ADDENDUM TO THE CONTRACT DOCUMENTS

SOLANO COMMUNITY COLLEGE	ADDENDUM NO. 002
	Project: Solano Community College District **Building 300 Modernization Project** Project Number: 23-010
	Date: April 19th, 2023

Addendum No. 002 – The following clarifications are provided and must be added/considered when completing your bid: Acknowledgement of receipt of this ***Addendum No. 002***, is required on the Bid Form. Please clearly note the addendum date and number.

ITEM NO. 1 – GENERAL INFORMATION

1.1. See GENERAL Items 1.1 – 1.4 – Addendum #2 attached, dated April 19th, 2023.

ITEM NO. 2 – SPECIFICATIONS

2.1. See SPECIFICATIONS Items 1.5 – 1.22 – Addendum #2 attached, dated April 19th, 2023.

ITEM NO. 3 – DRAWINGS

3.1. See ARCHITECTURAL Items 1.23 – 1.39 – Addendum #2 attached, dated April 19th, 2023.
3.2. See MECHANICAL Items 1.40 – 1.48 – Addendum #2 attached, dated April 19th, 2023.
3.3. See PLUMBING Items 1.49 – 1.50 – Addendum #2 attached, dated April 19th, 2023.
3.4. See ELECTRICAL Items 1.51 – 1.59 – Addendum #2 attached, dated April 19th, 2023.
3.5. See FIRE ALARM Items 1.60 – 1.65 – Addendum #2 attached, dated April 19th, 2023.

ITEM NO.4 – PRE-BID RFI'S

4.1 See PRE-BID RFI'S Items 1.66 – 1.69 – Addendum #2 attached, dated April 19th, 2023.

List of Attachments:

General

- Hazardous Material Report
- Hazardous Material Specifications

Specs

- Section 00 01 20 List of Schedules
- Section 00 11 16 Notice to Bidders
- Section 00 41 13 Bid Forms and Proposal
- Section 00 52 13 Agreement

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- Section 23 05 53 – Identification for HVAC Piping Equipment
- Section 23 05 19 – Meters and Gauges for HVAC Piping
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- AD2 - A0.04 – Exit Analysis and Building Code Analysis
- AD2 - A2.01 Demolition Floor Plan
- AD2 - A3.01 – New Floor Plan
- AD2 - A3.02 Enlarged Demo & Floor Plan – Room 303 Adjunct Faculty Offices
- AD2 - A3.10 – Enlarged Restroom Plans & Elevations
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- AD2 - FA7.01 – Fire Alarm Riser Diagram

April 19,2023

Aedis Architects
387 S. First Street
San Jose, CA 95113

Subject: Solano Community College, BLDG 300 Modernization
Solano community College District
Project No. 2022012

DSA File No. 48-C1
DSA Application No. 02-120607

ADDENDUM NO. 2
(Total 309 Pages Emailed Including Attachments)

CHANGES AND/OR CLARIFICATIONS OF THE BID DOCUMENTS AS FOLLOWS:

General

ITEM NO. 1.1: Info Bid opening date is changed from April 26th to May 3rd , 2023, 2pm.

ITEM NO. 1.2: Info Post Bid Interview date is changed from April 27th to May 4th, 2023, time to be determined.

ITEM NO. 1.3: HAZARDOUS MATERIAL REPORT
Add: Hazardous material report from PMP environmental Consulting

ITEM NO. 1.4: HAZARDOUS MATERIAL ABATEMENT SPECIFICATIONS
Add: Hazardous material Specifications from PMP environmental Consulting

SPECIFICATIONS

ITEM NO. 1.5: SECTION 00 01 20 LIST OF SCHEDULES
Revise: Bid opening date changed from April 26th to May 3rd per attachment.

ITEM NO. 1.6: SECTION 00 11 16 NOTICE TO BIDDERS
Revise: Bid opening date changed from April 26th to May 3rd per attachment.
Revise: Mandatory post bid interview date changed from April 27th to May 4th per attachment.

ITEM NO. 1.7: SECTION 00 41 13 BID FORMS AND PROPOSAL
Replace: Bid form in its entirety per attached document

ITEM NO. 1.8: SECTION 00 52 13 AGREEMENT
Replace: Bid form in its entirety per attached document

ITEM NO. 1.9: SPECIFICATION TABLE OF CONTENTS
Replace: Specification Table of Contents in its entirety per attachment.

ITEM NO. 1.10: SECTION 06 41 16 – PLASTIC LAMINATE CLAD ARCHITECTURAL CABINETS
Add: Specification Section 06 41 16 – Plastic Laminate Clad Architectural Cabinets per attachment.

ITEM NO. 1.11: SECTION 09 65 19 – RESILIENT TILE FLOORING
Replace: Specification Section 09 65 19 – Resilient Tile Flooring in its entirety per attachment.

ITEM NO. 1.12: SECTION 09 68 13 – TILE CARPETING
Add: Specification Section 09 68 13 – Tile Carpeting per attachment.

ITEM NO. 1.13: SECTION 09 77 23 – FABRIC WRAPPED PANELS
Add: Specification Section 09 77 23 – Fabric Wrapped Panels per attachment

ITEM NO. 1.14: SECTION 12 36 61.19 – QUARTZ AGGLOMERATE COUNTERTOP
Add: Specification section 12 36 61.19 – Quartz Agglomerate Countertop per attachment.

ITEM NO. 1.15: SECTION 23 05 19 – METERS AND GAUGES FOR HVAC PIPING
Add: Specification section 23 05 19 – Meters and Gauges for HVAC Piping per attachment.

ITEM NO. 1.16: SECTION 23 05 53 – IDENTIFICATION FOR HVAC PIPING EQUIPMENT
Add: Specification section 23 05 53 – Identification for HVAC Piping Equipment per attachment.

ITEM NO. 1.17: SECTION 23 07 19 – HVAC PIPING INSULATIONS
Add: Specification section 23 07 19 –HVAC Piping Insulations per attachment.

ITEM NO. 1.18: SECTION 23 23 00 – REFRIGERANT PIPING
Add: Specification section 23 23 00 – Refrigerant Piping per attachment.

ITEM NO. 1.19: SECTION 23 31 00 – HVAC DUCTS AND CASINGS
Add: Specification section 23 31 00 – HVAC Ducts and Casings per attachment.

ITEM NO. 1.20: SECTION 23 33 00 – DUCTS ACCESSORIES
Add: Specification section 23 33 00 – Ducts Accessories per attachment.

ITEM NO. 1.21: SECTION 23 37 00 – AIR OUTLETS AND INLETS
Add: Specification section 23 37 00 – Air Outlets and Inlets per attachment.

ITEM NO. 1.22: SECTION 23 81 29 – VARIABLE REFRIGERANT FLOW HVAC SYSTEMS

Add: Specification section 23 81 29 – Variable Refrigerant Flow HVAC Systems per attachment.

DRAWINGS

ARCHITECTURAL

ITEM NO. 1.23: SHEET T1 - TITLE SHEET

Revise: Title from "DSA Submittal" to "Construction Document" per attached sheet AD2-T1

Revise: Scope of work to read: "The scope of work includes but is not limited to; HVAC upgrades to the controls and valves as well as motors and components without removal of existing equipment, removal and replacement of existing roofing, removal and replacement of ceiling tiles, restrooms, and ADA upgrades on path of travel. The scope of work also includes the conversion of a lab classroom to Adjunct Faculty offices." per attached sheet AD2-T1

Add: Add Alternate #1: Remove (e) abandoned fire sprinklers system in room 326, central supply. Per attached sheet AD2-T1.

Revise: Drawing Index per attached sheet AD2-T1.

ITEM NO. 1.24: SHEET A0.04 – EXIT ANALYSIS AND BUILDING CODE ANALYSIS

Revise: Exit analysis for room 303 per attached sheet AD2-A0.04

ITEM NO. 1.25: SHEET A2.01 DEMOLITION FLOOR PLAN

Revise: Asbestos note to read: "Asbestos containing product are present in the existing building construction. Refer to asbestos and lead based paint survey report prepared by PMP environmental consulting on November 18, 2019 as well as the revised report and specification issued on April 12, 2023 for solano community college. Materials which contain asbestos include gray putty associated with black sinks, cement resin countertops, transite panels within fume hoods, beige HVAC taping located in plenum area, all vinyl floor tile and mastic. If additional suspect materials are found, the contractor shall immediately notify owner' s representative for instructions prior to proceeding with additional work. The contractor shall immediately post notices and take precautions necessary to ensure the health and safety of all workers, the staff and the public." Per attached sheet AD2-A2.01

Add: Add Alternate #1 Fire -Sprinkler removal. Keynote 02.692 to read: "Remove (e) abandoned and drained sprinklers system, sprinkler heads, attachments, and all associated components back to the main point of connection. cap and secure. seal all penetration as needed." Per attached sheet AD2-A2.01

Add: Keynote 01.002 to Sheet A2.01 to read: "See enlarged floor plan for Keynotes".

Add: Keynote 02.459 to Sheet A2.01 to read: "(E) utility sink to remain".

Add: Callout to sheet AD2 – 3.02 on Floor Plan – Level 1 as shown per attached sheet AD2-A2.01.

ITEM NO. 1.26: SHEET A3.01 – NEW FLOOR PLAN

Add: Callout to sheet AD2 – 3.02 on Floor Plan – Level 1 as shown per attached sheet AD2-A3.01.

Revise: Room 303 to read "Adjunct Faculty Office"

Add: Keynote 01.002 to Sheet A3.01 to read: "See enlarged floor plan for Keynotes".

Add: Keynote 26.205 to Sheet A3.01 to read: "Provide conduit at power tables; paint, S.E.D"

ITEM NO. 1.27: SHEET AD2 – A3.02 – ENLARGED DEMO & FLOOR PLAN -ROOM 303 ADJUNCT FACULTY OFFICES

Add: Sheet in its entirety per attached sheet AD2-A3.02.

ITEM NO. 1.28: SHEET A3.10 – ENLARGED RESTROOM PLANS & ELEVATIONS

Add: Keynote 03.323 to sheet A3.10 to read: "Infill trenched area with concrete per detail 20/AD2 -A9.10"

Add: Keynotes 03.323 and 03.324 to Enlarged Plan 2 "Enlarged Plan – Acc. Staff Restroom 312" per attached sheet AD2-A3.10.

ITEM NO. 1.29: SHEET A4.00 – DEMO REFLECTED CEILING PLAN

Add: Callout to sheet AD2 – 4.02 on Demo Reflected Ceiling Plan – Level 1 per attached sheet AD2-A4.00.

Add: Keynote 01.003 to sheet A4.00 to read: "See enlarged RCP for Keynotes".

Add: Keynote 02.691 to sheet A4.00 to read: "Remove (e) batt insulation above suspended ceiling tiles and replace after installing new tiles".

Add: Keynote 01.003 to Demo Reflected Ceiling Plan – Level 1 as shown per attached sheet AD2-A4.00.

Add: Keynote 02.691 to Demo Reflected Ceiling Plan – Level 1 as shown per attached sheet AD2-A4.00.

ITEM NO. 1.30: SHEET A4.01 – PROPOSED REFLECTED CEILING PLAN

Add: Callout to sheet AD2 – 4.02 on <Insert view name> per attached sheet AD2-A4.01

Revise: Room 303 to read "Adjunct Faculty Office" per attached sheet AD2-A4.01.

ITEM NO. 1.31: SHEET AD2 – A4.02 – ENLARGED DEMO & NEW RCP – ROOM 303 ADJUNCT FACULTY OFFICES

Add: Sheet in its entirety per attached sheet AD2-A4.02.

ITEM NO. 1.32: SHEET A5.01 – DEMO AND NEW ROOF PLAN

Revise: Sheet name to read: "Demo and New Roof Plan" per attached Sheet AD2-A5.01.

Add: Keynote 02.687 to sheet A5.01 to read: "Remove (e) make up air unit. Furnish and install new fan, S.E.D and S.M.D.".
Add: Keynote 02.688 to sheet A5.01 to read: "Remove (e) exhaust fan. Seal and waterproof. S.E.D. and S.M.D.".
Add: Keynote 02.689 to sheet A5.01 to read: "Remove (e) exhaust fan and disconnect per mechanical plan. S.E.D. and S.M.D."
Add: Keynote 23.108 to sheet A5.01 to read: "Heat Pump, S.M.D.".
Add: Keynote 26.211 to sheet A5.01 to read: "Furnish and install disconnect. S.E.D.".

ITEM NO. 1.33: SHEET A8.10 – EXTERIOR DETAILS
Add: Detail 12 – "Multiple pipe penetration detail @ roof" as shown per attached sheet AD2-A8.10.

ITEM NO. 1.34: SHEET A9.01 – WALL TYPES AND DETAILS
Revise: Number of "Typical door sill detail" to 14 as shown per attached sheet AD2-A9.01.
Add: Wall Type 6 as shown per attached sheet AD2.-A9.01.

ITEM NO. 1.35: SHEET A9.10 – INTERIOR DETAILS
Remove: Detail 14 – "VDF Anchorage Mounted to Concrete" in marked as not in use as shown per attached sheet AD2-A9.10.
Add: Detail 18 – "Projection screen anchorage (2x studs)" as shown per attached sheet AD2-A9.10.
Add: Detail 19 – "Ceiling mounted projector" as shown per attached sheet AD2-A9.10.
Add: Detail 20 – "Pipe removal and concrete infill detail" as shown per attached sheet AD2-A9.10.

ITEM NO. 1.36: SHEET A11.01– FINISH SCHEDULE, LEGEND & DETAILS
Revise: Room 303 in Finish Schedule to read: "Adjunct Facility Offices – CT-1, CT-2, CT-3, LVT – B-1 – P-2, P-4 – ACT-1
Revise: Room 308 and 309 to have P-2 and P-4
Revise: Room 327A, 328, 329 to have (e) paint, P-2
Revise: Finish Legend to include Composite engineer stone, carpet tile, walk-off matt, LVT and fabric wrap tackable wall panel
Add: Detail 3 "LVT to Carpet Transition" as shown per attached sheet AD2-A11.01.
Add: "Finish Floor Plan – Rm 303 Adjuncts Faculty Office" as shown per attached sheet AD2-A11.01.

ITEM NO. 1.37: SHEET A11.10 – CASEWORK SCHEDULE & DETAILS
Revise: Casework schedule name to read: "Lab Casework Schedule"
Add: Standard casework schedule as shown per attached sheet AD2-A11.10
Add: Detail 5 "Accessible cabinet base no doors – standard casework" as shown per attached sheet AD2-A11.10
Revise: Detail 6 Title to read: "Accessible Cabinet Base No Doors – Lab Casework"

ITEM NO. 1.38: SHEET A11.11 – PAINT PLAN

Revise: Paint color in room 327A -328 and 329 as shown in attached sheet AD2-A11.11.

Revise: Room 303 to read: "Adjunct Faculty Office"

ITEM NO. 1.39: SHEET A12.01 – INTERIOR ELEVATIONS

Add: Elevations 4 – "Room 303 - Adjunct Faculty Offices – Interior Elevations" as shown on attached sheet AD2-A12.01.

Add: Keynote 02.017 to sheet A12.01 to read: "(E) wall mounted fire extinguisher".

Add: Keynote 09.704 to sheet A12.01 to read: "Fabric covered tackboard panels".

Revise: Keynote 10.001 to sheet A12.01 to read: "<Insert exact verbiage> 4'x12' markerboard"

Add: Keynote 10.042 to sheet A12.01 to read: "Reinstall projector screen, see anchorage detail 18/ AD2 – A9.10"

Add: Keynote 26.302 to sheet A12.01 to read: "Reinstall (e) wall mounted speaker, S.E.D."

Revise: Finish Legend as shown per attached sheet AD2-A12.01

Replace: Finish tag B-1 with Finish tag B-2 in 301 Geology Lab – Elevation, 302 Physic Lab – Elevation and 306 Anatomy Lab – Elevation as shown per attached sheet AD2-A12.01.

MECHANICAL

ITEM NO. 1.40: SHEET M0.00 – MECHANICAL GENERAL NOTES, SYMBOLS & ABBREVIATIONS

Revise: M0.01 added to drawing index.

Revise: M4.01 added to drawing index.

Revise: Summary of Work item 2 added word 'actuator'.

ITEM NO. 1.41: SHEET M0.01 – MECHANICAL TITLE 24

Add: Title 24 sheet added.

ITEM NO. 1.42: SHEET MD2.01 – MECHANICALFLOOR PLAN LEVEL 1 - DEMO

Revise: Portion of EF-3 general exhaust duct is demolished.

Revise: Room 303 is selected as a partial floorplan to see on M4.01.

Revise: As-Built ductwork that is East of Room 303 was added.

Revise: RSN 2 added.

ITEM NO. 1.43: SHEET M2.01 - MECHANICALFLOOR PLAN LEVEL 1 - NEW

Revise: New 303 exhaust ductwork is added.

Revise: Room 303 is selected as a partial floorplan to see on M4.01.

Revise: As-Built ductwork that is East of Room 303 was added.

Revise: RSN 1 was revised added word 'actuator'.

Revise: The VFD's moved to interior wall.

ITEM NO. 1.44: SHEET M2.02 – MECHANICAL ROOF PLAN -NEW

Revise: RSN's 4,5,6 added.

Revise: Installing heat Pump, HP-2, was added.
Revise: The names for the 303-lab makeup air and lab exhaust air fans are renamed.
Revise: EF-3 had RSN 4 added.

ITEM NO. 1.45: SHEET M4.01- MECHANICAL ENLARGED FLOOR PLANS
Add: This sheet was added to show the work required to modify the HVAC serving Room 303.

ITEM NO. 1.46: SHEET M5.01 – MECHANICAL DETAILS
Revise: Details 6,7,8,9,10,11 were added to show the split system piping schematic, heat pump mounting, suspended duct support, suspended ceiling cassette support, and ceiling grille installation.
Revise: Detail 5 was changed to provide VFD anchorage to a wood framed wall.

ITEM NO. 1.47: SHEET M6.01 – MECHANICAL SCHEDULES
Revise: Split System Cooling Schedule was updated to include the new heat pump and ceiling cassettes (HP-2, FC-3, FC-4).
Revise: Exhaust Fan Schedule was updated to show the EF-3 motor being replaced.

ITEM NO. 1.48: SHEET MI1.01 – MECHANICAL CONTROLS
Revise: Points were added for the new heat pump and ceiling cassettes.

PLUMBING

ITEM NO. 1.49: SHEET P0.00 – PLUMBING GENERAL NOTES, SYMBOLS & ABBREVIATIONS
Revise: A kitchen sink, SK-5, was added to the Plumbing Fixture Schedule.

ITEM NO. 1.50: SHEET P4.01 – PLUMBING ENLARGED FLOOR PLANS
Add: This sheet was added to show the work required to modify the plumbing serving Room 303.

ELECTRICAL

ITEM NO. 1.51: SHEET E0.00 - ELECTRICAL GENERAL NOTES, SYMBOLS & ABBREVIATIONS
Revise: Fixture and Occupancy Schedules were removed, and Drawing Index was revised.

ITEM NO. 1.52: SHEET E0.01- ELECTRICAL TITLE 24
Revise: Title 24 sheet updated to reflect the new light fixtures.

ITEM NO. 1.53: SHEET - ED2.01 – ELECTRICAL FLOOR PLAN LEVEL 1 - DEMO
Revise: Callout to sheet AD2 – E4.01 on Floor Plan – Level 1 as shown per attached sheet AD2-ED2.01.

ITEM NO. 1.54: SHEET E2.01– ELECTRICAL FLOOR PLAN LEVEL 1 - NEW

Revise: Callout to sheet AD2 – E4.01 on Floor Plan – Level 1 as shown per attached sheet AD2-E2.01.

Revise: The VFD's were moved to the interior wall.

ITEM NO. 1.55: SHEET ED2.02 – ELECTRICAL ROOF PLAN - DEMO

Add: This sheet was added to show work at EF-3, MA-2, and EF-2.

