 ftH2O	4"	3"	460 V	3	60 Hz	5 hp	1150	450 lb	B&G 1510 3EB	1,2

1. ADD ALTERNATE #2.
2. COORDINATE WITH ELECTRICAL FOR VFD.

EXHAUST FAN SCHEDULE														
TAG		AREA SERVED	CFM	ESP	ELECTRICAL			RPM	HP	SONES	OPERATING WEIGHT	MANUF & MODEL	SCHEDULE NOTES	
TYPE	#				VOLTAGE	PHASE	FREQUENCY							
EF	1	ELEV EQUIP ROOM	330 CFM	0.30 in-wg	120 V	1	60 Hz	1200	0.17 hp	2.9	40 lb	COOK GN-520	1	

1. SHALL BE CONTROLLED OFF OF A THERMOSTAT IN THE ELEVATOR EQUIPMENT ROOM.

DIFFUSER AND GRILLE SCHEDULE												
TAG	MAX FLOW	FACE SIZE		NECK SIZE		CEILING TYPE	BLOW PATTERN	THROW @ 50 FPM	MAX NC	MANUF & MODEL	SCHEDULE NOTES	
		LENGTH	WIDTH	LENGTH/DIAMETER	WIDTH							
D-1	200 CFM	24"	24"	6"	0"	LAY-IN	4 WAY	8'	25	PRICE SPD		
D-2	325 CFM	24"	24"	8"	0"	LAY-IN	4 WAY	10'	25	PRICE SPD		
D-3	450 CFM	24"	24"	10"	0"	LAY-IN	4 WAY	11'	25	PRICE SPD		
D-4	600 CFM	24"	24"	12"	0"	LAY-IN	4 WAY	13'	25	PRICE SPD		
D-5	450 CFM	12"	12"	10"	0"	HARD	4 WAY	11'	25	PRICE SPD		
D-6	260 CFM	24"	6"	8"	0"	LAY-IN	1 WAY	0'	20	PRICE AS	1	
EG-1	375 CFM	12"	12"	12"	12"	HARD	N/A	0'	25	PRICE 535		
EG-2	1200 CFM	24"	24"	24"	24"	HARD	N/A	0'	25	PRICE 535		
EG-3	600 CFM	24"	24"	12"	12"	LAY-IN	N/A	0'	25	PRICE 535		
EG-4	1200 CFM	24"	24"	24"	24"	LAY-IN	N/A	0'	25	PRICE 535		
R-1	600 CFM	24"	12"	24"	12"	LAY-IN	N/A	0'	25	PRICE 535		
R-2	1200 CFM	24"	24"	24"	24"	LAY-IN	N/A	0'	25	PRICE 535		
R-3	600 CFM	12"	24"	12"	24"	HARD	N/A	0'	25	PRICE 535		
R-4	1200 CFM	24"	24"	24"	24"	HARD	N/A	0'	25	PRICE 535		
R-5	1200 CFM	12"	12"	12"	12"	HARD	N/A	0'	25	PRICE 535		
TG-1	1200 CFM	24"	24"	24"	24"	HARD	N/A	0'	25	PRICE 535		

1. PROVIDE (2) 1.5" SLOTS. PROVIDE PRE-ENGINEERED PLUNUM BOX. PROVIDE FRAME FOR LAY-IN GRID.

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DFCM Project No. 14031810  
SAA Project No. 214016  
Drawing Title

MECHANICAL SCHEDULES

Sheet Number

ME601

DFCM approval



VRF SCHEDULE - INDOOR UNIT (CONT)																
TAG	TYPE	#	AREA SERVED	EQUIPM ENT SERVED	TYPE	CFM				ELECTRICAL				OPER. WT	MANUF & MODEL	SCH NOTES
						CFM	CFM (OUTSIDE AIR)	ESP	COOLING (BTU/HR)	HEATING (BTU/HR)	V	PH	FREQ			
VRF		211G	OFFICE 211G	3	CEILING CASSETTE	390 CFM	20 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		211H	OFFICE 211H	3	CEILING CASSETTE	350 CFM	20 CFM	0 in-wg	8000 Btu/h	9000 Btu/h	208 V	1	60 Hz	0.2 A	45 lb	1,2,3,4,5,6,7,9
VRF		211J	OFFICE 211J	3	CEILING CASSETTE	390 CFM	20 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		211K	CONFERENCE 211K	3	CEILING CASSETTE	565 CFM	85 CFM	0 in-wg	15000 Btu/h	17000 Btu/h	208 V	1	60 Hz	0.3 A	60 lb	1,2,3,4,5,6,7,8,9
VRF		211L	OFFICE 211L	3	CEILING CASSETTE	390 CFM	15 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		212B	CUSTODIAL 212B	4	WALL MOUNTED	210 CFM	0 CFM	0 in-wg	6000 Btu/h	6700 Btu/h	208 V	1	60 Hz	0.2 A	25 lb	1,2,3,4,5,6,7,9
VRF		212E	ELECTRICAL 212E	4	WALL MOUNTED	210 CFM	0 CFM	0 in-wg	6000 Btu/h	6700 Btu/h	208 V	1	60 Hz	0.2 A	25 lb	1,2,3,4,5,6,7,9
VRF		213	MEN 213	4	CEILING CASSETTE	350 CFM	0 CFM	0 in-wg	8000 Btu/h	9000 Btu/h	208 V	1	60 Hz	0.2 A	45 lb	1,2,3,4,5,6,7,9
VRF		214	RECEPTION 214	4	CEILING CASSETTE	390 CFM	80 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	60 lb	1,2,3,4,5,6,7,8,9
VRF		214A	OFFICE 214A	4	CEILING CASSETTE	350 CFM	20 CFM	0 in-wg	8000 Btu/h	9000 Btu/h	208 V	1	60 Hz	0.2 A	45 lb	1,2,3,4,5,6,7,9
VRF		214B	OFFICE 214B	4	CEILING CASSETTE	350 CFM	20 CFM	0 in-wg	8000 Btu/h	9000 Btu/h	208 V	1	60 Hz	0.2 A	45 lb	1,2,3,4,5,6,7,9
VRF		214C	OFFICE 214C	4	CEILING CASSETTE	350 CFM	15 CFM	0 in-wg	8000 Btu/h	9000 Btu/h	208 V	1	60 Hz	0.2 A	45 lb	1,2,3,4,5,6,7,9
VRF		214D	CONFERENCE 214D	3	CEILING CASSETTE	390 CFM	50 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		301	CORRIDOR 301	5	DUCTED - HIGH STATIC	1300 CFM	55 CFM	0.6 in-wg	36000 Btu/h	40000 Btu/h	208 V	1	60 Hz	3.7 A	155 lb	1,2,3,4,5,6,7,9
VRF		302	RECEPTION 302	5	DUCTED - HIGH STATIC	775 CFM	125 CFM	0.6 in-wg	27000 Btu/h	30000 Btu/h	208 V	1	60 Hz	1.5 A	115 lb	1,2,3,4,5,6,7,9
VRF		302A	OFFICE 302A	5	CEILING CASSETTE	700 CFM	100 CFM	0 in-wg	24000 Btu/h	27000 Btu/h	208 V	1	60 Hz	0.4 A	65 lb	1,2,3,4,5,6,7,9
VRF		302B	OFFICE 302B	5	CEILING CASSETTE	350 CFM	15 CFM	0 in-wg	8000 Btu/h	9000 Btu/h	208 V	1	60 Hz	0.2 A	45 lb	1,2,3,4,5,6,7,9
VRF		303	OFFICE 303	5	CEILING CASSETTE	350 CFM	20 CFM	0 in-wg	8000 Btu/h	9000 Btu/h	208 V	1	60 Hz	0.2 A	45 lb	1,2,3,4,5,6,7,9
VRF		303A	OFFICE 303A	5	CEILING CASSETTE	390 CFM	20 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		304	OFFICE 304	5	CEILING CASSETTE	390 CFM	25 CFM	0 in-wg	15000 Btu/h	17000 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		305	MEN 305	5	CEILING CASSETTE	350 CFM	0 CFM	0 in-wg	8000 Btu/h	9000 Btu/h	208 V	1	60 Hz	0.2 A	45 lb	1,2,3,4,5,6,7,9
VRF		306	RECEPTION 306	6	DUCTED - HIGH STATIC	680 CFM	215 CFM	0.6 in-wg	24000 Btu/h	27000 Btu/h	208 V	1	60 Hz	1.4 A	100 lb	1,2,3,4,5,6,7,9
VRF		306A	OFFICE 306A	5	CEILING CASSETTE	390 CFM	25 CFM	0 in-wg	15000 Btu/h	17000 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		306B	OFFICE 306B	5	CEILING CASSETTE	390 CFM	25 CFM	0 in-wg	15000 Btu/h	17000 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		306C	OFFICE 306C	5	CEILING CASSETTE	390 CFM	25 CFM	0 in-wg	15000 Btu/h	17000 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		306D	OFFICE 306D	6	CEILING CASSETTE	390 CFM	15 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		306E	OFFICE 306E	6	CEILING CASSETTE	390 CFM	20 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		307	RECEPTION 307	6	CEILING CASSETTE	350 CFM	55 CFM	0 in-wg	8000 Btu/h	9000 Btu/h	208 V	1	60 Hz	0.2 A	45 lb	1,2,3,4,5,6,7,9
VRF		307A	OFFICE 307A	6	CEILING CASSETTE	390 CFM	20 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		307B	OFFICE 307B	6	CEILING CASSETTE	390 CFM	20 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		307C	CONFERENCE 307C	6	CEILING CASSETTE	390 CFM	60 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		308	RECEPTION 308	6	DUCTED - HIGH STATIC	680 CFM	125 CFM	0.6 in-wg	24000 Btu/h	27000 Btu/h	208 V	1	60 Hz	1.4 A	100 lb	1,2,3,4,5,6,7,9
VRF		308A	OFFICE 308A	6	CEILING CASSETTE	390 CFM	25 CFM	0 in-wg	15000 Btu/h	17000 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		308B	CONFERENCE ROOM 308B	6	CEILING CASSETTE	636 CFM	60 CFM	0 in-wg	18000 Btu/h	20000 Btu/h	208 V	1	60 Hz	0.4 A	65 lb	1,2,3,4,5,6,7,9
VRF		308C	OFFICE 308C	6	CEILING CASSETTE	390 CFM	20 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		308F	OFFICE 308F	6	CEILING CASSETTE	390 CFM	20 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		308G	OFFICE 308G	6	CEILING CASSETTE	350 CFM	20 CFM	0 in-wg	8000 Btu/h	9000 Btu/h	208 V	1	60 Hz	0.2 A	45 lb	1,2,3,4,5,6,7,9
VRF		313	RECEPTION 313	6	CEILING CASSETTE	700 CFM	40 CFM	0 in-wg	24000 Btu/h	27000 Btu/h	208 V	1	60 Hz	0.4 A	65 lb	1,2,3,4,5,6,7,9
VRF		313A	OFFICE 313A	6	CEILING CASSETTE	350 CFM	20 CFM	0 in-wg	8000 Btu/h	9000 Btu/h	208 V	1	60 Hz	0.2 A	45 lb	1,2,3,4,5,6,7,9
VRF		313B	OFFICE 313B	6	CEILING CASSETTE	390 CFM	20 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		313C	OFFICE 313C	6	CEILING CASSETTE	390 CFM	20 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		314B	3RD LEVEL SE	5	WALL MOUNTED	210 CFM	0 CFM	0 in-wg	6000 Btu/h	6700 Btu/h	208 V	1	60 Hz	0.2 A	25 lb	1,2,3,4,5,6,7,9
VRF		314E	3RD LEVEL NW	5	WALL MOUNTED	210 CFM	0 CFM	0 in-wg	6000 Btu/h	6700 Btu/h	208 V	1	60 Hz	0.2 A	25 lb	1,2,3,4,5,6,7,9
VRF		315	WOMEN 315	5	CEILING CASSETTE	350 CFM	0 CFM	0 in-wg	8000 Btu/h	9000 Btu/h	208 V	1	60 Hz	0.2 A	45 lb	1,2,3,4,5,6,7,9
VRF		316	RECEPTION 316	6	CEILING CASSETTE	565 CFM	115 CFM	0 in-wg	15000 Btu/h	17000 Btu/h	208 V	1	60 Hz	0.3 A	60 lb	1,2,3,4,5,6,7,8,9
VRF		316A	OFFICE 316A	6	CEILING CASSETTE	350 CFM	20 CFM	0 in-wg	8000 Btu/h	9000 Btu/h	208 V	1	60 Hz	0.2 A	45 lb	1,2,3,4,5,6,7,9
VRF		316C	OFFICE 316C	6	CEILING CASSETTE	390 CFM	20 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9