ITEM NO. 1.56: SHEET E2.02 – ELECTRICAL ROOF PLAN - NEW

Add: This sheet was added to show the additional electrical work for EF-3 and HP-2.

ITEM NO. 1.57: SHEET E4.01 – ELECTRICAL ENLARGED FLOOR PLANS - POWER

Add: This sheet was added to show the new power and data outlets distribution in RM 303.

ITEM NO. 1.58: SHEET E4.02 – ELECTRICAL ENLARGED FLOOR PLANS -LIGHTING

Add: This sheet was added to show the new light fixtures installation in RM 303.

ITEM NO. 1.59: SHEET E6.01 – ELECTRICAL SCHEDULES

Add: This sheet was added to show the new panel schedules and revised fixture schedule.

FIRE ALARM

ITEM NO. 1.60: SHEET FA0.00 - FIRE ALARM GENERAL NOTES, SYMBOLS & ABBREVIATIONS

Revise: Ceiling mounted horn strobe was added to the schedule.

ITEM NO. 1.61: SHEET FA0.01 - FIRE ALARM LEGENDS &NOTES

Revise: Ceiling mounted horn strobe added to FIRE ALARM LEGEND.

ITEM NO. 1.62: SHEET FAD2.01 - FIRE ALARM FLOOR PLAN LEVELS 1 &2 - DEMO

Revise: Callout to sheet AD2 – FA4.01 on Floor Plan –as shown per attached sheet AD2-FAD2.01.

ITEM NO. 1.63: SHEET FA2.01 - FIRE ALARM FLOOR PLAN LEVELS 1 &2 - NEW

Revise: Callout to sheet AD2 – FA4.01 on Floor Plan –as shown per attached sheet AD2-FA2.01.

ITEM NO. 1.64: SHEET FA4.01 – FIRE ALARM ENLARGED FLOOR PLAN

Add: Fire alarm layout modifications to room 303: horn strobes relocated to the ceiling and smoke detector addition

ITEM NO. 1.65: SHEET FA7.01 – FIRE ALARM RISER DIAGRAM

Revise: Riser diagram updated per FA4.01 modifications.

PRE-BID RFI'S

ITEM NO. 1.66: PRE-BID RFI 1

Question: In the summary section, it is noted that we need to replace reheat control valves and thermostats and connect reheat controls to BMS. Could you please provide us with details and a schedule for the valves and thermostats?

Response: The SOW on M0.00 is being revised. SOW 2 is being revised to indicate the valve actuator is being replaced. The valve is not being replaced. M2.01 RSN 1 is being revised to indicate it's the valve actuator that's being replaced. The valves aren't being replaced. The thermostat is specified on Detail 3/MI1.02.

ITEM NO. 1.67: PRE-BID RFI 2

Question: Additionally, we have a question about the split system fan coil unit. Is the condensing unit equipped with a BACnet gateway (probably a DMS 2.5 gateway)?

Response: The existing split system is understood to be currently connected to the front end.

ITEM NO. 1.68: PRE-BID RFI 3

Question: Would you please provide us with BTU meter specifications.

Response: Specification 23 05 19 is being added to include the Onicon BTU meter and Onicon Flow meter.

ITEM NO. 1.69: PRE-BID RFI 4

Question: Is there adequate working clearance for the VFDs inside the pump room?

Response: The VFD's were moved to the interior wall to provide better clearance.

Joe Vela, Architect
Aedis Architects

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Hazardous Material Specifications

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AD2 - FA7.01 – Fire Alarm Riser Diagram

** End of Addendum 2**

PMP Environmental Consulting
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April 12, 2023

Mr. Noe Ramos
Kitchell CEM
c/o Solano Community College District
4000 Suisun Valley Road
Fairfield, CA 9434

Dear Mr. Ramos,

This letter contains the results of a hazardous material survey performed at Building 300, Located at 4000 Suisun Valley Road, Fairfield, California on the Solano Community College Campus. Additional suspect asbestos and lead containing materials not previously sampled were collected for an upcoming renovation project. A list of suspect materials identified and sampled are included in this report. The survey was performed on March 31, 2023, by Shannon Johanson. Mrs. Johanson is a Cal/OSHA Certified Asbestos Consultant and EPA-accredited Building Inspector. See attached personnel certifications.

Procedures – Asbestos

A visual inspection of accessible building materials was performed using the methods presented in the federal AHERA regulations (40 CFR, Part 763) as a guideline. While AHERA is only directly applicable to public schools, the principles presented under the Final Rule are generally accepted as the industry standard for ACM inspections. Suspect ACMs were also physically assessed for friability, condition, and possible disturbance factors.

Bulk samples of identified homogeneous areas were collected in building areas that may be impacted by the planned renovation activities. Samples were collected of each separate homogeneous area. A homogeneous area is defined as a surfacing material, thermal system insulation, or miscellaneous material that is uniform in use, color, and texture.

The suspect ACMs were sampled using a knife or other similar coring device suitable to the type of material sampled to cut through its entire thickness and to ensure that a cross-section of the material was obtained. The material was then placed in an appropriately labeled container that was sealed and submitted to Eurofins Built Laboratories, Inc. in Tustin for analysis. Eurofins Built is accredited by the California Department of Public Health (CDPH) Environmental Laboratory Accreditation Program (ELAP) and the National Institute of Science and Technology's (NIST) National Voluntary Laboratory Accreditation Program (NVLAP). Eurofins Built participates in the National Institute for Occupational Safety and Health (NIOSH) Proficiency Analytical Testing Program and has substantial experience in the analysis of asbestos. A unique sample number was assigned to each sample.

Results – Asbestos

A total of 24 samples were collected from 14 identified suspect materials. Of the 14 materials sampled, one was found to contain asbestos. The following materials may be impacted without regard to asbestos work practices:

Roofing
Black Seam Mastic
Brown Sealant on Glass Vent Pipe
Gray Bolt Sealant
White Sink Sealant
White grout associated with Subway Tile
Black Science Counter tops
White Duct Seam Tape
Gray/Black Mastic at Duct Seam
White Pipe Sealant
2’x4’ FCP-Pinhole/Fissure – Old
Brown Grout associated with 12” ceramic floor tile
12” VFT-White Oatmeal Pattern & Mastic

Previous 2019 Survey

Stucco
12” Beige VFT & Mastic
Window Sealant
12” Blue VFT & Mastic
Cove Base Mastic
2’x4’ FCP-Pinhole/Fissure
2’x4’ FCP-Pinhole/Gouge
Brown Ceramic Tile Grout
Black Counter Tops in Fume Hoods
Tan Ceramic Tile Grout
Black Counter Tops in Science Rooms
FRP Mastic

All the samples were analyzed using Polarized Light Microscopy with Dispersion Staining (PLM/DS) techniques in accordance with the methodology approved by the U.S. Environmental Protection Agency (EPA). The percentage of asbestos present in the samples was determined based on a visual area estimation. The EPA defines asbestos-containing materials (ACM) as any material containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM). 40 CFR Part 763 identifies the lower limit of reliable quantification for asbestos using the PLM method as approximately one percent (1%) by volume. Regulations in California (CAL/OSHA Title 8 CCR 1529) define asbestos-containing construction materials (ACCM) as those materials having asbestos content of greater than one tenth of one percent (> 0.1%). Therefore, for the purpose of this survey, any amount of asbestos detected will be considered positive. In addition to the percentages, the types of asbestos minerals are also reported. The PLM method is the standard method used to analyze asbestos bulk samples.

When "None Detected" (ND) appears in the laboratory results, it should be interpreted as meaning asbestos was not observed in the sample material.

The following materials were found to contain asbestos in the previous 2019 survey and 2023 survey:

Sample No.	Material Description	Location	Asbestos Content	NESHAP Category	Amount
1021-02A	Orange Peel Texture Sheetrock & Joint Compound	Various Areas Throughout Building 300	0.18% Chrysotile (Confirmed by Point Count)	N/A	13120 SF
1021-02D	Orange Peel Texture Sheetrock & Joint Compound	Various Areas Throughout Building 300	0.13% Chrysotile (Confirmed by Point Count)	N/A	---
1021-02E	Orange Peel Texture Sheetrock & Joint Compound	Various Areas Throughout Building 300	0.10% Chrysotile (Confirmed by Point Count)	N/A	---
1021-03A	Hatch Pattern Sheetrock	Various Classrooms and Under Orange Peel Texture	0.12% Chrysotile (Confirmed by Point Count)	N/A	----

Sample No.	Material Description	Location	Asbestos Content	NESHAP Category	Amount
1021-04A	Unfinished Sheetrock w/Joint Compound	Above FCP in Attic and Behind Fixed Shelving	0.14% Chrysotile (Confirmed by Point Count)	N/A	---
1021-04B	Unfinished Sheetrock w/Joint Compound	Above FCP in Attic and Behind Fixed Shelving	0.10% Chrysotile (Confirmed by Point Count)	N/A	---
1021-04C	Unfinished Sheetrock w/Joint Compound	Above FCP in Attic and Behind Fixed Shelving	0.12% Chrysotile (Confirmed by Point Count)	N/A	450 SF
1021-05A	Plaster	Room 323	<0.25% Chrysotile (Confirmed by Point Count)	N/A	--
1021-05B	Plaster	Room 323	<0.25% Chrysotile (Confirmed by Point Count)	N/A	--
1021-05C	Plaster	Room 323	<0.25% Chrysotile (Confirmed by Point Count)	N/A	--
1021-06C	Duct Seam Tape	Attic Space above FCP	3% Chrysotile	CAT II	1,000 LF
1021-10A	Black Mastic Associated with 9” VFT	Room 332 Prep Room and Classroom 301	5% Chrysotile	CAT II	2,000 SF
1021-14A	Transite	Fume Hoods	15% Chrysotile	CAT II	270 SF
1021-16A	Gray Seam Sealant	Room 323	<1% Chrysotile	CAT II	Unknown
07A-B	Black Mastic with Silver Paint	Roof at Seams and HVAC Units	3% Chrysotile	CAT II	1000 SF

Recommendations and Requirements – Asbestos

Disturbance of any asbestos-containing material (ACM) or asbestos-containing construction material (ACCM) that could generate airborne asbestos fibers is regulated by the California Division of Occupational Safety and Health (CAL OSHA).

The Contractor is required to have DOSH Registration for abatement activities involving more than 100 square feet.

For compliance with Title 8, California Administrative Code, Construction Safety Order 1529, Asbestos Regulations, the asbestos abatement contractor must send written notice at least one day (24 hours) prior to start of ay work which will impact any asbestos. The contractor also must perform all work in accordance with Cal OSHA requirements (8 CCR 1529)

The US EPA National Emissions Standard for Hazardous Air Pollutants (NESHAP) regulation, as enforced by the Bay Area Air Quality Management District (BAAQMD), requires the abatement of materials containing more than 1% asbestos prior to any demolition or renovation work that may cause the materials to become friable. A written notification is required to be filed with the US EPA and CARB at least 10 working days prior to renovation activities impacting more than 100 square feet of regulated asbestos.

Hazardous Waste

Building materials reported to contain less than one percent (<1%) of asbestos are not considered hazardous by the U.S. EPA, and hence, may not require removal and disposal prior to demolition or renovation. Regulations may vary, however, between regional air quality management districts and/or other state agencies responsible for implementing EPA's rules. Therefore, local agencies should be contacted for specific ACM definitions and handling requirements. CAL/OSHA may also require special packaging and labeling on containers with asbestos-containing construction materials.

Composite sampling, which may potentially reduce the total asbestos content of the material, is only permitted when sampling joint compound, tape, and gypsum wallboard according to EPA's Asbestos NESHAP Clarification Regarding Analysis of Multi-Layered Systems (40 CFR Part 61 FRL-4821-7).

Lead

Three additional paint chip samples were collected of paints found throughout the building that may be impacted by the upcoming renovation. The paint chip samples were collected by scraping paint from the surface down to the substrate while taking care not to include substrate in the sample. All paint layers were included in each sample collected. A razor, knife or other similar tool was used, and the tools were cleaned after sample collection.

The following paints are lead-containing by XRF analysis:
White/Blue Subway Ceramic Tile

The following paints were found to be lead-containing by Flame AA analysis in previous 2019 survey:

White Paint on Metal Door Fames

White Paint on Sheetrock Walls

The following paints may be disturbed without special regard to lead:
Lavender Paint on Sheetrock Walls
Light Blue Paint on Sheetrock Walls
Tan Paint on Sheetrock Walls
Tan paint on metal duct work
Beige paint on metal door frame
Blue paint on sheetrock

The lead survey was not a comprehensive lead-based paint or building material survey as detailed in the *"Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing"* by The National Center for Lead-Safe Housing for Housing and Urban Development (HUD).

Cal/OSHA, in Title 8 CCR Section 1532.1, Lead in Construction Standard which implements California labor code 8716-6717, regulates all construction work were an employee may be occupationally exposed to lead. Paint or materials with any detectable level of lead is considered lead-containing by Cal/OSHA.

The U.S. EPA, U.S. Department of Housing and Urban Development (HUD), and CDPH define lead-based paints (LBPs) as paints containing greater than 0.5% lead by weight, 5,000 parts per million (ppm), or 5,000 milligrams per kilogram (mg/kg), or 1.0 milligram per square centimeter (mg/cm^2) total lead. The OSHA and Cal/OSHA regulations (Lead Construction Standard) do not provide a definition for LBP, but refer to the U.S.

EPA, HUD, and CDPH criteria mentioned above. Cal/OSHA is primarily concerned with worker protection, and therefore regulates any amount of lead contained within painted/coated building components.
For purposes of this report, materials containing lead shall be defined as materials that contain lead at levels greater than the limit of detection for lead by weight using Flame AA laboratory analysis.

Construction work impacting materials with detectable levels of lead is subject to Cal/OSHA requirements.

Construction activities, sometimes referred to as trigger tasks, impacting materials containing <u>any</u> amount of lead require an initial exposure assessment. Trigger tasks are defined in Cal/OSHA 1532.1, section (d) (2) and include but are not limited to such tasks as: manual demolition, manual scraping, manual sanding, lead burning, abrasive blasting, welding, cutting, and torch burning.

If any new materials are discovered during the renovation work. All work should be stopped until the material has been sampled and proven to be none detected for asbestos.

Lead Recommendations

The Cal/OSHA Lead in Construction Standard (8 CCR 1532.1) should be followed for any activities that will disturb the painted coatings in the project area that are listed as lead-containing. This is recommended as the standard applies to lead-related construction activities containing any detectable amount of lead. Elements of the standard that will be applicable include but may not be limited to training, exposure assessment monitoring, preparation of a site-specific lead compliance plan, use of personal protective equipment and hygiene facilities.

P-Tap/Glass Pipe

Three samples were collected from the glass pipe at the p-trap and analyzed for metals, cyanide, and mercury. Each sample was collected on a sterile lead ghost wipe and placed in centrifuge tube as directed by the laboratory. Samples were submitted to Eurofins Analytics in Ashland, Virginia with standard turnaround.

The metals screening with analysis using OSHA ID-125, showed low levels of Aluminum, Beryllium, Copper, Iron Oxide, Manganese, Nickel, Titanium Dioxide, and Zinc Oxide. None of the levels were considered hazardous waste.

The Mercury sample was analyzed by method SW846 7471A and was found below the limit of detection. No additional requirements will be necessary.

The cyanide sample was analyzed by EPA method 9010C/9014 and was found to be below the limit of detection. No additional requirements will be necessary.

The contractor shall be in full PPE including nitrile gloves when removing the glass pipe and P-trap. Any liquid should be captured, and absorbent added to create solid waste. This waste can be disposed of as non-hazardous waste.

This inspection is limited to the conditions and practices observed and information made available. The methods, conclusions and recommendations provided are based on PMP's judgment, expertise and the standard of practice for professional service. As with all environmental investigations, this investigation is limited to the defined scope and does not purport to set forth all hazards, nor indicate that other hazards do not exist.

Thank you for the opportunity to perform this inspection. If you have any questions, please contact me at (916) 628-5124 or via e-mail at pmpenvconsulting@gmail.com.

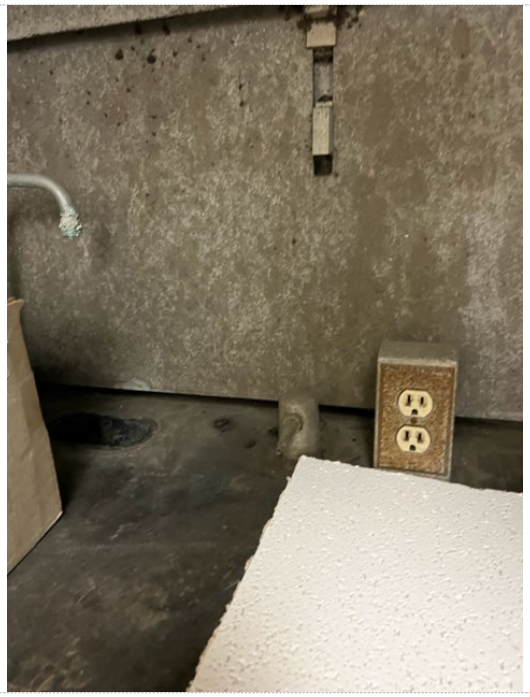
Sincerely,

Shannon Johanson

Shannon Johanson
President
CAC 14-5310
CDPH IA, PM 24367

PMP

Photographs

Black Mastic with Silver Paint at Seam-3% Chrysotile	Building 300 Exterior
	
Transite in Fume Hoods	Roof

Restroom – Low Lead-Containing Wall Tile	Restroom Ceiling
Classroom 303	Glass Pipe/P-Trap

PMP

Certifications
(Consultant and Lab)

STATE OF CALIFORNIA

Gavin Newsom, Governor

DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Occupational Safety and Health-Asbestos Certification
1750 Howe Avenue, Suite 460
Sacramento, CA 95825
(916) 574-2993 Office http://www.dir.ca.gov/dosh/asbestos.html actu@dir.ca.gov

410035310C 391

PMP Environmental Consulting, Inc.
Shannon M Johanson
5325 Elkhorn Blvd. #360
Sacramento CA 95842

September 27, 2022

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

Please contact our office at the above address or email w any changes in your contact/mailing information within 15 days of the change.

Sincerely,

Jeff Ferrell
Senior Safety Engineer

Attachment: Certification Card

cc: File

Renewal – Card Attached

California Department of PublicHealth

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:	CERTIFICATE TYPE:	NUMBER:	EXPIRATION DATE:
	Lead Inspector/Assessor	LRC-00003375	11/16/2023
	Lead Project Monitor	LRC-00003374	11/16/2023

Shannon Johanson

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at www.cdph.ca.gov/programs/clppb or calling (800) 597-LEAD

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 200757-0

Eurofins EMLab P&K

Tustin, CA

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2022-06-09 through 2022-12-31

Effective Dates

For the National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Eurofins EMLab P&K
2841 Dow Avenue, Suite 300
Tustin, CA 92780
Mr. Dan Shelby
Phone: 623-298-1015
Email: dan.shelby@et.eurofinsus.com
http://www.emlabpk.com

ASBESTOS FIBER ANALYSIS — NVLAP LAB CODE 200757-0

Bulk Asbestos Analysis

Code	Description
18/A01	EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code	Description
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

For the National Voluntary Laboratory Accreditation Program

Colorado Department
of Public Health
and Environment

ASBESTOS LABORATORY

This certifies that

Eurofins EMLab P&K Tustin

Registration No.: AL - 19452

has met the registration requirements of 25-7-507, C.R.S. and the Air Quality Control Commission Regulation No. 8, Part B, and is hereby authorized to perform asbestos laboratory testing activities, as required by Regulation No 8, Part B, in the state of Colorado.

Issued: October 06, 2022
Expires: October 06, 2023

Authorized APCD Representative

SEAL

STATE OF COLORADO

Jared Polis, Governor
Jill Hunsaker Ryan, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado.