VRF SCHEDULE - INDOOR UNIT (CONT)																
TAG	TYPE	#	AREA SERVED	EQUIPM ENT SERVED	TYPE	CFM				ELECTRICAL				OPER. WT	MANUF & MODEL	SCH NOTES
						CFM	CFM (OUTSIDE AIR)	ESP	COOLING (BTU/HR)	HEATING (BTU/HR)	V	PH	FREQ			
VRF		316D	OFFICE 316D	6	CEILING CASSETTE	390 CFM	20 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		316E	OFFICE 316E	6	CEILING CASSETTE	390 CFM	20 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		316F	OFFICE 316F	6	CEILING CASSETTE	390 CFM	20 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		316G	OFFICE 316G	5	CEILING CASSETTE	390 CFM	20 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	45 lb	1,2,3,4,5,6,7,9
VRF		316H	PROJECT ROOM 316H	5	CEILING CASSETTE	390 CFM	80 CFM	0 in-wg	12000 Btu/h	13500 Btu/h	208 V	1	60 Hz	0.3 A	60 lb	1,2,3,4,5,6,7,8,9
VRF		317	OFFICE 317	5	CEILING CASSETTE	350 CFM	20 CFM	0 in-wg	8000 Btu/h	9000 Btu/h	208 V	1	60 Hz	0.2 A	45 lb	1,2,3,4,5,6,7,9
VRF		317A	OFFICE 317A	5	CEILING CASSETTE	350 CFM	20 CFM	0 in-wg	8000 Btu/h	9000 Btu/h	208 V	1	60 Hz	0.2 A	45 lb	1,2,3,4,5,6,7,9
VRF		318	OFFICE 317	5	CEILING CASSETTE	350 CFM	20 CFM	0 in-wg	8000 Btu/h	9000 Btu/h	208 V	1	60 Hz	0.2 A	45 lb	1,2,3,4,5,6,7,9
VRF		319	CONFERENCE-LAMPROS 319	5	DUCTED - HIGH STATIC	1300 CFM	130 CFM	0.6 in-wg	36000 Btu/h	40000 Btu/h	208 V	1	60 Hz	3.7 A	155 lb	1,2,3,4,5,6,7,9