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
Located in Glendale, Colorado

Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

http://www.colorado.gov/cdphe

Colorado Department of Public Health and Environment

October 06, 2022

Eurofins EMLab P&K Tustin
2841 Dow Ave. Suite 300
Tustin, CA 92780

AL #: 19452

Thank you for submitting your Asbestos Laboratory registration materials. We are pleased to add Eurofins EMLab P&K Tustin to our online list of registered laboratories to which we often refer the public when they are looking for asbestos laboratory services.

As a registered Asbestos Laboratory with CDPH&E, Eurofins EMLab P&K Tustin has the responsibility to ensure that all analysts are properly trained when performing asbestos analyses in Colorado, and that the laboratory itself has met the accreditation requirements as set forth in Regulation No. 8, Part B, and maintains a current and compliant status with all governing bodies.

The submittal of your annual renewal application at least 30 days prior to your expiration date of 10/6/2023 will help ensure that your Colorado Asbestos Laboratory registration does not lapse.

Please call me at (303) 692-3196 if you have any questions regarding your Asbestos Laboratory registration.

Sincerely,

COLORADO DEPARTMENT OF PUBLIC HEALTH
AND ENVIRONMENT

Jacquie Barela
Air Pollution Control Division
Indoor Environment Program

cc: file ALR-19452

PMP

Laboratory Reports and Chain of Custody

eurofins | Built Environment Testing

Report for:

Shannon Johanson
PMP Environmental Consulting
5325 Elkhorn Blvd #360
5325 Elkhorn Blvd, #360
Sacramento, CA 95842

Regarding: Eurofins EPK Built Environment Testing, LLC
Project: 23-047; Solano College- Bldg. 300
EML ID: 3215973

Approved by:

Laboratory Manager
Danny Li

Dates of Analysis:
Lead - Flame AA: 04-03-2023

Service SOPs: Lead - Flame AA (EM-BC-S-8443)
AIHA-LAP, LLC accredited service, Lab ID #178697

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested. Sample size, as it relates to Wipe samples only, is supplied by the client.

Eurofins EPK Built Environment Testing, LLC ("the Company"), a member of the Eurofins Built Environment Testing group of companies, shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.
Eurofins EPK Built Environment Testing, LLC's LabServe® reporting system includes automated fail-safes to ensure that all AIHA-LAP, LLC quality requirements are met and notifications are added to reports when any quality steps remain pending.

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(866) 888-6653 www.eurofinsus.com/Built

Client: PMP Environmental Consulting
C/O: Shannon Johanson
Re: 23-047; Solano College- Bldg. 300

Date of Sampling: 03-31-2023
Date of Receipt: 04-03-2023
Date of Report: 04-03-2023

LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY

Location:	01Pb: Tan paint on metal	02Pb: Beige paint on metal frame	03Pb: Blue paint on sheetrock
Comments (see below)	None	None	None
Lab ID-Version‡:	15578226-1	15578227-1	15578228-1
Analysis Date:	04/03/2023	04/03/2023	04/03/2023
Sample type	Paint Chip sample	Paint Chip sample	Paint Chip sample
Method*	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	50 ppm	120 ppm	94 ppm
Sample size	0.1990 grams	0.0866 grams	0.1063 grams
§Total Lead Result	< 50 ppm	< 120 ppm	< 94 ppm

Comments:

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA-LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

PMP Environmental Consulting
5325 Elkhorn Blvd., Sacramento, CA 95
(916) 628-5124 • PMPEnvConsulting@gmail.co

003215973

Bulk Request Analysis Form

Client: Solano Community College Dist.

Job Site: Solano College – Bldg. 300

Project ID: 23-047

Project Shannon Johanson

Date Collected: 3-31-23

Collected by: Shannon Johanson

Date Submitted: 3-31-23

Laboratory: Eurofins

Analysis Requested:

____ PLM with Dispersion Staining _x_ Flame AA

____ TEM (Bulk) ____ Other:

Turnaround Time: _x___ Same Day ____ 24 Hour

____ Other: _____

Special Instructions:

____ Please fax results to

__x__ Please email results to: pmpenvconsulting@gmail.com

____ Other: _____

	SAMPLE #	MATERIAL DESCRIPTION/LOCATION	PAINT CONDITION
1	01Pb	Tan Paint on Metal Building 300, Roof Exterior Duct Work & Equipment	Good-Fair
2	02Pb	Beige Paint on Metal Frame Building 300, Staff Restroom	Fair
3	03Pb	Blue Paint on Sheetrock Building 300, Staff Restroom Wall	Intact

Submitted by: Shannon Johanson Date: 3/31/23

Submitted via: ___ Dropoff _x_ FedEx ___ Courier ___Other:

Received by: Johnfany Date: 4/3/23 9:25am

Report for:

Shannon Johanson
PMP Environmental Consulting
5325 Elkhorn Blvd #360
5325 Elkhorn Blvd, #360
Sacramento, CA 95842

Regarding: Eurofins EPK Built Environment Testing, LLC
Project: 23-047; Solano Community College Building 300
EML ID: 3215965

Approved by:

Approved Signatory
Danny Li

Dates of Analysis:
Asbestos PLM: 04-03-2023

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 200757-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins EPK Built Environment Testing, LLC ("the Company"), a member of the Eurofins Built Environment Testing group of companies, shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(866) 888-6653 www.eurofinsus.com/Built

Client: PMP Environmental Consulting
C/O: Shannon Johanson
Re: 23-047; Solano Community College Building 300

Date of Sampling: 03-31-2023
Date of Receipt: 04-03-2023
Date of Report: 04-04-2023

ASBESTOS PLM REPORT

Total Samples Submitted:	24
Total Samples Analyzed:	23
Total Samples with Layer Asbestos Content > 1%:	2

Location: 01A, Roofing Building 300, Lower Roof, South End

Lab ID-Version‡: 15578635-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Composite Non-Asbestos Content:	3% Cellulose
Sample Composite Homogeneity:	Moderate

Location: 01B, Roofing Building 300, Lower Roof, West Side at South

Lab ID-Version‡: 15578636-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Composite Non-Asbestos Content:	10% Cellulose 5% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: 01C, Roofing Building 300, Lower Roof, East Side

Lab ID-Version‡: 15578637-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Composite Non-Asbestos Content:	10% Cellulose 5% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: 01D, Roofing Building 300, Lower Roof at Center

Lab ID-Version‡: 15578638-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Composite Non-Asbestos Content:	10% Cellulose 5% Glass Fibers
Sample Composite Homogeneity:	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. The Company reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(866) 888-6653 www.eurofinsus.com/Built

Client: PMP Environmental Consulting
C/O: Shannon Johanson
Re: 23-047; Solano Community College Building 300

Date of Sampling: 03-31-2023
Date of Receipt: 04-03-2023
Date of Report: 04-04-2023

ASBESTOS PLM REPORT

Location: 01F, Roofing Building 300, Lower Roof, South Side

Lab ID-Version‡: 15578640-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Composite Non-Asbestos Content:	5% Glass Fibers 3% Cellulose
Sample Composite Homogeneity:	Moderate

Location: 01G, Roofing Building 300, Lower Roof, West End

Lab ID-Version‡: 15578641-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Composite Non-Asbestos Content:	10% Cellulose 5% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: 02A, White Duct Seam Tape Building 300, Roof, at HVAC Duct

Lab ID-Version‡: 15578642-1

Sample Layers	Asbestos Content
White Semi-Fibrous Material	ND
Composite Non-Asbestos Content:	25% Cellulose
Sample Composite Homogeneity:	Moderate

Location: 02B, White Duct Seam Tape Building 300, Roof, at HVAC Duct

Lab ID-Version‡: 15578643-1

Sample Layers	Asbestos Content
White Semi-Fibrous Material	ND
Composite Non-Asbestos Content:	25% Cellulose
Sample Composite Homogeneity:	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. The Company reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(866) 888-6653 www.eurofinsus.com/Built

Client: PMP Environmental Consulting
C/O: Shannon Johanson
Re: 23-047; Solano Community College Building 300

Date of Sampling: 03-31-2023
Date of Receipt: 04-03-2023
Date of Report: 04-04-2023

ASBESTOS PLM REPORT

Location: 03A, Black Seam Mastic Building 300, Roof, North Side Center at Duct

Lab ID-Version‡: 15578644-1

Sample Layers	Asbestos Content
Black Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: 04A, Gray/Black Mastic at Duct Seam Building 300, Roof, South Side at East End

Lab ID-Version‡: 15578645-1

Sample Layers	Asbestos Content
Black Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: 05A, Brown Sealant on Glass Vent Pipe Building 300, Roof, South Side

Lab ID-Version‡: 15578646-1

Sample Layers	Asbestos Content
Brown Sealant	ND
Sample Composite Homogeneity:	Moderate

Location: 06A, White Pipe Sealant Building 300, Roof, Near Hatch

Lab ID-Version‡: 15578647-1

Sample Layers	Asbestos Content
Black Mastic	ND
Black Sealant	ND
White Sealant	ND
Composite Non-Asbestos Content:	2% Glass Fibers
Sample Composite Homogeneity:	Moderate

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Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(866) 888-6653 www.eurofinsus.com/Built

Client: PMP Environmental Consulting
C/O: Shannon Johanson
Re: 23-047; Solano Community College Building 300

Date of Sampling: 03-31-2023
Date of Receipt: 04-03-2023
Date of Report: 04-04-2023

ASBESTOS PLM REPORT

Location: 07A, Black Penetration Mastic w/ Silver Paint Building 300, Roof, at Glass Vent Pipe, South Side at West End

Lab ID-Version‡: 15578648-1

Sample Layers	Asbestos Content
Black Mastic with Silver Paint	3% Chrysotile
Sample Composite Homogeneity:	Moderate

Location: 07B, Black Mastic with Silver Paint Building 300, Roof, Center at HVAC Unit

Lab ID-Version‡: 15578649-1

Sample Layers	Asbestos Content
Black Mastic with Silver Paint	3% Chrysotile
Sample Composite Homogeneity:	Moderate

Location: 08A, Gray Bolt Sealant Building 300, Upper Roof, West Side

Lab ID-Version‡: 15578650-1

Sample Layers	Asbestos Content
Gray Sealant	ND
Composite Non-Asbestos Content:	3% Cellulose
Sample Composite Homogeneity:	Moderate

Location: 09A, 2'x4' FCP-Pinhole/Fissure-Old Building 300, Classroom

Lab ID-Version‡: 15578651-1

Sample Layers	Asbestos Content
Gray Fibrous Material	ND
Composite Non-Asbestos Content:	30% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Moderate

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‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(866) 888-6653 www.eurofinsus.com/Built

Client: PMP Environmental Consulting
C/O: Shannon Johanson
Re: 23-047; Solano Community College Building 300

Date of Sampling: 03-31-2023
Date of Receipt: 04-03-2023
Date of Report: 04-04-2023

ASBESTOS PLM REPORT

Location: 09B, 2'x4' FCP-Pinhole/Fissure-Old Building 300, Classroom 301

Lab ID-Version‡: 15578652-1

Sample Layers	Asbestos Content
Gray Fibrous Material	ND
Composite Non-Asbestos Content:	30% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: 10A, White Sink Sealant Building 300, Staff Restroom at Sink

Lab ID-Version‡: 15578653-1

Sample Layers	Asbestos Content
White Sealant	ND
Sample Composite Homogeneity:	Moderate

Location: 11A, Brown Grout Associated with 12" Ceramic Floor Tile/Building 300, Staff Restroom

Lab ID-Version‡: 15578654-1

Sample Layers	Asbestos Content
Brown Grout	ND
Sample Composite Homogeneity:	Moderate

Location: 12A, White Grout Associated with White Subway Tile/Building 300, Staff Restroom

Lab ID-Version‡: 15578655-1

Sample Layers	Asbestos Content
White Grout	ND
Sample Composite Homogeneity:	Moderate

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Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(866) 888-6653 www.eurofinsus.com/Built

Client: PMP Environmental Consulting
C/O: Shannon Johanson
Re: 23-047; Solano Community College Building 300

Date of Sampling: 03-31-2023
Date of Receipt: 04-03-2023
Date of Report: 04-04-2023

ASBESTOS PLM REPORT

Location: 13A, 12" VFT-White Oatmeal Pattern & Mastic Building 300, Classroom 303, East Side

Lab ID-Version‡: 15578656-1

Sample Layers	Asbestos Content
White Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 13B, 12" VFT-White Oatmeal Pattern & Mastic Building 300, Classroom 303, South Side

Lab ID-Version‡: 15578657-1

Sample Layers	Asbestos Content
White Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 14A, Black Science Countertop Building 300, Classroom 303, West Wall

Lab ID-Version‡: 15578658-1

Sample Layers	Asbestos Content
Black Cementitious Material	ND
Sample Composite Homogeneity:	Moderate

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Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

PMP Environmental Consulting
5325 Elkhorn Blvd., Sacramento, CA 95642
(916) 628-5124 • PMPEnvConsulting@gmail.com

003215965

Bulk Request Analysis Form

Client: Solano Community College
Job Site: Building 300
Project ID: 23-047
Project Shannon Johanson
Date Collected: 03/31/23
Collected by: Shannon Johanson
Date Submitted: 3/31/23
Laboratory: Eurofins

Analysis Requested:
_x___ PLM with Dispersion Staining __ Flame AA
____ TEM (Bulk) ____ Other:
Turnaround Time: _x___ Same Day ____ 24 Hour
____ Other: _____

Special Instructions:
____ Please fax results to
__x__ Please email results to: pmpenvconsulting@gmail.com
____ Other: _____

	SAMPLE #	MATERIAL DESCRIPTION/LOCATION	SQUARE FOOTAGE
1	01A	Roofing Building 300, Lower Roof, South End	31000
2	01B	Roofing Building 300, Lower Roof, West Side at South	---
3	01C	Roofing Building 300, Lower Roof, East Side	---
4	01D	Roofing Building 300, Lower Roof at Center	---
5	01E	Roofing Building 300, West Side at North End	---
6	01F	Roofing Building 300, Upper Roof, South Side	---
7	01G	Roofing Building 300, Upper Roof, West End	---
8	02A	White Duct Seam Tape Building 300, Roof, at HVAC Duct	30 LF
9	02B	White Duct Seam Tape Building 300, Roof, at HVAC Duct	---
10	03A	Black Seam Mastic Building 300, Roof, North Side Center at Duct	60 LF

Submitted by: Shannon Johanson Date: 3/31/23

Submitted via: ___ Dropoff _X_ FedEx ___ Courier ___Other:

Received by: Sohntang Date: 4/3/23
9:25am

PMP Environmental Consulting
5325 Elkhorn Blvd., Sacramento, CA 95642
(916) 628-5124 • PMPEnvConsulting@gmail.com

003215965

Bulk Request Analysis Form

Client: Solano Community College
Job Site: Building 300
Project ID: 23-047
Project Shannon Johanson
Date Collected: 03/31/23
Collected by: Shannon Johanson
Date Submitted: 3/31/23
Laboratory: Eurofins

Analysis Requested:
_x___ PLM with Dispersion Staining __ Flame AA
____ TEM (Bulk) ____ Other:
Turnaround Time: _x___ Same Day ____ 24 Hour
____ Other: _____

Special Instructions:
____ Please fax results to
__x__ Please email results to: pmpenvconsulting@gmail.com
____ Other: _____

	SAMPLE #	MATERIAL DESCRIPTION/LOCATION	SQUARE FOOTAGE
11	04A	Gray/Black Mastic at Duct Seam Building 300, Roof, South Side at East End	20 LF
12	05A	Brown Sealant on Glass Vent Pipe Building 300, Roof, South Side	Approx. 10 Each
13	06A	White Pipe Sealant Building 300, Roof, Near Hatch	5 SF
14	07A	Black Penetration Mastic w/Silver Paint Building 300, Roof, at Glass Vent Pipe, South Side at West End	1000 SF
15	07B	Black Mastic with Silver Paint Building 300, Roof, Center at HVAC Unit	1000 SF
16	08A	Gray Bolt Sealant Building 300, Upper Roof, West Side	20 LF
17	09A	2'x4' FCP-Pinhole/Fissure-Old Building 300, Classroom	500 SF
18	09B	2'x4' FCP-Pinhole/Fissure-Old Building 300, Classroom 301	---
19	10A	White Sink Sealant Building 300, Staff Restroom at Sink	20 LF
20	11A	Brown Grout Associated with 12" Ceramic Floor Tile/Building 300, Staff Restroom	

Submitted by: Shannon Johanson Date: 3/31/23

Submitted via: ___ Dropoff X FedEx ___ Courier ___Other:

Received by: John Ang Date: 4/3/23.

PMP Environmental Consulting
5325 Elkhorn Blvd., Sacramento, CA 95642
(916) 628-5124 • PMPEnvConsulting@gmail.com

003215965

Bulk Request Analysis Form

Client: Solano Community College
Job Site: Building 300
Project ID: 23-047
Project Shannon Johanson
Date Collected: 03/31/23
Collected by: Shannon Johanson
Date Submitted: 3/31/23
Laboratory: Eurofins

Analysis Requested:
_x___ PLM with Dispersion Staining __ Flame AA
____ TEM (Bulk) ____ Other:
Turnaround Time: _x___ Same Day ____ 24 Hour
____ Other: _____

Special Instructions:
____ Please fax results to
__x__ Please email results to: pmpenvconsulting@gmail.com
____ Other: _____

	SAMPLE #	MATERIAL DESCRIPTION/LOCATION	SQUARE FOOTAGE
21	12A	White Grout Associated with White Subway Tile/Building 300, Staff Restroom	
22	13A	12" VFT-White Oatmeal Pattern & Mastic Building 300, Classroom 303, East side	900 SF
23	13B	12" VFT-White Oatmeal Pattern & Mastic Building 300, Classroom 303, South Side	---
24	14A	Black Science Countertop Building 300, Classroom 303, West Wall	

Submitted by: Shannon Johanson
Date: 3/31/23
Submitted via: ___ Dropoff X FedEx ___ Courier ___ Other:
Received by: John Tang
Date: 4/3/23
9:25am

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA LAP, LLC Accreditation ID 100531

Built Environment Testing
Analytics

April 10, 2023

SHANNON JOHANSON
PMP ENVIRONMENTAL CONSULTING INC
#360
5325 ELKHORN BLVD
SACRAMENTO, CA 95842

Laboratory Workorder ID: B093127

Client Project ID: 23-047
Received: April 3, 2023
Reported: April 10, 2023

Attached are the results we obtained on the analysis of your samples submitted to Analytics. Any Chains-of-Custody associated by this sample group are enclosed. Air concentrations are calculated as a convenience to the client and the overall accuracy of this result depends on both the accuracy of the air volume and the amount found by analysis. Theoretical air volumes for passive monitors are calculated using the sampling time submitted and the manufacture's listed sampling rate for each compound. Results provided in this report relate only to the items tested.

For blanks and non-detects the results indicated with a '<' value represents the reporting limit for the analysis. Unless otherwise noted results are not corrected for blank values.

Unless the signature of the appropriate manager(s) appears on this report, this report should be considered PRELIMINARY and is subject to change.

We appreciate your confidence in allowing Analytics to be your testing laboratory. Any questions regarding this report can be addressed by calling our customer services department at (800) 888-8061.