- REFRIGERANT R-410A.
- SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.
- PROVIDE WITH INTEGRAL PENCIL CONDENSATE PUMP. ROUTE CONDENSATE LINE TO NEAREST FLOOR DRAIN OR FUNNEL DRAIN.
- PROVIDE WITH INDIVIDUAL ZONE THERMOSTAT.
- EACH INDIVIDUAL UNIT IS POWERED SEPERATELY.
- COORDINATE PIPING AND ELECTRICAL CONNECTIONS TO HAVE A MINIMUM OF 36" X 30" CLEARANCE IN FRONT OF ELECTRICAL CONNECTIONS.
- VARIABLE REFRIGERANT SYSTEM SHALL BE INSTALLED, PIPED, AND CONTROLLED PER MANUFACTURERS RECOMMENDATIONS. SELECTED MANUFACTURER SHALL PROVIDE ALL REQUIRED TRAINING, ONSITE ASSISTANCE, PROJECT SPECIFIC SHOP DRAWINGS, ETC. AS REQUIRED, FOR A COMPLETE AND OPERATING SYSTEM.
- PROVIDE MULTI-FUNCTION CASEMENTS FOR ALL 3' X 3' CASSETTES REQUIRING OA ABOVE 75 CFM, DUCT OA PER MANUFACTURERS REQUIREMENTS.
- PROVIDE REFRIGERANT PIPING PER MANUFACTURERS RECOMMENDATIONS. UNITS LESS THAN 24 MBH COOLING SHALL BE 1/4" LIQUID AND 1/2" SUCTION AND UNITS GREATER THAN OR EQUAL TO 24 MBH COOLING SHALL BE 3/8" LIQUID AND 5/8" SUCTION.

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No.	Date	Description
1	01.16.15	DFCM PLAN REVIEW
2	02.03.15	BID SET

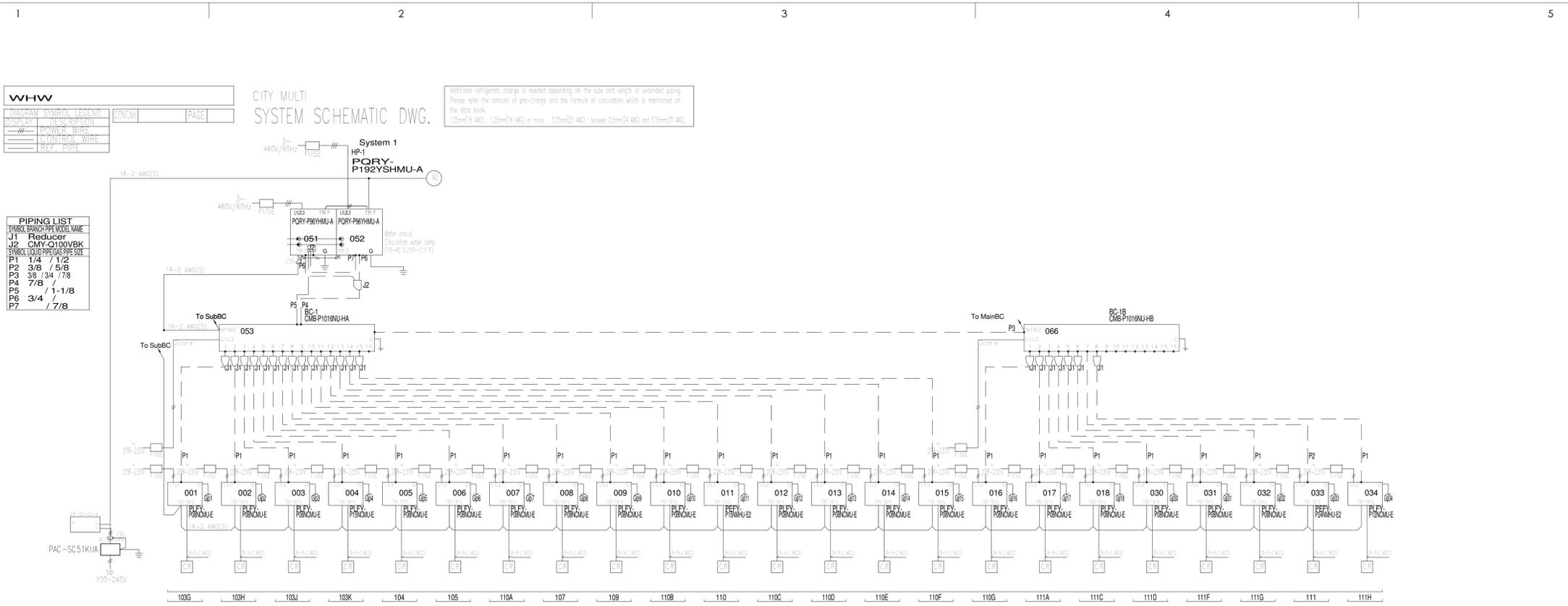
Revision		
No.	Date	Description
2	03/20/15	ADD#2