Andrew L. Teague, CIH
Technical Director

Enclosures

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA LAP, LLC Accreditation ID 100531

Final Report

PMP ENVIRONMENTAL CONSULTING INC
#360
5325 ELKHORN BLVD
SACRAMENTO, CA 95842

Customer: 46525589
Attention: SHANNON JOHANSON
PO Number SHANNON JOHANSO

Date Received: 04/03/23
Client Project ID 23-047

Lab ID: B093127001 Sample ID: 01 CLASS ROOM 303, GLASS PIPE (P-TRAP) Media: Wipe Sample Sample Date: 3/31/2023

Analyte	Method	Analysis Date	Volume		Reporting Limit	Front	Rear	Total	Concentration
Aluminum	OSHA ID 125	04/07/23	NAG	cm2	4 ug			119 ug	--
Antimony	OSHA ID 125	04/07/23	NAG	cm2	4 ug			< 4 ug	--
Beryllium	OSHA ID 125	04/07/23	NAG	cm2	0.05 ug			0.075 ug	--
Cadmium	OSHA ID 125	04/07/23	NAG	cm2	2 ug			< 2 ug	--
Chromium	OSHA ID 125	04/07/23	NAG	cm2	4 ug			< 4 ug	--
Cobalt	OSHA ID 125	04/07/23	NAG	cm2	4 ug			< 4 ug	--
Copper	OSHA ID 125	04/07/23	NAG	cm2	2 ug			92.54 ug	--
Iron Oxide	OSHA ID 125	04/07/23	NAG	cm2	5.7 ug			354 ug	--
Lead	OSHA ID 125	04/07/23	NAG	cm2	4 ug			< 4 ug	--
Manganese	OSHA ID 125	04/07/23	NAG	cm2	4 ug			202.6 ug	--
Molybdenum	OSHA ID 125	04/07/23	NAG	cm2	4 ug			< 4 ug	--
Nickel	OSHA ID 125	04/07/23	NAG	cm2	4 ug			4.135 ug	--
Titanium Dioxide	OSHA ID 125	04/07/23	NAG	cm2	6.7 ug			79.13 ug	--
Vanadium	OSHA ID 125	04/07/23	NAG	cm2	4 ug			< 4 ug	--
Zinc Oxide	OSHA ID 125	04/07/23	NAG	cm2	49.6 ug			120.3 ug	--

Zinc Oxide was found in the Laboratory media blank (38.4 ug). Laboratory control samples were corrected with acceptable recovery.

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA LAP, LLC Accreditation ID 100531

Final Report

General Laboratory Comments

Abbreviations:
ug = micrograms; mg=milligrams; g = grams, ppm=parts per million (volume), ppb = parts per billion (volume), mg/M3=milligrams per cubic meter of air, ug/M3=micrograms per cubic meter of air; Min=minutes, Qual=Qualifiers

PMP Environmental Consulting
5325 Elkhorn Blvd., Sacramento, CA 95642
(916) 628-5124 • PMPEnvConsulting@gmail.com

B093127

Bulk Request Analysis Form

Client: Solano Community College Dist.
Job Site: Solano College – Building 300
Project ID: 23-047
Project Manager: Shannon Johanson
Date Collected: 3/31/23
Collected by: Shannon Johanson
Date Submitted: 3/31/23
Laboratory: Eurofins

Analysis Requested:
____ PLM with Dispersion Staining __ Flame AA
____ TEM (Bulk) __x__ Other: OSHA-ID125G
Turnaround Time: __ Same Day ____ 24 Hour 8y.
____ Other: _____

Special Instructions:
____ Please fax results to
__x__ Please email results to: pmpenvconsulting@gmail.com
____ Other: _____

	SAMPLE #	MATERIAL DESCRIPTION/LOCATION	SQUARE FOOTAGE
1	01	Wipe Sample Classroom 303, Glass Pipe (P-Trap)	

Submitted by: Shannon Johanson Date: 3/31/23

Submitted via: ___ Dropoff __x__ FedEx ___ Courier ___Other:

Received by: SUSAN YANT Date: 4/3/23 11:48am.

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA LAP, LLC Accreditation ID 100531

Built Environment Testing
Analytics

April 11, 2023

SHANNON JOHANSON
PMP ENVIRONMENTAL CONSULTING INC
#360
5325 ELKHORN BLVD
SACRAMENTO, CA 95842

Laboratory Workorder ID: B093152

Client Project ID: 23-047 SOLANO COLLEGE-BUILD300
Received: April 3, 2023
Reported: April 11, 2023

Attached are the results we obtained on the analysis of your samples submitted to Analytics. Any Chains-of-Custody associated by this sample group are enclosed. Air concentrations are calculated as a convenience to the client and the overall accuracy of this result depends on both the accuracy of the air volume and the amount found by analysis. Theoretical air volumes for passive monitors are calculated using the sampling time submitted and the manufacture's listed sampling rate for each compound. Results provided in this report relate only to the items tested.

For blanks and non-detects the results indicated with a '<' value represents the reporting limit for the analysis. Unless otherwise noted results are not corrected for blank values.

Unless the signature of the appropriate manager(s) appears on this report, this report should be considered PRELIMINARY and is subject to change.

We appreciate your confidence in allowing Analytics to be your testing laboratory. Any questions regarding this report can be addressed by calling our customer services department at (800) 888-8061.

Andrew L. Teague, CIH
Technical Director

Enclosures

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA LAP, LLC Accreditation ID 100531

Final Report

PMP ENVIRONMENTAL CONSULTING INC	Customer:	46525589	Date Received:	04/03/23
#360 5325 ELKHORN BLVD	Attention:	SHANNON JOHANSON		
SACRAMENTO, CA 95842	PO Number	SHANNON JOHANSO	Client Project ID	23-047 SOLANO COLLEGE-BUILD300

Lab ID: B093152001 Sample ID: 01 WIPE Media: Wipe Sample Sample Date: 3/31/2023

Analyte	Method	Analysis Date	Volume		Reporting Limit	Front	Rear	Total	Concentration
Mercury	SW846 7471A	04/05/23	NAG	cm2	0.075 ug			< 0.075 ug	--

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA LAP, LLC Accreditation ID 100531

Final Report

General Laboratory Comments

Abbreviations:
ug = micrograms; mg=milligrams; g = grams, ppm=parts per million (volume), ppb = parts per billion (volume), mg/M3=milligrams per cubic meter of air, ug/M3=micrograms per cubic meter of air; Min=minutes, Qual=Qualifiers

PMP Environmental C
5325 Elkhorn Blvd., Sacramento,
(916) 628-5124 • PMPEnvConsulting@gmail.com

B093152

Bulk Request Analysis Form

Client: Solano Community College Dist.
Job Site: Solano College – Building 300
Project ID: 23-047
Project Manager: Shannon Johanson
Date Collected: 3/31/23
Collected by: Shannon Johanson
Date Submitted: 3/31/23
Laboratory: Eurofins

Analysis Requested:
___ PLM with Dispersion Staining __ Flame AA
____ TEM (Bulk) __x__ Other: EPA 7471A
Turnaround Time: __ Same Day ____ 24 Hour
____ Other: ___Standard

Special Instructions:
____ Please fax results to
__x__ Please email results to: pmpenvconsulting@gmail.com
____ Other: _____

	SAMPLE #	MATERIAL DESCRIPTION/LOCATION	SQUARE FOOTAGE
1	01	Wipe Sample Classroom 303, Sink, Glass Pipe (P-Trap)	

Submitted by: Shannon Johanson Date: 3/31/23

Submitted via: ___ Dropoff X FedEx ___ Courier ___Other:

Received by: Hannah Whitlock Date: 4/3/23

Hannah Whitlock

13:35

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA LAP, LLC Accreditation ID 100531

Built Environment Testing
Analytics

April 12, 2023

SHANNON JOHANSON
PMP ENVIRONMENTAL CONSULTING INC
#360
5325 ELKHORN BLVD
SACRAMENTO, CA 95842

Laboratory Workorder ID: B093151

Client Project ID: 23-047 SOLANO COLLEGE-BUILD300
Received: April 3, 2023
Reported: April 12, 2023

Attached are the results we obtained on the analysis of your samples submitted to Analytics. Any Chains-of-Custody associated by this sample group are enclosed. Air concentrations are calculated as a convenience to the client and the overall accuracy of this result depends on both the accuracy of the air volume and the amount found by analysis. Theoretical air volumes for passive monitors are calculated using the sampling time submitted and the manufacture's listed sampling rate for each compound. Results provided in this report relate only to the items tested.

For blanks and non-detects the results indicated with a '<' value represents the reporting limit for the analysis. Unless otherwise noted results are not corrected for blank values.

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We appreciate your confidence in allowing Analytics to be your testing laboratory. Any questions regarding this report can be addressed by calling our customer services department at (800) 888-8061.

Andrew L. Teague, CIH
Technical Director

Enclosures

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA LAP, LLC Accreditation ID 100531

Final Report

PMP ENVIRONMENTAL CONSULTING INC	Customer:	46525589	Date Received:	04/03/23
#360 5325 ELKHORN BLVD	Attention:	SHANNON JOHANSON		
SACRAMENTO, CA 95842	PO Number	SHANNON JOHANSO	Client Project ID	23-047 SOLANO COLLEGE-BUILD300

Lab ID: B093151001 Sample ID: 01 WIPE Media: Wipe Sample Sample Date: 3/31/2023

Analyte	Method	Analysis Date	Volume		Reporting Limit	Front	Rear	Total	Concentration
Cyanide	SW846 Method 9014	04/12/23	NAG	cm2	1.0 ug			< 1 ug	--

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA LAP, LLC Accreditation ID 100531

Final Report

General Laboratory Comments

Abbreviations:
ug = micrograms; mg=milligrams; g = grams, ppm=parts per million (volume), ppb = parts per billion (volume), mg/M3=milligrams per cubic meter of air, ug/M3=micrograms per cubic meter of air; Min=minutes, Qual=Qualifiers

PMP Environmental Co
5325 Elkhorn Blvd., Sacramento, C
(916) 628-5124 • PMPEnvConsulting@gmail.com

B093151

Bulk Request Analysis Form

Client: Solano Community College Dist.
Job Site: Solano College – Building 300
Project ID: 23-047
Project Manager: Shannon Johanson
Date Collected: 3/31/23
Collected by: Shannon Johanson
Date Submitted: 3/31/23
Laboratory: Eurofins

Analysis Requested:

____ PLM with Dispersion Staining __ Flame AA

____ TEM (Bulk) __x__ Other: EPA 9010C/9014

Turnaround Time: __ Same Day ____ 24 Hour

_x___ Other: ___Standard_____

Special Instructions:

____ Please fax results to

__x__ Please email results to: pmpenvconsulting@gmail.com

____ Other: _____

	SAMPLE #	MATERIAL DESCRIPTION/LOCATION	SQUARE FOOTAGE
1	01	Wipe Sample Classroom 303, Sink, Glass Pipe (P-Trap)	

Submitted by: Shannon Johanson Date: 3/31/23

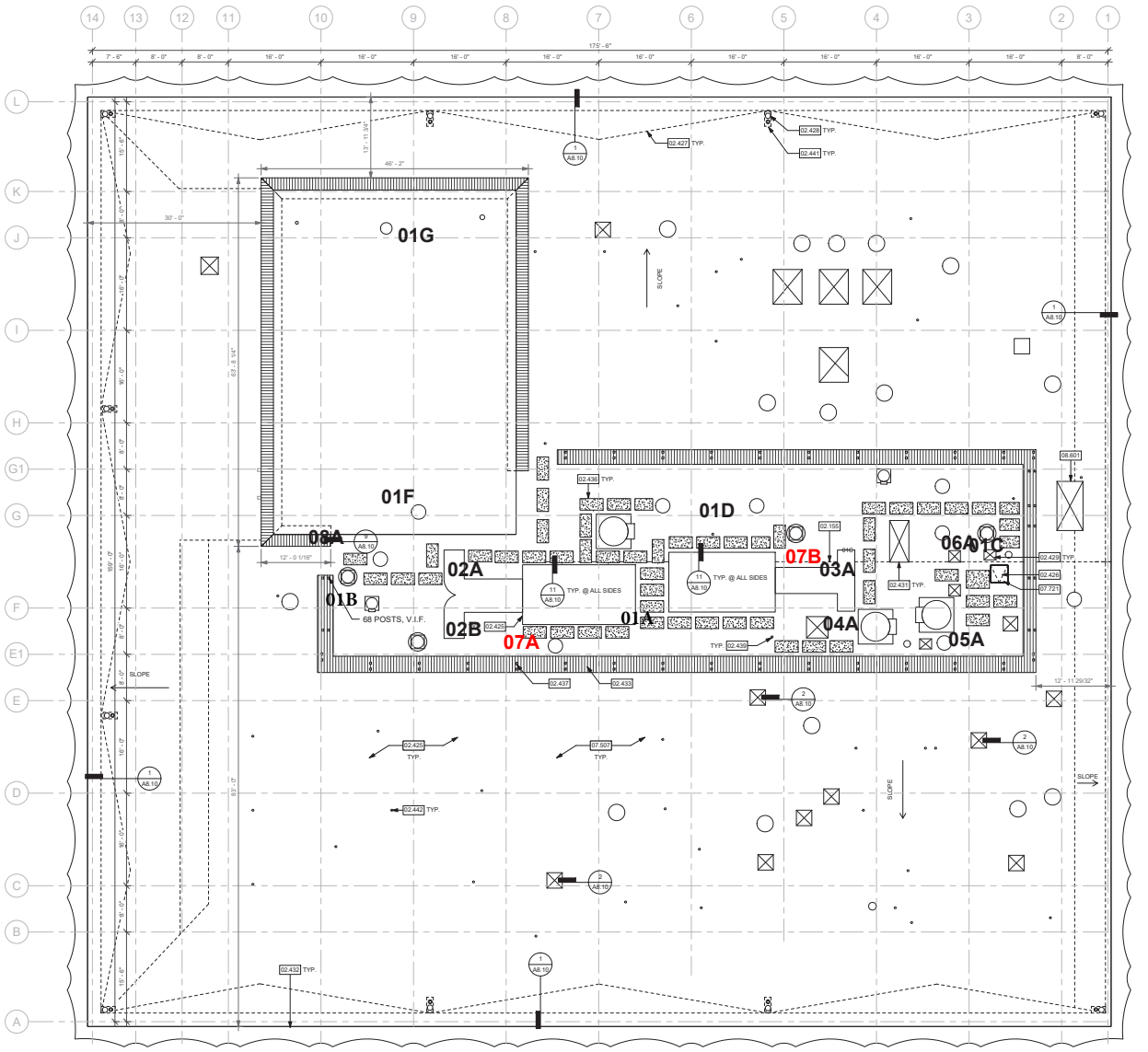
Submitted via: ___ Dropoff ✓ FedEx ___ Courier ___Other:

Received by: Hannah Whitlock Date: 4/3/23

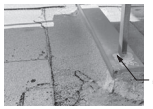
Hannah Whitlock 13:20

PMP

Sample Maps



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



EQUIPMENT CURB WITH LEGS, TYP.

ROOF HATCH AND EQUIPMENT CURB, TYP.

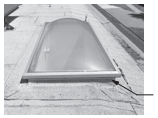
DRAIN, TYP.

EQUIPMENT CURB AND FASTENING, TYP.

EQUIPMENT CURB AND PIPE PENETRATION, TYP.

MECHANICAL SCREEN BASE WITH SQUARE TUBE STANCHION TYP.

GLASS VENT, TYP.



SKYLIGHT

VENT, TYP.

GENERAL SHEET NOTES

A REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR EXTENT OF MECHANICAL, PLUMBING, AND ELECTRICAL WORK.

B ALL EXPOSED SHEET METAL SHALL BE KYNAR COATED ALUMINUM OR STAINLESS STEEL.

C ALL TAPERED CRICKETS TO BE NEW.

D CONTRACTOR IS RESPONSIBLE FOR STAGING, FENCING AND SECURITY OF ALL MATERIALS AND EQUIPMENT.

E SIZE OF MECHANICAL EQUIPMENT PADS ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL VERIFY REQUIRED PAD DIMENSION WITH EQUIPMENT MANUFACTURER.

F ROOF CRICKETS, WHERE INDICATED, SHALL BE PROVIDED AS REQUIRED TO ENSURE A MINIMUM 1/4" PER FOOT VALLEY SLOPE. COORDINATE LOCATIONS OF CRICKETS WITH ROOFTOP EQUIPMENT.

G PROVIDE PRECAST CONCRETE SPLASH BLOCK AT ALL EXISTING AND NEW DOWNSPOUT THAT ARE DAYLIGHTED TO PAVEMENT AND LANDSCAPED AREAS. SPLASH BLOCKS TO SLOPE AWAY FROM BUILDING. AVOID PLACEMENT OF SPLASH BLOCKS WHERE IT DIRECTLY INTERFERES WITH PATH OF TRAVEL OR POSES A HAZARD. SPLASH BLOCKS TO HAVE MINIMUM DIMENSION OF 20" L X 12"W X 3" H. PROVIDE CUT SHEETS AND SAMPLE OF SPLASH BLOCK AS PART OF SUBMITTAL PROCESS.

H WHENEVER POSSIBLE, REUSE BLOCKING AT MECHANICAL EQUIPMENT CURBS. REPLACE BLOCKING IN KIND WHEN TOO DAMAGED TO REUSE.

I ALL ITEMS REFERENCED IN KEYNOTES ARE TO BE PROVIDED NEW, U.O.N.

J CONTRACTOR IS REQUIRED TO NOTIFY THE OWNER, IT'S REPRESENTATIVE & ARCHITECT PRIOR TO DISCONNECTING ANY EXISTING EQUIPMENT AND/OR UTILITY LINES. PROVIDE MINIMUM OF 48 HOURS WRITTEN NOTICE PRIOR TO DISCONNECTING.

K IT IS THE CONTRACTORS RESPONSABILITY TO NOTIFY THE OWNER, OWNERS REPRESENTATIVE & ARCHITECT OF ANY EXISTING DEFORMITIES SUCH AS MOLD, DRY ROT ETC. STRUCTURAL DEFICIENCIES IN EXISTING STRUCTURE REVEALED DURING THE DEMOLITION PHASE WILL NEED TO ADDRESSED BY THE STRUCTURAL ENGINEER AND MAY REQUIRE APPROVAL OF DIVISION OF STATE ARCHITECT (DSA). IN SUCH CASES, CONTRACTOR IS REQUIRED TO PROCEED WITH THAT PORTION OF WORK ONLY AFTER WRITTEN APPROVAL BY THE STRUCTURAL ENGINEER AND/OR DSA. THIS DETERMINATION WILL BE MADE BY THE ARCHITECT AND ITS ENGINEER AND THE CONTRACTOR WILL BE PROVIDED A WRITTEN DIRECTIVE ON REMEDYING THE DEFICIENCY. ANY WORK CARRIED OUT PRIOR TO OR WITHOUT APPROVAL OF ENGINEER OR DSA (AS CASE MAY BE), WILL BE AT RISK. THE OWNER, ITS REPRENSENTATIVE AND THE ACHITECT (AND ITS ENGINEER) WILL NOT BE RESPONSIBLE FOR ANY COSTS INCURRED FOR NON-COMPLIANT WORK CARRIED OUT WITHOUT THE EXPRESS APPROVAL OF THE ENGINEER OR DSA.

L REMOVE EXISTING BUILT UP ROOF TO EXISTING SLOPED PLYWOOD SHEATHING. CLEAN ROOF AND REMOVE ANY DEBRIS, NAILS AND OTHER APPURTENANCES PRIOR TO INSTALLING NEW ROOF.

M CONTRACTOR IS REQUIRED TO VERIFY ALL DIMENSIONS, EXISTING EQUIPMENT AND CONDITIONS ON THE ROOF.

N EXISTING TILE ROOF MANSARD TO REMAIN

O ALL EXISTING PIPING, CONDUITS, OR STRUCTURAL PENETRATIONS THROUGH ROOF ARE TO BE FLASHED PER NATIONAL ROOFING CONTRACTORS ASSOCIATION STANDARD DETAILS.

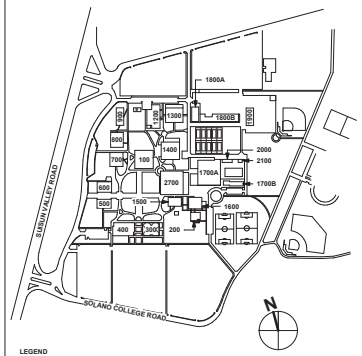
P ROOF CRICKETS, WHERE INDICATED, SHALL BE PROVIDED AS REQUIRED TO ENSURE A MINIMUM 1/4" PER FOOT VALLEY SLOPE. COORDINATE LOCATIONS OF CRICKETS WITH ROOFTOP EQUIPMENT.

Q CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL EQUIPEMENT TO REMAIN INCLUDING UTILITY LINES AND OTHER DEVICES EXISTING ON THE ROOF.