DFCM Project No. 14031810  
 SAA Project No. 214016  
 Drawing Title

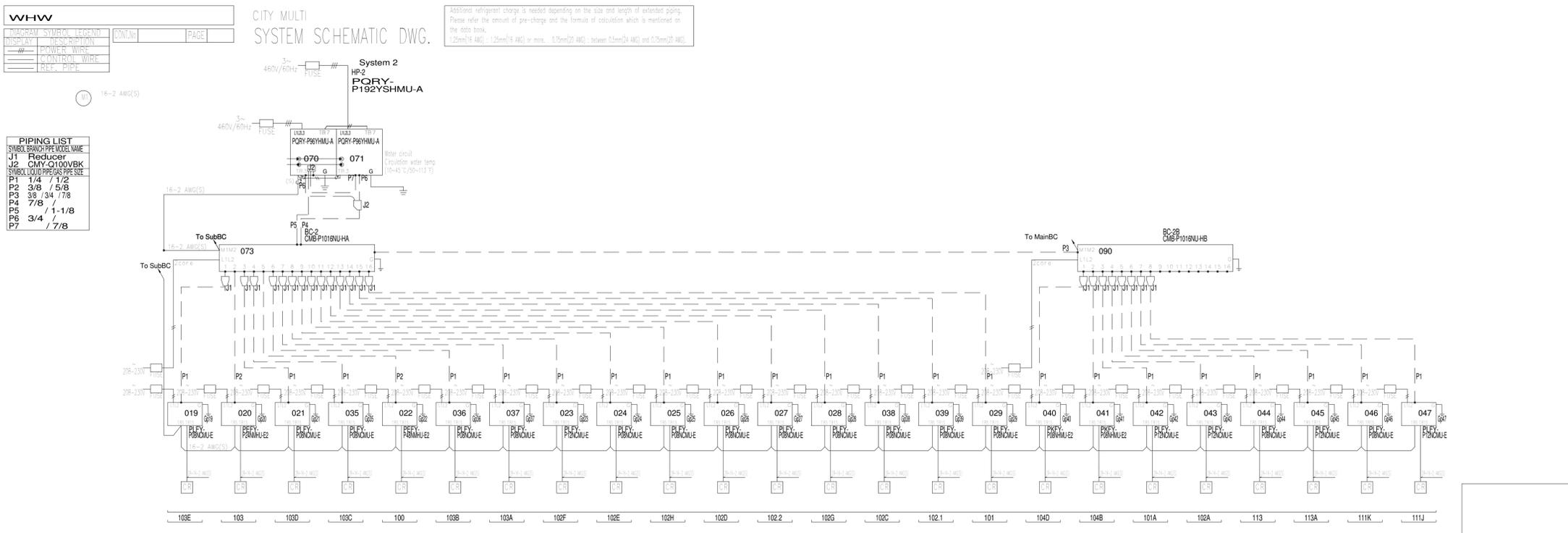
**MECHANICAL SCHEDULES**

Sheet Number

**ME603**



**C3 HP-1 DIAGRAM**  
SCALE: NONE



**A3 HP-2 DIAGRAM**  
SCALE: NONE

**WHW**

DIAGRAM	SYMBOL	LEGEND	CONTINUED	PAGE
DISPLAY		DESCRIPTION		
---		POWER WIRE		
---		CONTROL WIRE		
---		REF. PIPE		

**PIPING LIST**

SYMBOL	BRANCH	PIPE MODEL NAME	
J1	Reducer		
J2	CMY-Q100VBK		
SYMBOL	LIQUID	PRECHARGE	PIPE SIZE
P1	1/4	1/2	
P2	3/8	5/8	
P3	3/8	3/4	7/8
P4	7/8		
P5	3/4	1-1/8	
P6	3/4		
P7		7/8	

Additional refrigerant charge is needed depending on the size and length of extended piping. Please refer the amount of pre-charge and the formula of calculation which is mentioned on the data book.  
1.25mm(1/8 AWG) - 1.25mm(1/8 AWG) or more, 0.75mm(3/32 AWG) - between 0.5mm(1/4 AWG) and 0.75mm(3/32 AWG).

**WHW**

DIAGRAM	SYMBOL	LEGEND	CONTINUED	PAGE
DISPLAY		DESCRIPTION		
---		POWER WIRE		
---		CONTROL WIRE		
---		REF. PIPE		

**PIPING LIST**

SYMBOL	BRANCH	PIPE MODEL NAME	
J1	Reducer		
J2	CMY-Q100VBK		
SYMBOL	LIQUID	PRECHARGE	PIPE SIZE
P1	1/4	1/2	
P2	3/8	5/8	
P3	3/8	3/4	7/8
P4	7/8		
P5	3/4	1-1/8	
P6	3/4		
P7		7/8	

Additional refrigerant charge is needed depending on the size and length of extended piping. Please refer the amount of pre-charge and the formula of calculation which is mentioned on the data book.  
1.25mm(1/8 AWG) - 1.25mm(1/8 AWG) or more, 0.75mm(3/32 AWG) - between 0.5mm(1/4 AWG) and 0.75mm(3/32 AWG).