ROOF PLAN KEYNOTES

02.155 (E) RIDGE
02.425 REMOVE (E) BUILT-UP ROOF ASSEMBLY DOWN TO (E) STRUCTURAL DECKING, TYP. THROUGHOUT FULLY ADHERE 80 MIL. TPO ROOFING SYSTEM ON COVERBOARD, TYP. THROUGHOUT.
02.426 (E) ROOF HATCH TO REMAIN. FLASH PER DETAIL
02.427 (E) SLOPED PLYWOOD CRICKET, TYP. MIN. 1/4" SLOPE TOWARDS DRAIN & RIDGE MIN. 2" ABOVE DRAIN RIM. V.I.F.
02.428 NEW COMBINATION ROOF DRAIN WITH OVERFLOW, TYP.VERIFY QUANTITY IN THE FIELD. PROTECT DURING CONSTRUCTION & FLUSH AT COMPLETETION OF WORK. SEE DETAIL 5 / A8.11
02.429 (E) ROOF MOUNTED EQUIPMENT TO REMAIN. PROTECT IN PLACE. TYP.
02.431 (E) CURB MOUNTED EQUIPMENT TO REMAIN, VERIFY QUANTITY IN THE FIELD. REFER TO DETAIL PER TYPE OF EQUIPEMENT. SEE PHOTOS OF EXISTING TYPE OF EQUIPEMENT ON THE PLAN.
02.432 EDGE OF CONCRETE TILE ROOF BELOW, CLEAN TILE
02.433 (E) MECHANICAL SCREEN TO REMAIN, TYP.
02.436 WALKING PADS. TYP. LOCATE AS SHOWN. APPLY PER MFR'S INSTRUCTIONS
02.437 (E) MECHANICAL SCREEN STANCHIONS, TYPICAL OF 68, VERIFY QUANTITY IN THE FIELD. FLASH WITH CUSTOM PREFABRICATED SQUARE TUBE SPLIT WRAP PER DETAIL 3 / A8.11
02.439 (E) PLUMBING VENT, VERIFY QUANTITY IN THE FIELD. REFER TO DETAIL 7 / A8.10
02.441 DEMO (E) ROOF DECK AT DRAIN AND OVERFLOW LOCATIONS. FRAME FOR NEW SUMPS, TYP. SEE DETAIL 5 / A8.11
02.442 (E) GLASS VENT TO REMAIN, FLASH PER DETAIL 7 / A8.11
07.507 FULLY ADHERE 80 MIL. TPO ROOFING SYSTEM (CLASS A) ON COVERBOARD, TYP. THOUGHOUT. 8 / A8.10
07.721 PROVIDE NEW STEEL LADDER UP SAFETY POST. BILCO LU-1 OR EQUAL. INSTALL PER MANUFACTURER'S REQUIREMENTS 2 / A8.11
08.601 (E) DOME SKYLIGHT, FLASH PER DETAIL 10 / A8.10

BUILDING KEY



LEGEND
BUILDINGS IN SCOPE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120607 INC.
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/17/2023

aedis architects
www.aedisarchitects.com
387 S. 1st Street, Suite 300
San Jose, CA 95113
tel: (408)-300-5160
fax: (408)-300-5121

PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

STAMP

STATE
DSA FILE NUMBER 48-C1
APPL # 02-120607

REVISIONS

No.	Description	Date
△		

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET
ROOF PLAN

DATE 02.21.2023
JOB # 2022012
SHEET # A5.01

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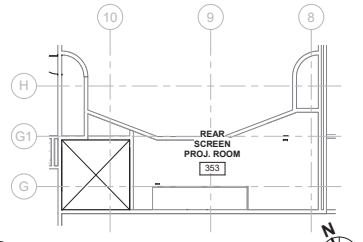
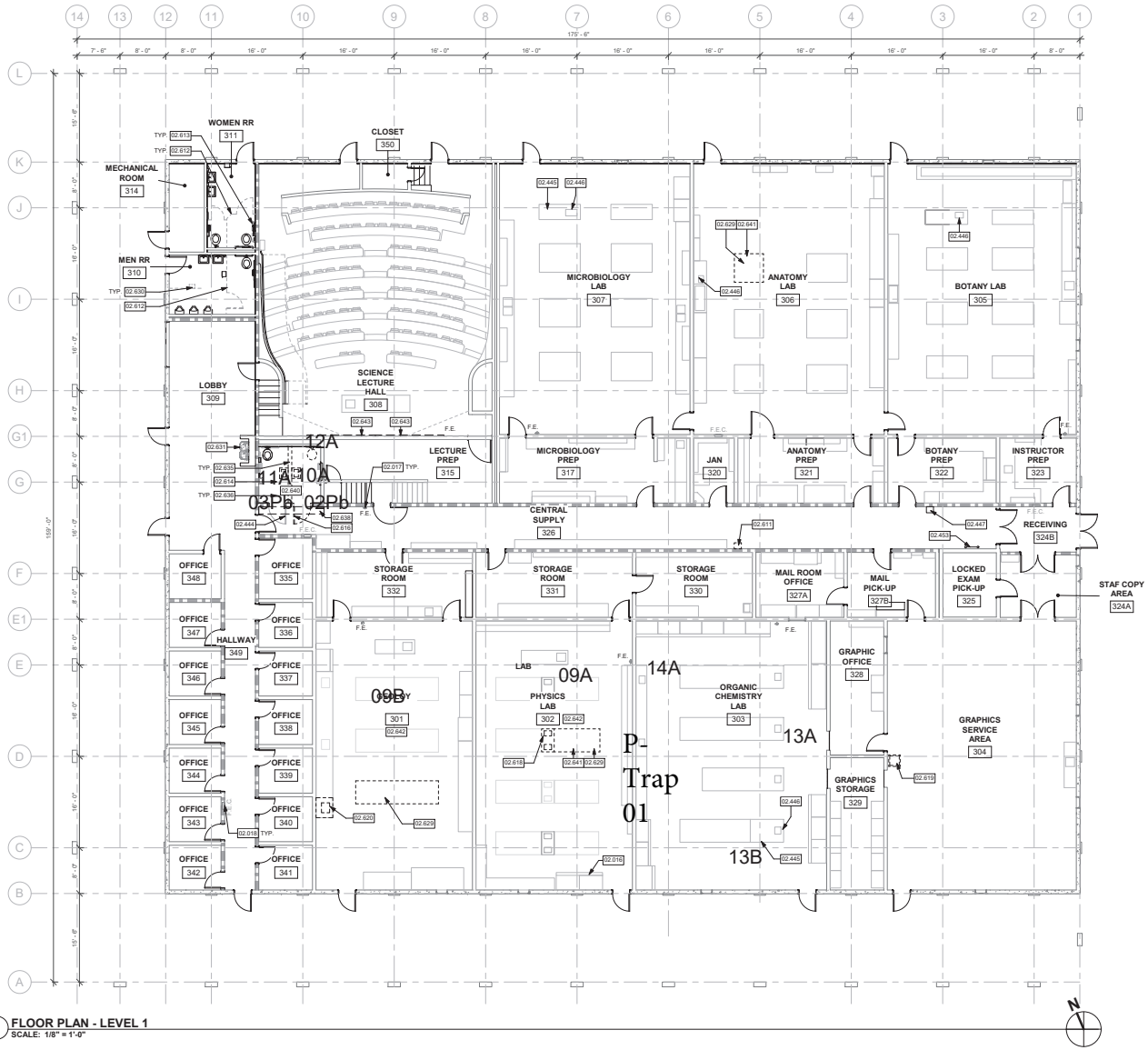
ASBESTOS NOTE:
ASBESTOS CONTAINING PRODUCT ARE PRESENT IN THE EXISTING BUILDING CONSTRUCTION. REFER TO ASBESTOS AND LEAD BASED PAINT SURVEY REPORT PREPARED BY PMP ENVIRONMENTAL CONSULTING ON NOVEMBER 18, 2019 FOR SOLANO COMMUNITY COLLEGE.

MATERIALS WHICH CONTAIN ASBESTOS INCLUDE GRAY PUTTY ASSOCIATED WITH BLACK SINKS, CEMENT RESIN COUNTERTOPS, TRANSITE PANELS WITHIN FUME HOODS, BEIGE HVAC TAPING LOCATED IN PLENUM AREA, ALL VINYL FLOOR TILE AND MASTIC.

IF ADDITIONAL SUSPECT MATERIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER' S REPRESENTATIVE FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH ADDITIONAL WORK. THE CONTRACTOR SHALL IMMEDIATLY POST NOTICES AND TAKE PRECAUTIONS NECESSARY TO ENSURE THE HEALTH AND SAFETY OF ALL WORKERS, THE STAFF AND THE PUBLIC.



2 **SECOND FLOOR DEMO PLAN**
SCALE: 1/8" = 1'-0"



1 **FLOOR PLAN - LEVEL 1**
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

A ROOM NAMES OR NUMBERS MAY NOT BE CONSISTENT BETWEEN DEMOLITION AND NEW FLOOR PLANS.

B REFER TO MECHANICAL, PLUMBING, ELECTRICAL AND FIRE ALARM DRAWINGS FOR EXTENT OF MECHANICAL, PLUMBING, ELECTRICAL AND FIRE ALARM DEMOLITION WORK.

C VERIFY LIMITS OF DEMOLITION WITH SCOPE OF NEW WORK PRIOR TO COMMENCING WORK.

D ALL ITEMS SHOWN DASHED ARE TO BE DEMOLISHED UNLESS OTHERWISE NOTED ON PLANS.

E REMOVE ALL MISCELLANEOUS TRIM, CASEWORK, EQUIPMENT, CONDUIT, BASES, AND OTHER SURFACE MOUNTED ITEMS WHETHER SHOWN OR NOT ON PARTITIONS TO BE DEMOLISHED. REMOVE AND CAP ALL OUTLETS, SWITCHES, WIRES, THERMOSTATS, ETC. TO THEIR SOURCE AS REQUIRED. SEE CONSULTANTS' DRAWINGS FOR ADDITIONAL INFORMATION AND SCOPE OF WORK.

F AT CEILINGS TO BE REMOVED, REMOVE ALL CEILINGS, SOFFITS, RELATED SUPPORT SYSTEMS AND ACCESSORIES, AND CEILING MOUNTED ITEMS. COORDINATE WITH MECHANICAL, PLUMBING, FIRE PROTECTION, AND ELECTRICAL DRAWINGS.

G REMOVE WALL FINISHES AND GYP. BOARD DOWN TO STUDS. PREPARE FOR NEW SUBSTRATE AND WALL FINISHES PER NEW WALL TYPES.

H ALL FLOORING MATERIALS ARE TO BE REMOVED TO TOP OF EXISTING SLAB BY MECHANICAL MEANS U.O.N. REVIEW SECTION 024113 AS APPLICABLE. TOP OF EXISTING SLAB TO BE LEFT SMOOTH, CLEAN, AND FREE OF ALL ADHESIVE AND READY FOR INSTALLATION OF NEW FLOORING.

I EXISTING EQUIPMENT INDICATED TO BE RELOCATED PER NEW PLAN IS TO BE STORED AND PROTECTED DURING CONSTRUCTION.

DEMOLITION FLOOR PLAN KEYNOTES

02.016	ABANDONED (E) FUME HOOD - NOT IN USE
02.017	(E) WALL MOUNTED FIRE EXTINGUISHER
02.018	(E) FIRE EXTINGUISHER CABINET
02.444	(E) DOOR AND FRAME TO REMAIN
02.445	(E) ACCESSIBLE CABINET SURFACE W/INTEGRATED POWER
02.446	(E) ACCESSIBLE CABINET SURFACE W/SINK
02.447	(E) RESPIRATOR CABINET. RELOCATE PER NEW FLOOR PLAN
02.453	(E) ROOF ACCESS LADDER TO REMAIN
02.611	RELOCATE (E) RESPIRATOR STORAGE CABINET
02.612	REMOVE AND REPLACE (E) TOILET PARTITION, TYP.
02.613	REMOVE GRAB BARS AND TOILET ACCESSOIRES. REPLACE PER PROPOSED PLAN
02.614	DEMO (E) RESTROOM PLUMBING FIXTURES, ACCESSOIRIES AND FINISHES, S.P.D.
02.616	DEMO DOOR AND ASSOCIATED FRAME
02.618	DEMO (E) CABINET/ COUNTER WITH SINK AND INTEGRATED POWER AND REPLACE WITH NEW CABINET/ COUNTER WITH SINK AND INTEGRATED POWER. SEE PLUMBING /ELECTRICAL DRAWINGS AND PROPOSED FLOOR PLAN.
02.619	DEMO AND REPLACE (E) SINK, SEE NEW FLOOR PLAN
02.620	DEMO (E) 48" CABINET AND SINK. CUT (E)COUNTER AND BACKSPLASH TO ALLOW JOINT WITH NEW COUNTER. REPLACE WITH NEW ADA ACCESSIBLE CABINET W/SINK. S.P.D., PROPOSED FLOOR PLAN AND ELEVATIONS ON
02.629	REMOVE AND REPLACE (E) LAB TABLE. SEE PROPOSED FLOOR PLAN AND ELEVATIONS
02.630	REMOVE (E) PAPER TOWEL DISPENSER AND RETURN TO THE DISTRICT
02.631	REMOVE AND REPLACE (E) HI-LO DRINKING FOUTAIN, S.P.D AND PROPOSED FLOOR PLAN AND DETAIL 7 / A9.10
02.635	DEMO (E) WALL AND CURB PER PLAN
02.636	DEMO (E) FLOOR AND WALL TILE
02.638	REMOVE (E) VCT TILE IN AREA OF CONSTRUCTION AS REQUIRED. SEE PROPOSED FLOOR PLAN
02.640	SAWCUT (E) CONCRETE SLAB AS REQUIRED FOR NEW PLUMBING WORK, S.P.D.
02.641	REMOVE CONDUIT AT POWERED TABLE, PROTECT WIRES DURING CONSTRUCTION; PREPARE AREA FOR NEW WORK, S.E.D.
02.642	PROTECT (E) STENCIL PAINTING DURING CONSTRUCTION
02.643	REMOVE (E) CHALKBOARD; PREPARE AREA FOR NEW WORK

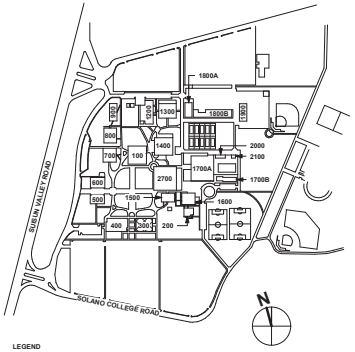
GRAPHIC KEY

WALL TYPES

- EXISTING WOOD FRAME WALL TO REMAIN
- EXISTING CONCRETE WALL TO REMAIN
- EXISTING WALL TO BE DEMOLISHED
- EXISTING CASEWORK TO BE DEMO
- EXISTING DOOR TO BE DEMO
- EXISTING DOOR TO BE REMAIN
- (E) SEMI-RECESSED FIRE EXTINGUISHER CABINET
- (E) WALLMOUNTED FIRE EXTINGUISHER

FIRE EXTINGUISHER AND FIRE EXTINGUISHER CABINETS

BUILDING KEY



LEGEND
BUILDINGS IN SCOPE

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aedis architects
www.aedisarchitects.com
387 S. 1st Street, Suite 300
San Jose, CA 95113
tel: (408)-300-5160
fax: (408)-300-5121

PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

STAMP

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SHEET
DEMOLITION FLOOR PLAN

DATE 02.21.2023
JOB # 2022012
SHEET # A2.01

2/16/2023 2:46:01 PM

PMP

CDPH Form

LEAD HAZARD EVALUATION REPORT

Section 1 — Date of Lead Hazard Evaluation March 31, 2023

Section 2 — Type of Lead Hazard Evaluation (Check one box only)

☐ Lead Inspection ☐ Risk assessment ☐ Clearance Inspection ☑ Other (specify) Lead Compliance with Lead in Construction

Section 3 — Structure Where Lead Hazard Evaluation Was Conducted

Address [number, street, apartment (if applicable)]	City	County	Zip Code
4000 Suisun Valley Road	Fairfield	Solano	94534

Construction date (year) of structure	Type of structure	Children living in structure?
Unknown	☐ Multi-unit building ☐ School or daycare ☐ Single family dwelling ☑ Other College	☐ Yes ☑ No ☐ Don't Know

Section 4 — Owner of Structure (if business/agency, list contact person)

Name	Telephone number
Solano Community College District	707-864-7257

Address [number, street, apartment (if applicable)]	City	State	Zip Code
4000 Suisun Valley Road	Fairfield	CA	94534

Section 5 — Results of Lead Hazard Evaluation (check all that apply)

☐ No lead-based paint detected ☑ Intact lead-based paint detected ☐ Deteriorated lead-based paint detected

☑ No lead hazards detected ☐ Lead-contaminated dust found ☐ Lead-contaminated soil found ☐ Other

Section 6 — Individual Conducting Lead Hazard Evaluation

Name	Telephone number
Shannon Johanson	916-628-5124

Address [number, street, apartment (if applicable)]	City	State	Zip Code
5325 Elkhorn Blvd., #360	Sacramento	CA	95842

CDPH certification number	Signature	Date
I/A PM 24367		4/12/23

Name and CDPH certification number of any other individuals conducting sampling or testing (if applicable)

Section 7 — Attachments

A. A foundation diagram or sketch of the structure indicating the specifc locations of each lead hazard or presence of lead-based paint;
B. Each testing method, device, and sampling procedure used;
C. All data collected, including quality control data, laboratory results, including laboratory name, address, and phone number.

First copy and attachments retained by inspector

Second copy and attachments retained by owner

Third copy only (no attachments) mailed or faxed to:

California Department of Public Health
Childhood Lead Poisoning Prevention Branch Reports
850 Marina Bay Parkway, Building P, Third Floor
Richmond, CA 94804-6403
Fax: (510) 620-5656

Scope of Work

PROJECT NUMBER: 23-047

SITE ID:	Solano Community College District – Building 300 4000 Suisun Valley Road Fairfield, California	
CONTACT PERSONS:	Owner Representative	PMP, Inc.
Name:	Noe Ramos Kitchell CEM c/o Solano CCD	Ms. Shannon Johanson Senior Project Manager
Phone:	(408) 334-7382	(916) 628-5124

SECTION I - BACKGROUND

Solano Community College will be performing a renovation project in Building 300 in the summer of 2023. The project will include building improvements and upgrades. As part of this renovation, asbestos, lead, and other hazardous materials will be impacted. The abatement of asbestos and lead containing materials will be performed by a licensed abatement/remediation contractor. The abatement contractor's onsite supervisor must always have a copy of these specifications onsite. It is required that the supervisor read these specifications prior to arriving onsite to assure they understand the requirements set forth to protect onsite staff, students, workers, and the environment.

These specifications provide a detailed list of conditions the Contractor must meet including project submittals, training, medical evaluations, licensing, insurance, work practices, communications, and other requirements. Attached to these specifications, are building survey reports for Solano College-Building 300. These reports help clarify the project scope and include tables with detailed descriptions of building materials, locations, estimated quantities, laboratory analyses, regulatory categorization (ACM, ACCM, RACM, Category 1 Non-Friable, Category 2 Non-Friable) and material location diagrams.

SECTION II - MATERIALS & LOCATIONS OF ABATEMENT WORK

Location of materials are generalized in this table. Contractors shall refer to PMP, Inc.'s survey report (attached to these specifications) and the project drawings provided by Aedis Architects for work to be completed. The measurements listed in the survey report are estimated. The abatement contractor shall be responsible to verify amounts to be abated/remediated.

2.1 ASBESTOS

Sample No.	Material Description	Location	Asbestos Content	NESHAP Category	Amount
1021-02A-E	Orange Peel Texture Sheetrock & Joint Compound	Various Areas Throughout Building 300	0.18% Chrysotile (Confirmed by Point Count)	N/A	13120 SF
1021-03A	Hatch Pattern Sheetrock	Various Classrooms and Under Orange Peel Texture	0.12% Chrysotile (Confirmed by Point Count)	N/A	----
1021-04A-C	Unfinished Sheetrock w/Joint Compound	Above FCP in Attic and Behind Fixed Shelving	0.14% Chrysotile (Confirmed by Point Count)	N/A	---
1021-05A-C	Plaster	Various Areas	<0.25% Chrysotile (Confirmed by Point Count)	N/A	--
1021-06C	Duct Seam Tape	Attic Space above FCP	3% Chrysotile	CAT II	1,000 LF
1021-10A	Black Mastic Associated with 9” VFT	Room 332 Prep Room and Classroom 301	5% Chrysotile	CAT II	2,000 SF
1021-14A	Transite Panels	Fume Hoods	15% Chrysotile	CAT II	270 SF
1021-16A	Gray Seam Sealant	Room 323	<1% Chrysotile	CAT II	Unknown
	Red Sealant on Red Clay Roofing	Roof	Known	CAT II	Unknown
07A-B	Black Mastic with Silver Paint	Roof Seams & Penetrations	3% Chrysotile	CAT II	150 LF

2.2 LEAD RESULTS

The following paints were found to be lead-containing by Flame AA analysis:

White Paint on Metal Door Fames
White Paint on Sheetrock Walls
White & Blue subway ceramic tile

The following paints may be disturbed without special regard to lead:
Lavender Paint on Sheetrock Walls
Light Blue Paint on Sheetrock Walls
Tan Paint on Sheetrock Walls
Tan paint on metal ductwork
Blue paint on sheetrock walls

SECTION III - DISPOSITION & STORAGE OF ITEMS IN AREA
The owner will remove most loose equipment and furniture in the abatement areas prior to start of the project. All items removed by the abatement contractor must be either turned over to the owner (as noted or indicated in the plans) or disposed of by the abatement contractor.

SECTION IV - OCCUPANCY
None in the immediate area.

SECTION V - PRE-CLEANING
The abatement contractor may have light pre-cleaning of the work area prior to set-up.

SECTION VI – ELECTRICITY AND WATER

In coordination with the building owner shut down and disconnect all electrical power, gas, sewage, water, phone lines, fire life safety lines and sprinkler systems to the work area, as necessary, so that there is no possibility of reactivation and electrical shock.

Provide all connections for temporary utilities in the work area needed throughout abatement. Temporary electrical power shall be according to Cal/OSHA, OSHA and the National Electrical Code for Wet Environments.

Contractor shall conform to the Owner's lockout requirements and always secure the work area. The Contractor, throughout the abatement phase, shall secure area entrances and exits. Unauthorized visitors are strictly prohibited. Contractor shall ensure that all doors, gates, windows, and potential entrances to the work areas and the designated waste location areas are secured and locked at the end of each workday. It is the Contractor's responsibility to prevent unauthorized entries to the work area.

Long hoses and electrical cords may be required.

SECTION VII – SECURITY AND SAFETY

GFCI's shall be used on all electrical equipment.

Contractor shall store all materials, equipment, and supplies for the project in areas designated by the Owner.

Approved fire extinguishers (Class ABC, multi-purpose, dry chemical type, rated: 4A; 60BC) shall be readily available to workers (maximum travel distance of 50 feet) inside and adjacent to work area(s). Personnel and emergency exits shall be clearly indicated. The emergency exit plan shall be approved by the Owner and/or Environmental Consultant prior to the setup of any work areas.

The Contractor shall be responsible for identifying all HVAC components (if applicable) that lead into or out of the work areas. All components shall be disconnected and sealed airtight for the duration of the abatement work. All openings shall be sealed with two (2) layers of 6-mil polyethylene secured with duct tape, as applicable.

For roof removal work the Contractor shall provide worker safety according to all OSHA regulations (Title 8), including use of tie-offs, harnesses, and lanyards. Particular attention shall be given to the placement and securing of accesses (ladders, etc.) to the roof and for fall protection for those working near the perimeter of the roof.

All ladders used for roof removal shall conform to Cal/OSHA requirements. The ladders shall extend at least three feet above the roof line and shall be tied off to the building to prevent them from sliding.

A copy of the contractor's safety meeting notes shall be given to the on-site PMP, Inc. project manager. Safety meetings shall be held at least once a week.

SECTION VIII – CONTAINMENT SETUP AND DECONTAMINATION

8.1 Asbestos Containment/Decontamination-Interior

Containment must have a three-stage decontamination chamber with an operational shower installed. Each stage of this decon must have z-flaps between itself and the adjoining stage(s) with a lip of at least 4" to prevent the transfer of waste from chamber to chamber.

Shower chambers and equipment washing chambers must be equipped with catch pans of sufficient size to capture and hold water which overflows from showering and washing activities. The “dirty” chamber shall have an extra layer of 6-mil polyethylene sheeting on the floor as a "drop cloth" and it shall be replaced at least once daily.

Showers and washing stations must also be equipped with a filtering system that includes a 0.5-micron filter. If filtering system is not available or is not functioning correctly, shower water must be bagged and disposed of as asbestos-containing waste.

Abatement and remediation work will be stopped if decon is not kept in acceptable condition.

Storage or consumption of food and/or beverages shall not be permitted inside the containment or within any of the decontamination chambers. Food or drink consumption within containment or decon chambers will result in the abatement worker(s) dismissal from the site for the duration of the project.

As necessary, Contractor shall seal operable windows and other penetrations in the work area with two layers of 6-mil polyethylene sealed with tape.

Contractor shall construct airtight negative pressure containment(s) for the removal of all interior materials. If friable material or RACM is generated during work activities, Contractor must segregate this material from any non-regulated ACM that are removed and must package and label them accordingly. Negative pressure shall be continuously maintained at a minimum differential of -0.03 column inches of water for the duration of abatement and cleaning activities and until clearance has been achieved. In addition to negative pressure, the work area shall be engineered to have a minimum of 4 air exchanges per hour with sufficient air mixing inside the containment to eliminate dead-air spaces. The contractor shall submit a worksheet identifying the air change calculations for each contained work area. The worksheet shall identify the containment area volume and the identification number and capacity of each portable AHU to be used. The Contractor shall use the following calculation to determine the capacity for each unit and number of units needed for each containment:

Contractor shall provide easily accessible viewing ports from the clean space into each abatement area. Viewing ports must be a minimum of 2’ x 2’, clear-see-through plastic with no scratches, tape or glue marks.

Pressure differential recorders with strip or circular charts are required to monitor the pressure differential each work area. The recorders must be calibrated prior to arriving on site and shall be periodically recalibrated throughout the project.

The work area(s) shall be placed under negative pressure as outlined in this specification and throughout the abatement work period. If a containment area is breached (failure of polyethylene seals, visible dust emission, etc.), the Contractor shall take immediate action to control the breach and clean the area to the satisfaction of the Environmental Consultant. Clearance for any contaminated areas will be determined by the Environmental Consultant and may include air sampling. The Contractor shall be responsible for all costs associated with the clean-up and testing (including costs associated with the Environmental Consultant) resulting from containment breaches.

Containment/Decontamination – Exterior Roof

The work shall be coordinated and scheduled when there are favorable weather conditions, such as, performing the abatement work when the forecast is for "clear skies" and no rain for three or more consecutive days. The Contractor shall remove only that amount of roofing

material which can be reroofed or covered and secured from the weather.

The Contractor shall seal all air intakes associated with the HVAC units which are on or near the roof under abatement, and at adjacent HVAC units, particularly downwind from roofing removal activity. In addition, all louvers, window mounted fan systems, attic openings, etc., shall be sealed as critical barriers. The Contractor is responsible for sealing all HVAC openings as critical barriers using one layer of 6 mil poly. These critical barriers shall be installed at the beginning of each shift and removed at the end of each shift prior to reuse by the Owner. If the building will not be reoccupied daily, the barriers may stay in place.

The perimeter of the roof where removal is to be conducted, shall be posted with barrier tape at a distance of at least 20 feet from the edge of the removal area. This barrier tape will provide a buffer zone and assist in the restriction of non-abatement personnel.

Poly sheeting shall be placed on the ground directly below the work area or on the adjacent roof surfaces and cover an area extending out at least 10 feet. The Contractor shall secure the poly to the ground using tape, weights, or other means to secure the poly from being picked up by wind or becoming a trip hazard. The Contractor shall secure the poly to the adjacent roof surfaces with tape, etc.

8.2 Lead Containment/Decontamination

1. For interior work site preparation, one layer of 6-mil poly sheeting must be placed on the entire floor of the work area. The poly sheeting must be secured to the floor using tape so there is no gap between the floor and the wall. If individual rooms are being worked in, seal all doorways with an airlock flap to prevent contamination of other areas of the building. Post lead warning signs at the building exterior near main entry and all secondary entryways. All ventilation systems are to be turned off and the supply and return registers sealed with poly sheeting. If furniture or other equipment are to remain in place, cover with a single layer of poly sheeting. All cleanup of the work area shall be performed using a HEPA vacuum and wet washing techniques.

2. For exterior paint stabilization use barrier tape at a 20-foot perimeter around the working surfaces to prevent other people from entering the work area. Post Lead Warning Signs at the 20-foot perimeter. Barriers may be less than 20 feet from work area when walls provide protection from entry by unauthorized personnel. Place one layer of 6-mil poly sheeting on the entire floor of the work area. The poly sheeting must be secured to the floor using tape so there is no gap between the floor and the wall.

3. A decontamination area shall be placed adjacent to the work area, but outside of the regulated area. Decontamination area will be constructed of one layer of 6-mil poly and shall include water, soap, and towels plus a tacky pad for footwear decontamination to allow workers to properly decontaminate.

SECTION IX - REGULATED AREA ENTRY POINTS AND WASTE CONTAINER PERIMETERS

1. Regulated Area Entry Points and Waste Container Perimeters shall be posted as follows:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE
REQUIRED IN THIS AREA

CAUTION
LEAD HAZARD
DO NOT ENTER WORK AREA
UNLESS AUTHORIZED

These postings are required to warn non-remediation personnel of the restricted access, and potential hazard which exists in the vicinity of the regulated areas and waste bin(s).

9.1 Waste Containers for Non-Hazardous Asbestos Containing Materials

1. Waste material containers, including the "burrito wrapped" material, shall have warning labels affixed.

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

SECTION X – CHALLENGE TESTING (DOP TESTING)

On-site DOP testing shall be required on all equipment using HEPA filters, and certificates shall be provided to the on-site PMP, Inc. project manager. All equipment shall arrive at the project site visually clean. Units arriving dirty or contaminated shall be removed from the project site until corrections can be made.

SECTION XI - NEGATIVE AIR

The contractor shall ensure that sufficient negative air units are used to create a minimum negative pressure of -0.03 inches until clearance air has been achieved. All negative air machines shall remain sealed when not functioning.

SECTION XII - NOTIFICATIONS

The Abatement Contractor must notify the Cal/OSHA at least twenty-four hours in advance of disturbing asbestos on this project.

The Abatement Contractor shall notify the Bay Area Air Quality Management District (BAAQMD) at least 10-working days in advance of disturbing Regulated Asbestos-containing Material (RACM) on this project. The Abatement Contractor is responsible for the submittal of this notice and all costs associated with this submittal. The Abatement Contractor shall ensure that the submittal information is on time and accurate and stays accurate. All costs and penalties for providing false, incorrect, or untimely information shall be the sole responsibility of the Abatement Contractor.

The Abatement Contractor must coordinate with the Owner and the Project Monitor at least one week before starting work. Exact work start times must be communicated to the Project Monitor at least twenty-four hours prior to the start of work or the work will not be allowed to proceed. The Project Monitor and Owner have final authority in determining whether to allow the Abatement Contractor to proceed with the work.

SECTION XIII - TRAINING REQUIREMENTS

13.1 Asbestos

All asbestos work will need to be conducted by US EPA AHERA trained Supervisors and Workers.

13.2 Lead

The lead-based paints and/or coatings should only be handled by CDPH trained workers using lead-safe work practices.

The paints and/or coatings listed as lead containing can be impacted by workers with a minimum 8-hours of lead training specific to the task at hand, using lead-safe work practices.

Workers are required to have a current Blood Lead Level (BLL) test results performed within the previous twelve months.

All workers must have valid medical clearance and fit tests.

Copies of all worker documents must be presented to onsite representative prior to the start of work.

SECTION XIV - WORKER PROTECTION

Worker protection shall be in accordance with current Cal/OSHA regulations; however, at a minimum, all workers shall wear half-face negative pressure respirators with P100 (HEPA) cartridges.

Tyvek suits or equivalent will be worn for all work impacting asbestos, lead, and other hazardous materials.

Workers shall always wear safety glasses and gloves. If gloves or glasses are to be re-used, they shall be HEPA-vacuumed clean.

During glass pipe removal the crew should wear nitrile gloves to protect from metals and other chemicals.

Street clothes may be worn below tyvek suits for non-friable removal, but clothing will need to be HEPA-vacuumed clean if suits become ripped or torn during work.

SECTION XV - ABATEMENT METHOD

Contractor shall refer to the attached PMP, Inc. General Requirements for setup and abatement requirements for specific materials.

In all areas where drywall is removed - contractor is to cut a straight and level line where horizontal edges of remaining drywall are left. All vertical edges of remaining drywall must be cut in a straight line and centered on a stud to facilitate patch back attachment of new drywall.

If the abatement contractor decides to use mechanical methods of removal for either the vinyl asbestos tiles or mastic the materials will need to be disposed of as RACM.

During removal activities, the Contractor shall protect against contamination of soil, water, plant life, and adjacent building areas, and shall ensure that there is no airborne release of hazardous materials and dusts. The Owner may collect air samples in the building and in adjacent areas to evaluate the Contractor's performance. Evidence of airborne levels of contaminants above background will require the implementation of additional controls at no increase to contract price.

The Contractor shall continuously apply wetting agent throughout the removal process. The wetting agent shall be applied with a low-pressure fine spray to minimize fiber releases. The materials shall be thoroughly saturated so that there is no detectable fiber release. All ACM shall be immediately packaged, sufficiently wet to prevent the release of fibers, in leak-tight containers following removal.

Minimize removal activities of ACMs that generate airborne particulate. To the extent feasible, use manual methods to remove ACMs in sections or substantially intact, wetting along the scoring line continually and misting the air with a liquid sprayer to knock down suspended particulate.

The contractor should try and remove all glass waste lines intact. All liquid should be captured prior to removal.

SECTION XVI - PERSONAL AIR SAMPLING

Contractor shall collect personal air samples on workers performing various removal activities during this project. This sampling shall be in accordance with Cal/OSHA regulations found in Title 8 Section 1532.1 and 1529. Contractor is responsible for providing personal air sample results for this project within 72 hours of sample collection.

SECTION XVII - CLEARANCE AIR SAMPLES

One set of AHERA clearance air samples shall be collected from each containment and analyzed in accordance with AHERA protocols prior to work by other contractors.

SECTION XVIII - DUMPSTERS

The construction dumpsters will be placed inside the construction fencing. Exact location will be determined or discussed at pre-construction meeting.

Dumpsters will need to be placed on plywood to help prevent damage to concrete.

SECTION XIX - ASBESTOS DISPOSAL

All waste bags shall have visibly damp materials but shall not contain loose water. In the event

loose water is discovered within a waste bag, it shall be absorbed with kitty litter, saw dust or similar product prior to the bag being sealed. If opening and re-sealing of bag is required, all work shall be performed inside the negative pressure containment.

All waste shall be double bagged in 6-mil polyethylene bags and sealed in a “gooseneck” fashion.

All sheetrock and plaster have been point counted and results were <1% asbestos. This waste can be disposed of as non-hazardous asbestos waste.

All flooring materials, black mastic, duct seam tape, gray sealant, and transite are classified as a CAT I or CAT II non friable materials. These materials will be disposed of as non-friable asbestos containing waste. If transite panels are broken during removal, they will need to be disposed of as hazardous asbestos waste.

Roof debris will be disposed of as non-friable asbestos containing waste. Materials must be bagged, or burrito wrapped with appropriate labeling for disposal.

Unless the roofing material is carried or passed to the ground by hand, it shall be lowered to the ground via covered, dust-tight chute, crane, or hoist. All waste shall be sufficiently wetted with amended water to prevent fiber release. If fiber release cannot be prevented, then the chute and bin must be within a negative pressure enclosure. **In no case shall roofing materials be dropped or thrown into trucks, bins, or waste bins from the roof** without the protection of a dust tight chute or other means acceptable to the PMP, Inc. Project Manager.

Contractor shall provide stick-on labels for bags that meet the Cal/OSHA, NESHAP, and DTSC requirements for hazardous and non-hazardous waste container labeling.

All asbestos waste, hazardous or not, shall be manifested. Non-hazardous waste shall be manifested on a non-hazardous waste manifest.

Ensure that polyethylene bags are evacuated of excess air using a HEPA vacuum and sealed airtight. The exterior of all waste bags and/or containers shall be damp wipe cleaned and HEPA vacuumed prior to removing them from the equipment decontamination unit.

Ensure all disposal containers are properly labeled according to 8 CCR 1529, 5194 (HAZCOM), 49 CFR 171-179 (USDOT), 40 CFR 61 Subpart M (NESHAP), and any local regulations and state regulations as required by this specification.

SECTION XX – LEAD, HEAVY METALS, ETC. DISPOSAL

The contractor is responsible for characterizing all waste streams prior to disposal. PMP, Inc. will need to receive results 24 hours prior to the waste leaving the site.

The contractor shall notify the district at least 24 hours in advance of when the manifest must be signed. Under no circumstances will the contractor sign the manifest on behalf of the School District.

Glass pipe waste lines shall have all the water captured and absorbent added to create a solid. This waste will be disposed of as non-hazardous waste.

SECTION XXI – BULK PCB, PCB BALLAST AND MERCURY LIGHT TUBES

Polychlorinated biphenyl (PCB's) was found in the gray window frame sealant at 160,000,000 µg/kg and in the fiberglass TSI straights at 1100 µg/kg. PCB's were added as an unauthorized use into bulk materials such as sealants/caulking, paints/coatings, fiberglass, etc. between 1950 and 1979.

PMP, Inc. recommends the window sealants and fiberglass TSI straight runs be physically removed according to applicable state and federal regulations.

The PCB containing sealants shall be removed using hand tools such as utility knife, putty knife, scraper, ripping chisel, brush, hammer and HEPA vacuum.

Work practices shall comply with suggested approaches for the handling of PCBs as described on the EPA's website at https://www.epa.gov/pcbs/polychlorinated-biphenyls-pcbs-building-materials#Information-Contractors and summarized in the attached *Polychlorinated Biphenyls (PCBs) Summary of Tools and Methods for Caulk Removal.*

Waste characterization samples have been collected to determine whether the PCB concentrations are greater than 50 milligrams per kilogram (ug/kg) or parts per million (ppm). One suspect material as reported as non-detect for PCBs. One material was reported to contain PCBs at concentrations below 50ppm and two materials were reported to contain PCBs at levels greater than 50ppm.

Materials that contained PCBs at levels below 50ppm at the time of installation are defined as excluded product and are not subject to the requirements of 40CFR761. These materials still must be handled and disposed of properly in a facility permitted to receive PCB contaminated wastes above 1 ppm.

Any material containing more than 50 ppm of PCB's outside of electrical transformers are considered an unauthorized use and must be removed, sealed in leak-tight containers and disposed of as a hazardous waste. These materials are commonly referred to as bulk product wastes (BPW). Substrates in contact with these BPWs may also need to be cleaned or disposed of as PCB-containing remediation wastes.

The US EPA has prepared a memorandum titled *PCB Bulk Product Waste Reinterpretation* dated October 24, 2012. This letter allows a building owner that has bulk product wastes to dispose of the impacted substrate to be managed and disposed of as bulk product waste.