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2	02.03.15	BID SET

Revision

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2	03/20/15	ADD#2

DFCM Project No. 14031810  
SAA Project No. 214016  
Drawing Title

**MECHANICAL VRF SCHEMATICS**

Sheet Number  
**ME902**

DFCM approval

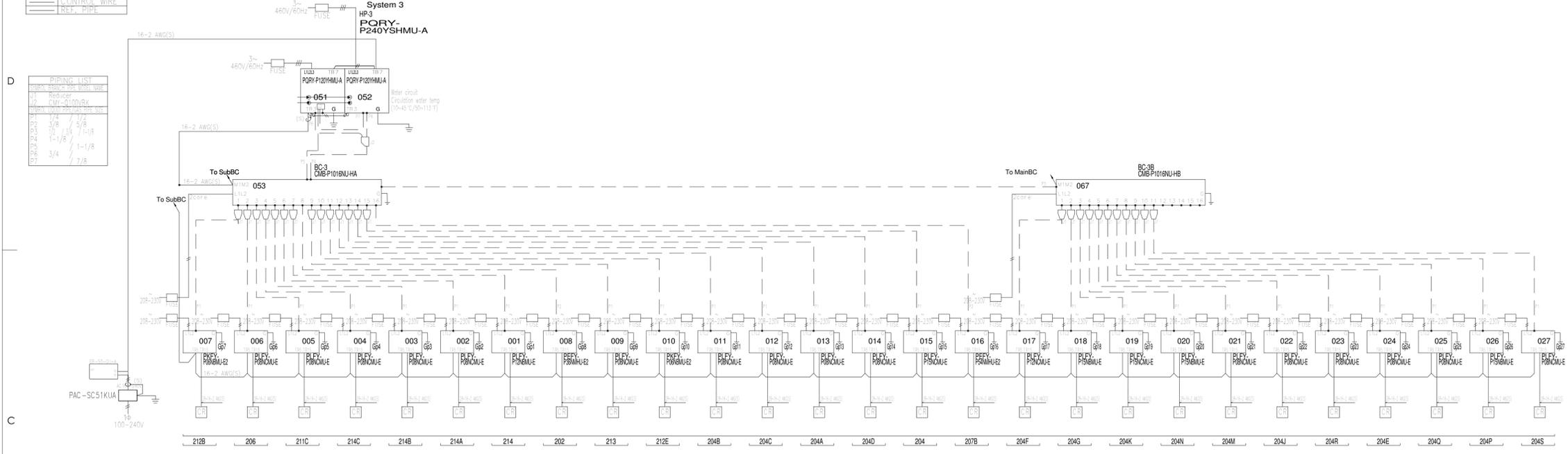
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DIAGRAM SYMBOL LEGEND		
DISPLAY DESCRIPTION		
--- POWER WIRE		
--- CONTROL WIRE		
--- REF. PIPE		

CITY MULTI SYSTEM SCHEMATIC DWG.

Additional refrigerant charge is needed depending on the size and length of extended piping. Please refer the amount of pre-charge and the formula of calculation which is mentioned on the data book.  
 $1.25mm(1/2 \text{ ANG}) - 1.25mm(1/2 \text{ ANG})$  or more.  $0.75mm(3/8 \text{ ANG})$  ; between  $0.5mm(1/4 \text{ ANG})$  and  $0.75mm(3/8 \text{ ANG})$

PIPING LIST

SYMBOL	DESCRIPTION	UNIT
P1	Reducer	
P2	CVT-0100/RK	
P3	CVT-0100/RK	
P4	1/2" / 3/4" / 1/2"	
P5	1-1/8" / 1-1/8"	
P6	3/4" / 1-1/8"	
P7	3/4" / 7/8"	



**C3** HP-3 DIAGRAM  
SCALE: NONE

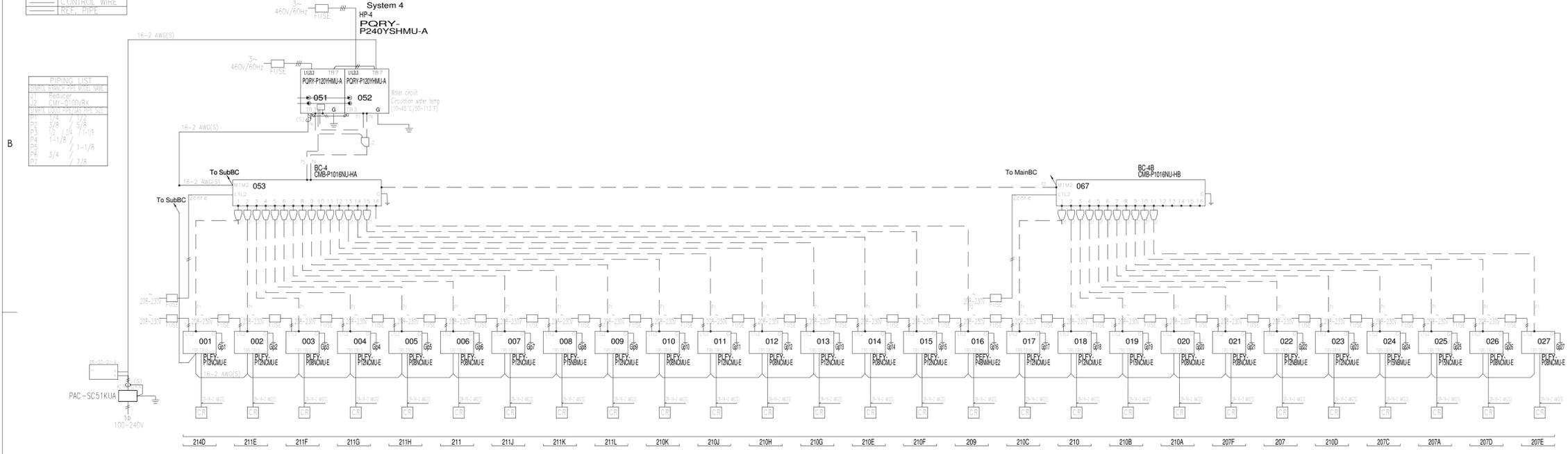
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DIAGRAM SYMBOL LEGEND		
DISPLAY DESCRIPTION		
--- POWER WIRE		
--- CONTROL WIRE		
--- REF. PIPE		

CITY MULTI SYSTEM SCHEMATIC DWG.

Additional refrigerant charge is needed depending on the size and length of extended piping. Please refer the amount of pre-charge and the formula of calculation which is mentioned on the data book.  
 $1.25mm(1/2 \text{ ANG}) - 1.25mm(1/2 \text{ ANG})$  or more.  $0.75mm(3/8 \text{ ANG})$  ; between  $0.5mm(1/4 \text{ ANG})$  and  $0.75mm(3/8 \text{ ANG})$

PIPING LIST

SYMBOL	DESCRIPTION	UNIT
P1	Reducer	
P2	CVT-0100/RK	
P3	CVT-0100/RK	
P4	1/2" / 3/4" / 1/2"	
P5	1-1/8" / 1-1/8"	
P6	3/4" / 1-1/8"	
P7	3/4" / 7/8"	



**A3** HP-4 DIAGRAM  
SCALE: NONE

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Revision

No.	Date	Description
2	03/20/15	ADD#2

DFCM Project No. 14031810  
 SAA Project No. 214016  
 Drawing Title

MECHANICAL VRF SCHEMATICS

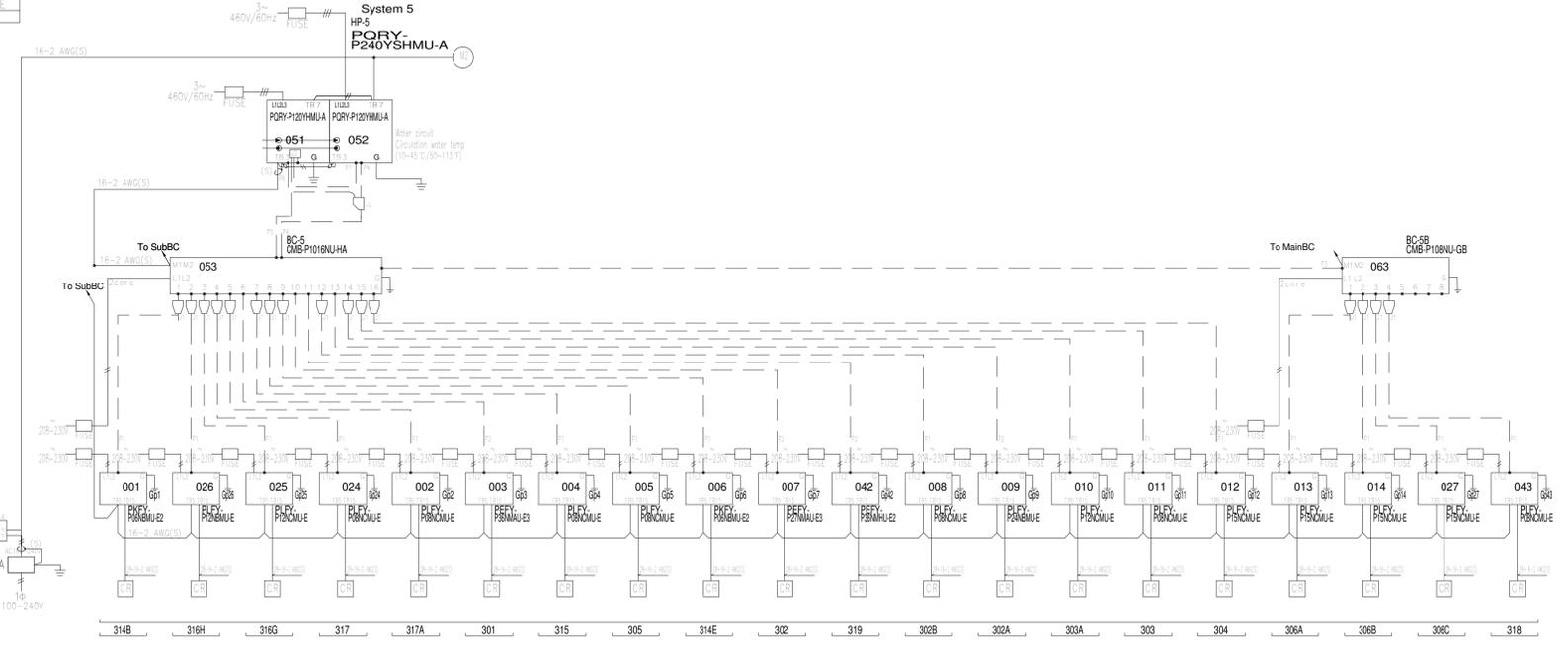
Sheet Number  
**ME903**

WHW	
DIAGRAM	SYMBOL LEGEND
DISPLAY	DESCRIPTION
---	POWER WIRE
---	CONTROL WIRE
---	REF. PIPE

CITY MULTI SYSTEM SCHEMATIC DWG.