All disposal of PCB's should meet the EPA requirement under 40 CFR part 761. All PCB waste must have a waste profile/characterization completed prior to disposal. If sampling shows PCB concentrations of >50 PPM all waste will need to be disposed of at a hazardous waste landfill permitted by the EPA under section 3004 of RCRA or by the state authorized under section 3006 of RCRA, or a PCB disposal facility approved under this part.

The contractor must dismantle every light fixture to ensure that it does not contain a PCB ballast.

All PCB ballast and mercury light tubes must be recycled or disposed of as a universal waste. See the Other Hazardous Materials Requirements for additional information on handling and disposal.

SECTION XXII - FREON

Any freon that will be impacted by the upcoming renovation must be evacuated/captured and recycled by a certified refrigerant recycler per 40 CFR 273.13 (d) (2).

SECTION XXIII - RADIOACTIVE SOURCES

Radioactive tritium containing exit signs, smoke alarms, etc. shall be handled and disposed of properly according to local, state, and federal regulations.

XXIV - PRE-SITE VISITS AND MEETINGS

It's recommended that contractors bidding on this project attend the pre-bid site visit to measure areas/materials, as contractor is responsible for their own measurements, and determine if factors not addressed in these Specifications may affect their work or price estimates.

SECTION XXV - SILICA

Contractors must handle all cementitious materials in accordance with Cal/OSHA regulation 8 CCR 1530.1, which requires workers to either wear suits and respirators while handling such materials or to collect personal air samples on workers creating a negative exposure assessment (NEA) proving the protective suits and respirators are not necessary.

SECTION XXVI - SUBMITTALS

Section 2.31 includes all required submittals including pre-bid submittals, pre-work submittals, submittals provided during the project, and post submittals required at the end of the project before the project will be deemed fully complete and final payment will be made.
The Abatement Contractor must review the submittal list prior to bidding on this project. There may be more, or different submittals required for this project than expected by the Contractor. The Contractor will not be allowed to begin work until the submittal package has been approved by the Project Monitor. The Contractor will be held responsible for all delays resulting from the failure to provide the required submittals in the time frame stated in this specification.

XXVII - LIQUIDATED DAMAGES
Per District's requirements.

Attachments: General Requirements for Asbestos
General Requirements for Lead
Other Hazardous Materials

Written by: Shannon Johanson
Date: April 12, 2023

GENERAL REQUIREMENTS FOR ASBESTOS

SECTION 1. DEFINITIONS

Abatement - Procedures beyond a special operations and maintenance program to control fiber release from asbestos-containing materials. Includes removal, encapsulation, enclosure, repair.

ACGIH - American Conference of Governmental Industrial Hygienists

AHERA - Asbestos Hazard Emergency Response Act (40 CFR 763)

AIHA - American Industrial Hygiene Association

Air Filtration Device - A portable exhaust system equipped with HEPA filtration and capable of maintaining a constant low velocity air flow into contaminated areas from adjacent uncontaminated areas. At a minimum, the air intake for the air filtration device, must have a pre-filter on it which can be changed within the containment area.

Airlock - A system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area. The airlock shall consist of a minimum of two curtained Z-flap doorways separated by a distance of at least three (3) feet such that one passes through one doorway into the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, thereby preventing flow-through contamination.

Air Monitoring - The process of measuring the fiber content of a known volume of air collected during a specific period of time. The procedure normally utilized for asbestos follows the NIOSH Standard Analytical Method for Asbestos in Air Method 7400. For clearance air monitoring, transmission electron microscopy methods may be utilized for detection of smaller fibers and specific fiber identification.

Air Sampling Professional - The professional contracted or employed by the Owner to supervise and/or conduct air monitoring and analysis schemes. The air sampling professional must be a Cal/OSHA Certified Asbestos Consultant or Certified Site Surveillance Technician. This individual shall not be affiliated in any way other with the contractor performing the abatement work.

Ambient Air - The air outside buildings and structures or the air as it normally exists in a space prior to abatement.

Amended Water - Water to which a surfactant has been added.

ANSI - American National Standards Institute

Approval/Acceptance - A written means of approving/accepting a product, containment set-up, work practice. Approval/Acceptance by PMP, Inc. Project Manager may be given verbally, if followed in written format. Failure of PMP, Inc. Project Manager to address an issue either verbally or in writing does not imply Approval/Acceptance.

Asbestos - Means the asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite grunerite (amosite), anthophyllite, actinolite, and tremolite.

Asbestos-Containing Construction Material (ACCM) - Cal/OSHA term used to describe construction

materials that contain asbestos in amounts greater than one-tenth of one percent (0.1%) either alone or mixed with fibrous or non-fibrous materials.

Asbestos-Containing Material (ACM) - Term used by Cal/OSHA, and U.S. EPA to include any material containing more than one percent (1%) asbestos. Except for waste issues, for the purposes of this contract the terms ACM and ACCM shall be interchangeable.

Asbestos-Containing Hazardous Waste - Materials defined by the State of California to be packaged, labeled, transported, and disposed of as an asbestos hazardous waste. This includes all friable asbestos-containing material over one percent (1%) asbestos. This also includes all asbestos-containing material containing less than one-percent asbestos for which one or more bulk samples have not been point counted and found to contain less than one percent (1%) asbestos.

Asbestos-Containing Waste Material - Asbestos-containing material or asbestos-contaminated objects requiring disposal.

Asbestos Project Manager - An individual who is qualified by virtue of experience and education, designated as the Owner's representative and responsible for overseeing the asbestos abatement portion of the project. This person is generally the same as the PMP, Inc. Project Manager.

ASTM - American Society for Testing and Materials

Authorized Visitor - The Owner (and any designated representative) and any representative of a regulatory or other agency having jurisdiction over the project.

Bidder - A duly licensed and accredited asbestos contractor who has submitted a bid. If bid walk is mandatory, bidder must attend the walk-in order for bid to be considered responsive.

Cal/OSHA - California Division of Occupational Safety and Health. Acronym of DOSH is interchangeable with this term.

Certified Industrial Hygienist (CIH) - An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.

Cleaning Barriers - Cleaning barriers are used in addition to critical barriers and are primarily to aid in the decontamination of the area after the completion of asbestos removal work. Cleaning barriers are normally comprised of plastic sheeting placed over non-asbestos-containing surfaces (e.g. walls, floors, ceilings, casework, etc.), and asbestos-containing surfaces not scheduled for removal, in the regulated area.

Clean Room - An uncontaminated area or room which is a part of the worker decontamination enclosure system with provisions for storage of workers' street clothes and clean protective equipment. Also, the term includes uncontaminated area or room of a Waste Transfer Airlock.

Competent Person - The Contractor's employee who meets the requirements of and is responsible for the activities of the Competent Person as described in Title 8 CCR 1529. The includes but is not limited to an individual who has current AHERA Contractor/Supervisor accreditation and has the responsibility and authority to ensure that the Contractor's employees comply with the contract documents and all relevant Cal/OSHA regulations.

Containment - The temporary isolation of the work area from the rest of the building to prevent escape of asbestos fibers.

Contractor - The Contractor is the person or entity identified as such in the Contract Documents; references to "Contractor" include the Contractor's authorized representative.

Contractor/Supervisor - A person who successfully completed an initial U.S. EPA and/or state-approved five-day AHERA-accreditation course and who has maintained that training through approved annual refresher training, and possesses current and valid AHERA-accreditation documentation as a AHERA-accredited Contractor/Supervisor

Cal/OSHA Class I, II, III, or IV Work- Work classes described in 8 CCR 1529 that describe different levels of asbestos work.

Critical Barrier - Critical Barriers used to restrict water and air flow. Critical Barriers are the barriers placed over openings in the walls and ceilings of a work area to ensure that airborne fibers cannot escape the work area via these openings. The Contractor will construct impermeable barriers at all exits or openings, including doorways, duct chases, mechanical shafts, elevator shafts, floor openings, drains, and the like, so that all possible exit or entrance routes are effectively barricaded and sealed. Unless otherwise specified in the Contract documents, critical barriers shall be constructed of at least one layer of 6-mil thick poly.

Critical Barrier Negative Pressure Test - Required test for negative pressure with only critical barriers and air filtration units installed. This test must be conducted prior to the installation of cleaning barriers but may be conducted with or without the decontamination unit in place.

Curtained Doorway, Z-Flapped - A device to allow ingress or egress from one room to another while permitting minimal air movement between spaces (such as the various rooms of the decontamination chamber). Each Curtained Doorway will consist of three sheets of poly. The first barrier will be a sheet of poly covering the entire passage and taped to the ceiling, walls, and floor. This sheet will be slit vertically in order for the workers to pass through it. Another sheet of poly will cover the first sheet but be taped only to the ceiling (or top of the first barrier) and down one wall. The third sheet of poly will be placed on the opposite side of the slit poly from the second sheet. The third sheet of poly will be attached in a similar manner as the second sheet except the wall attachment will be to the opposite wall. Each barrier must be weighted at the bottom in order to ensure that it will lay flat against the slit sheet opening should the negative pressure system fail. Please see diagram:

Other designs are permissible, if approved by the PMP, Inc. onsite project manager.

Decontamination Enclosure System - (Also known as Decon or Waste Transfer Decon) A series of connected rooms designed for the decontamination of workers and equipment that is separated from the work area and from each other by z-flapped curtained doorways. This unit shall be constructed with at least two layers of six-mil poly for the floors, walls, and ceiling. The floor of the dirty room shall consist of two layers of six-mil poly plus a third layer of poly, four-mil or thicker, to be used as a removable drop layer. Drop layer is to be removed as needed, but not less than daily. All decontamination enclosure systems used for worker entry and exit shall be equipped with a shower. At no time shall z-flaps of Decontaminations Enclosure System chambers be taped, held or otherwise blocked open.

DOP - Dioctyl phthalate particles which are normally used as an agent for testing the efficiency of HEPA filters.

Demolition - The wrecking or taking out of any load-supporting structural member, casework, items or surfaces of a facility together with any related handling operations and disposal.

Dust or Debris - Material visible to the PMP, Inc. Project Manager. Dust and debris may be contaminated with asbestos, and may affect the asbestos work practices, containment or clearance air samples required on this project, whether contaminated with asbestos or not.

Encapsulant, Bridging/Penetrating - A liquid material which can be applied to asbestos-containing material to control the possible release of asbestos fibers from a material either by creating a membrane over the surface (bridging encapsulant) or by penetrating the material and binding its components together (penetrating encapsulant).

Encapsulant, Lock-down - A liquid product designed to mist the air within a contained area after the containment has passed visual clearance by the PMP, Inc. Project Manager. Lock-down encapsulant is designed to bind asbestos fibers together and to create a tacky surface causing non-visible asbestos fibers, settling out of the air, to adhere to containment poly.

U.S. EPA - U.S. Environmental Protection Agency

Equipment Decontamination Enclosure System - That portion of a decontamination enclosure system designed for controlled transfer of materials and equipment into or out of the work area, consisting of a clean room, washroom and holding area.

Equipment Room - A contaminated area or room which is part of the worker/equipment decontamination enclosure system with provisions for storage of contaminated clothing and equipment.

Exterior of Containment HEPA Filtered Pressure Differential Unit - An air-purifying unit positioned outside, rather than inside the regulated work area. The face, or filter portion of the unit is integrated within the work area, and the remainder of the unit (housing, wheels, rivets, control panel, etc.) is located outside of the work area. This allows filters on the air intake to be changed from within the regulated area but access to the machine itself is available to those outside the area. Pressure differential units which pass DOP testing across the HEPA filter, but fail at rivets, control panels, wheels, etc. may be used in this fashion as long as the failure point of the unit can remain on the exterior of containment while the face of the unit and filters are inside containment.

Facility - Any institutional, commercial, or industrial structure, installation, or building.

Facility Component - Any item (pipe, duct, boiler, tank, reactor, turbine, furnace, etc.) at or in a facility, any portion of a facility or any structural member in or at a facility.

Federal OSHA or OSHA - Federal Occupational Safety and Health Administration.

Fixed object - A piece of equipment or furniture in the work area which cannot be removed, or will not be removed by Owner’s decision, from the work area.

Friable asbestos - Asbestos-containing material which, when dry, can be crumbled to dust by hand pressure.

Glovebag Technique - A method with limited applications for removing small amounts of friable asbestos-containing materials from ducts, short piping runs, valves, joints, elbows, and other non-

planar surfaces. The glovebag assembly is a manufactured or fabricated device consisting of a glovebag (typically constructed of 6 mil transparent polyethylene or polyvinylchloride plastic), two inward projecting long sleeves, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. The glovebag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process. Glovebags must meet the specification requirements for glovebags as listed in 8 CCR 1529. All workers who are permitted to use the glovebag technique must be highly trained, experienced, and skilled in this method. All techniques and procedures employed by the contractor shall be approved by the PMP, Inc. Project Manager.

HVAC - Heating, ventilation, and air conditioning system.

HEPA Filter - A high efficiency particulate air filter capable of removing particles 0.3 microns in diameter from an air stream with 99.97% efficiency.

HEPA Vacuum - A vacuum system equipped with HEPA filtration.

PMP Project Manager - An individual, employed by (or subcontracted to) PMP Environmental Consulting, Inc., who is qualified by virtue of experience and education, designated as the Owner's representative and responsible for overseeing the asbestos abatement, and/or other activities.

Holding Area - A clean space where clean supplies and equipment are stored before being placed into containment. Also, a contaminated space, adjacent to a shower or equipment washing chamber, where dirty equipment or packaged waste is stored prior to removal from containment.

Lock-down - To mist the air and to wet surfaces with an agent designed to bind asbestos fibers together and to create a tacky surface causing non-visible asbestos fibers, settling out of the air, to adhere to containment poly.

Magnehelic Gauge - Instrument for measuring the static air-pressure differential across a barrier.

Manometer - See "Magnehelic gauge". This project requires at least one properly calibrated and fully functioning recording manometer.

Mil - An abbreviation for millimeter. Generally used when referring to the thickness of plastic (poly) sheeting used to contain the regulated area.

Mini-Enclosures - Mini-enclosures may be used where glovebag setups are not feasible. The use of them must be approved by the PMP, Inc. Project Manager. Mini-enclosures shall be constructed of six-mil polyethylene (attached with tape and/or glue to walls and floors) and shall be small enough for a maximum of two workers who can enter the enclosure one time, complete the abatement exercise, pass out the containerized debris and exit. The workers shall have available a change room contiguous to the work area where they can remove their coveralls prior to leaving the area.

Monitoring - May include:
a) Visual inspection for the presence of visible emissions; or
b) Air monitoring performed in accordance with accepted methods.
c) Collecting core samples of encapsulated or bridged materials.
d) Collecting other bulk samples during and following abatement.
e) Sampling substrata following abatement.

Inspection of abatement contractor's, and contractor's employees, work practices for compliance to these and other specifications and applicable regulations.

NVLAP - National Voluntary Laboratory Accreditation Program.

NESHAP - The National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61, Nov. 20, 1990)

NIOSH - The National Institute for Occupational Safety and Health

Owner - The Owner includes the individual or entity that owns the property and, unless otherwise stated, the Owner's authorized representatives, including the PMP, Inc. Project Manager, the Owner's Board of Trustees and the Owner's officers, employees, agents and representatives.

PCM - Phase contrast microscopy according to NIOSH Method 7400A.

Poly - Polyethylene sheeting.

Pre-start Meeting - Meeting held before the beginning of the project in which final details of the project are discussed and Contractor provides Project Monitor with pre-job submittal packet.

Regulated Area - An area established by a contractor to demarcate areas where the contractor's employees may conduct Class 1, 2, or 3 work as described in 8 CCR 1529 or airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the permissible exposure limit. Additionally, "regulated area" means any measure used to restrict access to an area where personnel impacting asbestos-containing materials are required to wear respiratory protection and/or protective clothing by the project specifications, or applicable regulations, regardless of airborne asbestos concentration levels.

Regulations - shall include all relevant federal, state, and local regulations including but not limited to:

a. U.S. Environmental Protection Agency Regulations for Asbestos (Title 40, Code of Federal Regulations, Part 61, Subparts A & B)
b. Title 8, Chapter 4, Subchapters 1 through 21, California Administrative Code, General Industry Safety orders, Section 5208 "Asbestos" or the applicable sections of the Federal Asbestos Regulations. Cal/OSHA Construction Safety Orders, Section 1529.
c. "Asbestos Hazard Emergency Response Act", U. S. Environmental Protection Agency, 40 CFR, Part 763. Final Rule and Notice.
d. Applicable local county Air Pollution Control District and Air Quality Management District or other local NESHAPs Enforcement.

Removal - The stripping of any asbestos-containing materials from surfaces, substrates, or components of a facility. As per various regulations, the ground is considered a substrate.

Renovation - Altering in any way one or more facility components.

Scope of Work - Job specific information and specifications used in combination with these Asbestos General Requirements. If conflicts exist between the Scope of Work and these specifications, the stricter requirement will be enforced unless the conflict is specifically addressed in writing in the Scope of Work for this project.

Shower Room - A room between the clean room and the equipment room in the decontamination enclosure with hot and cold or warm running water controllable at the tap and suitably arranged for complete showering during decontamination. The shower room must be equipped with an overflow pan to contain water splashed, leaked, or spilled out of the shower unit.

Staging Area - The secured area outside of containment where clean equipment and supplies are stored. Waste must not be stored within the staging area unless placed within an additional lockable container or area approved by the PMP, Inc. Project Manager.

Strip - To take off friable asbestos materials from any part of a facility.

Structural Member - Any load-supporting member of a facility, such as beams and load-supporting walls or any non-load-supporting member, such as ceilings and non-load supporting walls.

Submittals - Pre, in-progress and post job documents submitted by contractor to Owner's representative as indicated in General Requirements and Bidding Requirements.

Surfactant - A chemical wetting agent added to water to improve penetration.

TEM - Transmission Electron Microscopy according to AHERA specifications for Level II analysis on all AHERA projects. Non-AHERA projects may employ other levels of TEM analysis.

Visible Emissions - Any emissions, whether containing particulate asbestos material or not, that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

Waste Load-out/Transfer System - A decontamination system utilized for transferring containerized waste from inside to outside of the work area. A series of three connected rooms used for the load-out of asbestos-containing materials that have been properly containerized. The waste loadout chamber system shall normally consist of three connected chambers adjacent to the work area. Each chamber shall be constructed with at least two layers of six-mil thick poly for the floors, walls, and ceiling. The chamber located closest to the work area is known as the dirty chamber, and in addition to the two layers of six-mil thick poly on the floor, shall also have a third layer of poly, four-mil or thicker, to be used as a removable drop layer. The drop layer is to be removed as needed but at least daily. The chamber located closest to the outside the work area is known as the clean chamber. See Section 15 for proper use of waste Load-out/Transfer System.

Wet cleaning - The process of eliminating asbestos contamination and visible dust and debris from building surfaces and objects by using cloths, mops, or other utensils which have been dampened with water and afterwards thoroughly decontaminating them or disposing of them as asbestos contaminated waste.

Work area - Designated rooms, spaces, or areas of the project in which asbestos abatement actions are to be undertaken or which may become contaminated as a result of such abatement actions. A contained work area or temporary enclosure is a work area that is isolated from the rest of the facility using critical barriers and cleaning barriers, a decontamination system, and additional means of signs and barriers to reduce access by unauthorized persons. The work area includes all decontamination chambers, waste transfer system and the abatement area. A non-contained work area is an isolated or controlled-access work area which has not had poly installed nor been equipped with a

decontamination enclosure system.

Worker - A person who successfully completed an initial U.S. EPA and/or state-approved four-day AHERA-accreditation course and who has maintained that training through approved annual refresher training, and possesses current and valid AHERA-accreditation documentation as a AHERA-accredited asbestos worker.