Additional refrigerant charge is needed depending on the size and length of extended piping. Please refer the amount of pre-charge and the formula of calculation which is mentioned on the data book.  
 1.25mm(1/8 ANG) : 1.25mm(1/8 ANG) or more, 0.75mm(3/32 ANG) : between 0.5mm(1/16 ANG) and 0.75mm(3/32 ANG).

PIPING LIST	
U1	Reducer
J2	CUY-0100/RK
U2	CUY-0100/RK
P1	1/4" / 1/4"
P2	3/8" / 5/8"
P3	3/8" / 3/8"
P4	1-1/8" / 1-1/8"
P5	3/4" / 7/8"
P7	3/4" / 7/8"



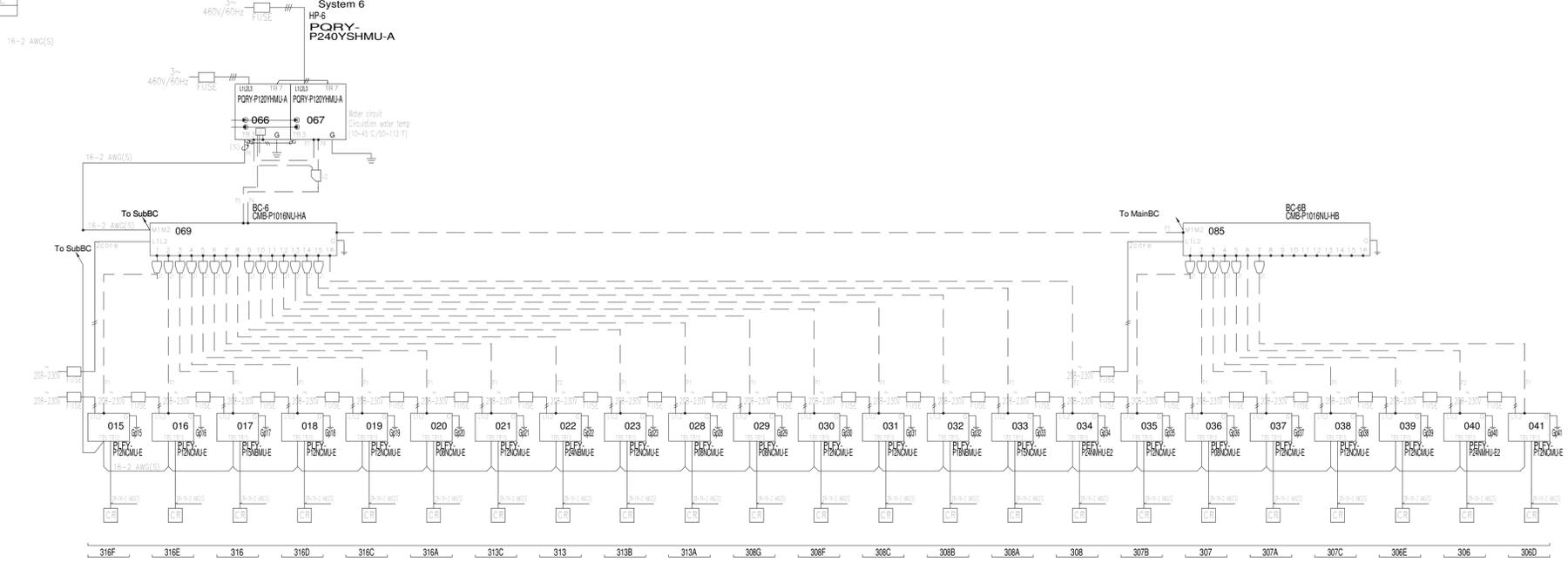
**C3 HP-5 DIAGRAM**  
SCALE: NONE

WHW	
DIAGRAM	SYMBOL LEGEND
DISPLAY	DESCRIPTION
---	POWER WIRE
---	CONTROL WIRE
---	REF. PIPE

CITY MULTI SYSTEM SCHEMATIC DWG.

Additional refrigerant charge is needed depending on the size and length of extended piping. Please refer the amount of pre-charge and the formula of calculation which is mentioned on the data book.  
 1.25mm(1/8 ANG) : 1.25mm(1/8 ANG) or more, 0.75mm(3/32 ANG) : between 0.5mm(1/16 ANG) and 0.75mm(3/32 ANG).

PIPING LIST	
U1	Reducer
J2	CUY-0100/RK
U2	CUY-0100/RK
P1	1/4" / 1/4"
P2	3/8" / 5/8"
P3	3/8" / 3/8"
P4	1-1/8" / 1-1/8"
P5	3/4" / 7/8"
P7	3/4" / 7/8"



**A3 HP-6 DIAGRAM**  
SCALE: NONE

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No.	Date	Description
2	03/20/15	ADD#2

DFCM Project No. 14031810  
 SAA Project No. 214016  
 Drawing Title

MECHANICAL VRF SCHEMATIC

Sheet Number  
**ME904**

DFCM approval