SECTION 2. NOTIFICATIONS, SUBMISSIONS, POSTINGS

2.1 Site Investigations

By submitting a bid to the primary contractor, and being listed by the primary contractor as the sub-contractor for asbestos related work, the asbestos abatement contractor acknowledges that they have investigated and satisfied themselves as to:

A) the conditions affecting the work, including but not limited to, physical conditions of the site which may bear upon site access, handling, and storage of tools and materials, access to water, electric, or other utilities, or otherwise affect performance of required activities

B) the character and quality of all surface and subsurface materials or obstacles to be encountered, in so far as, this information is reasonably ascertainable from an inspection of the site, including exploratory work done by the owner or a designated consultant, as well as information presented in drawings and specifications included with this contract. Any failure by the asbestos abatement contractor to acquaint themselves with available information will not relieve them from the responsibility for estimating properly the difficulty or cost of successfully performing the work. The Owner is not responsible for any conclusions or interpretations made by the asbestos abatement contractor based on the information made available by the Owner.

2.2 Notification

Prior to commencement of work the Contractor shall send notices of the work to be completed to the agencies listed below with a copy of each to be provided to the Owner or its representative at the pre-start meeting.

For compliance with 40 CFR part 61.146 of Subpart M, send notice at least ten (10) working days prior to start of work to all of the following appropriate agencies:

EPA, Region 9 Asbestos Program Enforcement 75 Hawthorne Street San Francisco, CA 94105	Chief Compliance Division California Air Resources Board P.O. Box 2815 Sacramento, CA 95812 (For non-EPA delegated counties)
Local Air Pollution Control District (APCD) or Local Air Quality Management District (AQMD)	

For compliance with 8 CCR 1529 and 8 CCR 5203, send written notice at least one day prior to start of work to:

State of California
Department of Occupational Safety and Health
District Office

These notices shall include, at a minimum, the name and address of the contractor, the name and address of the worksite, the type of work to be done including the percent asbestos content of the material, the methods used to prevent migration of the fibers, personal protective measures, the number of his workers involved, any union representation of the workers and the methods of disposal

including the names and EPA numbers of both the certified hauler and the waste disposal site. The notices shall also include start and finish dates. Changes in start and completion dates shall be reported immediately to the proper agency. Use forms provided by agency whenever possible.

2.31a Prestart Submittals - Contractor

A. Contractor shall provide a copy of the notification for NESHAP compliance along with a receipt of fees paid.

B. Contractor shall provide a copy of the notification for Cal/OSHA compliance along with the fax confirmation receipt.

C. Contractor Notification to Local Hospital, Police, and Fire Department

D. Contractor shall provide a copy of their active CSLB License with Asbestos Certification.

E. Contractor shall provide a copy of their active Cal/OSHA (DOSH) registration.

F. The asbestos abatement contractor shall submit a statement, signed by an officer of the company, containing the following information:

1. A record of any citations issued by Federal, State, or Local regulatory agencies within the last 3 years, relating to asbestos abatement activity. Include projects, dates, and resolutions.

2. A list of penalties incurred through non-compliance with asbestos abatement project specifications, including liquidated damages, overruns in scheduled time limitations, and resolutions.

3. Situations in which an asbestos-related contract has been terminated including projects, dates, and reasons for terminations.

G. Submit copies of insurance certificates which meet requirements as outlined below:

Contractor shall purchase and maintain insurance that will protect them from claims that may arise out of or result from the activities under this Contract, whether those activities are performed by the asbestos abatement contractor, by any subcontractor, or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

Contractor shall submit proof of coverage for the asbestos abatement contractor and subcontractors under the Worker's Compensation insurance system of the State of California or other similar benefit acts.

Contractor shall submit a certificate of general liability insurance protecting against liability for bodily injury and property damage arising from the asbestos abatement contractor’s activities under this contract.

Such certificate of insurance must contain the following provisions:

(a) The limit of liability shall not be less than $1,000,000.00 per occurrence for bodily injury and property damage liability combined.

(b) The Owner, Owner's Agents, and PMP Environmental Consulting, Inc. (PMP, Inc.) must be named as additional insured, but only in respect to liability arising or resulting from activities under this contract.

(c) In the event of cancellation of the insurance policy, the Owner and PMP, Inc. shall be given thirty days advance written notice.

(d) The insurance certificate must state that the insurance includes liability coverage for asbestos abatement work.

H. Submit proof satisfactory to the Owner that required permits have been acquired applicable to the project being performed and specific to the project site and location. If no city, county, or other permits for parking, waste bin location, or variances for scheduled work hours are required, this should be stated in writing and submitted to the Owner.

I. Submit Subcontractors information or statement that subcontractors will not be required or used during this project. This statement should also include that if it becomes necessary to use a subcontractor during this project that the subcontractor will not be allowed to perform work until all required documentation has been submitted for review by the Owner or PMP, Inc., and the Contractor receives written approval for use of the subcontractor on this project.

J. Submit a complete list of all rented equipment, or equipment expected to be rented from an outside contractor for use in "Regulated Areas," "Work Areas," or "Containments," where the equipment may be exposed to elevated levels of airborne asbestos. If no equipment is to be rented a statement should be submitted stating, no rental equipment will be used on the project. The statement should also include that, if it becomes necessary to use rented equipment, written statements from each rental company will be provided to the Owner prior to its use, indicating the rental company's acknowledgment that the equipment is provided for and may be used in areas where airborne levels of asbestos may be present.

K. Submit emergency and non-emergency telephone numbers for the appropriate Police, Hospital, and Fire Departments. This list of numbers shall also include the name, pager or cell phone numbers of the onsite supervisor and his immediate company supervisor.

L. Submit detailed written directions from the project site to the medical facility to be used in case of an emergency. Also include a map which sufficiently shows the route to be taken from the site to the designated medical facility.

M. Submit written emergency procedures pertinent to the work to be performed and which can be implemented by site personnel if the need arises.

N. Submit detailed information on preparation of work area, personal protective equipment, employee experience, training and assigned responsibilities during the project. Also list decontamination procedures for personnel, work area and equipment, abatement methods and procedures, required air monitoring program, procedures for handling and disposing of waste materials and procedures for final decontamination and cleanup.

O. Submit a detailed work schedule. The schedule shall have, as a minimum, the work area and the day/month for beginning and terminating work in each work area. During progress of work, it shall be the Contractor's responsibility to keep the schedule current and up to date.

P. Submit to the Owner shop drawings, on projects where requested in the Scope of Work, for

layout and construction of decontamination enclosure systems and barriers for isolation of the work area as detailed in this specification and required by applicable regulations.

Q. Submit Safety Data Sheets (SDS) for all applicable materials, supplies, etc. These documents must be legible and completely reveal information required to be communicated to the Contractor's employees, visitors, and Owner Representatives.

R. Submit manufacturers' certifications that high efficiency particulate air (HEPA) vacuums, pressure differential units and other local exhaust ventilation equipment conform to ANSI Z9.2-79.

Submit manufacturer's documentation pertaining to the capability of wastewater filters to filter particles of 1.0 micron in size.

S. Submit name of laboratory/person to be used for Phase Contrast Microscopy (PCM) analysis and copy of current NVLAP Certificate of Accreditation (if applicable), and most recent NIOSH Proficiency Analytical Testing Program results.

T. Submit a written statement that OSHA monitoring will be performed for all asbestos-related activities performed during this project. This statement must be on company letterhead, dated, include name of the site or project being worked on, and signed by an authorized agent of the company performing the asbestos-related work.

U. Submit a copy of the Contractor's Injury and Illness Prevention Program

V. Submit a copy of written Respiratory Protection Program

2.31b Pre-Start Submittals-Contractor Waste Documentation

Section 7, C. Submit copy of waste transporters Department of Toxic Substances Control, Hazardous Waste Transporter Registration if hazardous asbestos-containing waste is to be removed during the project. If hazardous asbestos-containing waste will not be generated submit the name, address, and registration information for the waste hauler to be used for transporting the waste.

Section 7, D. Submit documentation listing the name and site address of the waste facility designated to receive asbestos-containing waste generated during this project. This documentation shall also include the EPA identification number, and a copy of the current permit authorizing the waste facility to accept and dispose of asbestos-containing waste.

2.31c Pre-Start Submittals-Worker Certifications (Section 5, Letter B)

Submit documentation satisfactory to the Owner that the Contractor's employees, including foremen, supervisor, and any other company personnel or agents who may be exposed to airborne asbestos fibers or who may be responsible for any aspects of abatement activities, have received required US EPA AHERA training.

Submit documentation from physician that all employees or agents who may be exposed to airborne asbestos more than background levels, action level, or the PEL have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health effects. In addition, document that personnel have received medical monitoring as required by Cal/OSHA regulations. The Contractor must be aware of and provide information to the examining physician about unusual

conditions in the workplace environment (e.g., high temperatures, humidity, chemical contaminants) that may impact on the employee's ability to perform work activities.

Submit documentation of respirator fit-testing for all Contractor employees and agents who must enter any work area where asbestos-containing materials may or will be impacted. This fit testing shall be in accordance with qualitative or quantitative procedures as required by OSHA regulations or be quantitative in nature. Documentation pertaining to NIOSH approvals for all respiratory protective devices utilized on site shall also be included.

Submit each of the following and other pre-abatement documents required above, unless exempted in the scope of work or the bidding requirements, prior to the start of abatement. This list is to be used a checklist only and specific requirements are outlined in Sections 2.31a, b, and c of the General Requirements.

2.31a Checklist

A. _____ Notification to Regional Air Resource Board, Regional EPA, or local APCD/AQMD

B. _____ Notification to CAL/OSHA (prior to start)

C. _____ State Contractor's license with asbestos certification

D. _____ Contractor Cal/OSHA Registration

E. _____ Notification of Prior Environmental Citations/Legal Proceedings/Contract Termination

F. _____ Insurance Certificate

a) General liability
b) Asbestos liability certificate
c) Automobile Insurance
d) Workers' compensation insurance

G. _____ Names of all Subcontractors, license numbers and copies of general liability insurance with a minimum coverage of $1,000,000.00. Client & PMP, Inc. named as additional insured.

H. _____ Emergency and non-emergency phone list

I. _____ Written Directions/Map to nearest Hospital

J. _____ Project Schedules

K. _____ Contractor Map/Drawings for Containment Setup

L. _____ Safety Data Sheets

M. _____ Manufacturers' Equipment Specification Sheets

N. _____ Contractor OSHA Air Monitoring Statement listing the laboratory used for air sample analysis

O. _____ Contractor Injury and Illness Prevention Program

P. _____ Contractor Written Respiratory Program

2.31b Checklist

_____ Name and telephone number of transporter

_____ Name and EPA number of Waste Sites

2.31c Checklist

_____ Training records - AHERA (Supervisor and worker) *

_____ Respiratory fit tests for each employee*

_____ Medical records for each employee*

Note *No contractor worker will be allowed inside containment prior to verification of AHERA, respirator and medical documentation. This verification must either be onsite or faxed to PMP, Inc.'s office prior to entry.

2.32 Pre-start Submittals - Owner

Owner shall provide to the Contractor prior to commencement of work:

a. Any available pre-abatement air sampling data to Contractor.

b. List of Owner's employees/agents who will or may require worksite access.

c. Data on equipment access protection and/or shutdown procedures.

2.4 Submittals During the Work Process

The following documentation shall be submitted to the PMP, Inc. Project Manager:

A. The contractor shall submit daily- a copy of the worker roster identifying all employees onsite and the hours worked.

B. The contractor shall submit daily - a copy of a one-page summary of job progress. This summary must include a brief description of the work completed at the site(s), number of employees, and any issues that arose. This summary is in addition to the daily documentation required to be submitted by OSHA and AHERA regulations and other PMP, Inc. specifications.

C. The contractor shall submit daily - copies of work site entry/exit logbooks with information on worker and visitor access.

D. The contractor shall submit daily - copies of the air-differential manometer readings
The contractor shall submit results of air sampling data collected during the course of the abatement including OSHA compliance air monitoring results. Contractor shall submit sample results within 72 hours of collection of the samples for samples to be considered valid indicators of employee exposures within containment. Lack of valid exposure assessments may, at PMP, Inc. Project Manager’s discretion, result in the contractor being required to raise worker personal protection levels.

E. Submit weekly copy of on-site safety meeting documentation. Each safety meeting must be signed by all employees working on the project for that week.

G. Proof of DOP or equivalent (Challenge) testing of HEPA-filtered units

H. Contractor shall submit copies of any Regulatory Agency Inspection/Enforcement Documents

I. Accident Report Forms

J. Other Contract Documents as required by Scope of Work

K. Construction Meeting Minutes

2.41 Submittals During the Work Process-Waste Disposal (Section 7)

A. The contractor shall submit copies of all transport manifests, Land Ban Certifications, trip tickets, weights, and disposal receipts for all asbestos hazardous waste materials.

B. The contractor shall submit copies of all transport manifests, trip tickets, weights, and disposal receipts for all asbestos non-hazardous waste materials.

2.5 Clean-Room Area Postings

Postings may be in a prominent area adjacent to the clean room but must be visible to workers entering and exiting the containment.

List of persons authorized to enter restricted area. The list shall include, among others, the following names with addresses and phone numbers:

Contractor	Testing Laboratory
Air-sampling Professional	Owner's representatives
Asbestos Project Manager	Any other designated by the Owner
Regulatory Agency Personnel	

A copy of the daily entry/exit logbook shall be maintained in the clean room area of the worker decontamination system and provided to the PMP, Inc. Project Manager weekly or as otherwise requested.

Telephone numbers, other than 911 of all emergency response personnel shall be prominently posted in the clean change area and equipment room. The locations of the nearest telephones shall be indicated on a map or diagram.

Written emergency procedures shall be posted in the clean room.

Written entry/exit procedures shall be posted in the clean room and equipment room. (See Section 9)

All the contractor's personnel and area air sampling results shall be posted in the clean room area within 72 hours of collection, unless otherwise noted.

A copy of the CAL-OSHA and EPA or Local APCD notification shall be posted in the clean room area.

A CAL-OSHA Information poster and a CAL-OSHA Construction Site poster shall be posted in the clean room area.

Copies of Safety Data Sheets (SDS) for all materials onsite shall be posted in the clean room area. Bag out/load out/waste transfer procedures must be listed in writing at the load out exit.

A copy of the contractor's written Respiratory Protection Program shall be posted in the clean room.

2.6 Job Site Documents

The following shall be available at each job site:

1. List of all AHERA-accredited workers and supervisors entering the regulated area.
2. An updated list of all contractor and subcontractor employees who have worked on this job.
3. All contract specifications, Scope of Work, addendums, change orders, etc.. Contractor competent person must sign a document stating he has full knowledge of the Scope of Work and contract specifications.
4. Written Injury and Illness Prevention Program.
5. Training records.
6. Medical records.
7. Written Respiratory Protection Program
   Fit test records for all contractor employees

2.7 Project Close-out Documentation and Submittals

The Contractor shall generate a demolition "as built" drawing detailing all walls, floors, ceilings, mechanical items, plumbing, wiring and structural components which were removed, to what extent each of these items was removed (e.g. entire wall demolished from floor to ceiling), and in what areas. The contractor must provide this drawing to the Owner and PMP, Inc. at the conclusion of the interior asbestos abatement activities when required in the Scope of Work or requested by PMP, Inc. or Owner. Digital pictures of remaining conditions would be helpful but are not required.

Unless submitted during the project, the Contractor shall submit the following post-job submittals to the Owner within thirty (30) days of the completion of asbestos abatement work.

_____ Copies of revised notifications to regulatory agencies.

_____ A copy of the worker/visitor log showing the following for all persons entering the work area: date, name, social security number, entering and leaving times, company or agency represented, and reason for entry. The contractor's time records will not be accepted in lieu of a worker/visitor log. Include a signed cover sheet certifying that the copy is a complete copy of the log from the job.

_____ Copies of all accident reports submitted during the course of work.

_____ A copy of worker exposure monitoring results collected in compliance with Cal/OSHA regulations (Title 8 CCR, Section 1529) including daily/representative/full-shift/breathing-zone air samples and 30-minute excursion samples. Include a cover sheet signed by an authorized representative of the testing laboratory performing the work, indicating that the data is complete and accurate.

_____ If applicable, a copy of the asbestos waste documentation showing dates, times, manifest numbers, quantities of wastes, types of containers removed from the work area, the hauler, and the signature of the recorder.

_____ A Land Disposal Restrictions Notification and Certification.

_____ Completed Uniform Hazardous Waste and Non-Hazardous Wasteforms including information required for the Waste Shipment Record.

_____ A complete record of the air filtration devices used certifying DOP testing (if performed) and printed record, indicating continuous operation, and documenting differential air pressure.

_____ All submittals required before, during, or after the project that have not been submitted must be received by PMP, Inc. prior to PMP, Inc. signing off on contractors' final payment or pay retention release.

_____ Copies of Prevailing Wage Certification Records (unless project is not a prevailing wage project)

SECTION 3. SITE SECURITY

The regulated area shall be restricted to authorized, trained personnel wearing appropriate personal protective equipment.

If required in the Scope of Work and whenever an entire building is placed under containment, the work area(s) under construction must be isolated from the remainder of the property and/or adjacent properties with temporary chain link fencing. This fencing does not eliminate or reduce plywood barrier requirements for any portion of containment that exists on exteriors of buildings. Temporary fencing must be supported at least once every section of fencing by concrete block or equivalent.

Unless exempted in the Scope of Work any portion of containment on the exterior of the buildings must be protected by a burglar resistant, lockable plywood structure. This structure must have a roof and be at least 8 feet tall. This plywood barrier must be solid plywood and be constructed in a manner sufficient to withstand expected weather conditions (i.e. wind, rain, etc.). A soffit overhang may be used for the roof of this structure, barrier walls must extend completely up to soffit overhang ceiling.

Entry into the work area by unauthorized individuals shall be reported immediately to the Owner by the Contractor.

A logbook shall be maintained in the clean room area of the worker decontamination system. Anyone who enters the work areas must record name, affiliation, time in, and time out for each entry. A copy of the daily log shall be provided to the PMP, Inc. Project Manager daily or as otherwise requested.

Access to the work area shall be through a worker decontamination system. All other means of access (doors, windows, hallways, etc.) shall be blocked or locked to prevent entry to or exit from the work area. The only exceptions for this rule are the waste loadout airlock, and emergency exits in case of fire or accident.

Emergency exits shall NOT be locked; however, they shall be sealed with polyethylene sheeting and tape until needed. These emergency exits shall be clearly designated. They shall also have a razor knife permanently in place to facilitate emergency exit.

Contractor should have control of site security during abatement operations, in order to protect work efforts and equipment. During off-hours access to the abatement area shall be restricted by a lockable entry.

Storage of asbestos containing debris, hazardous or not, will be such that access to it is limited to the contractor. Lockable bins shall be utilized, and they shall be locked at all times except when loading occurs. No soft covers will be allowed for any storage bins.

All Owner policies and procedures regarding site security and safety shall be strictly adhered to by the Contractor.

Keys and/or lock combinations to all lockable enclosures and waste bins must be provided to the PMP, Inc. Project Manager prior to the start of abatement.

SECTION 4. EMERGENCY PLANNING

Emergency planning and procedures shall be developed by the Contractor prior to abatement initiation and agreed to by Contractor and Owner.

Emergency procedures shall be established and presented to all employees and the PMP, Inc. Project Manager prior to the beginning of any work. A written emergency plan must be posted.

Emergency planning shall include written notification of police, fire, and emergency medical personnel of planned abatement activities, work schedule and layout of work area, particularly barriers that may affect response capabilities. Emergency planning shall include considerations of fire, explosion, toxic atmospheres, electrical hazards, slips, trips and falls, and heat related injury. A copy of the written Injury and Illness Prevention Program shall be on the work site.

Employees shall be trained in evacuation procedures in the event of workplace emergencies. Telephone numbers of all emergency response personnel shall be prominently posted in the clean change area and equipment room, along with the locations of the nearest telephone indicated on a map or diagram.

At least two fire extinguishers shall be present on site. At least one fire extinguisher shall be present outside of the containment and at least one fire extinguisher shall be present inside containment. Additional extinguishers shall be distributed according to Cal/OSHA requirements or as identified in the Scope of Work.

An emergency blast horn shall be placed inside of any containment comprising more than a single building space for emergency evacuation in the event of a fire or other emergency.

If required in the Scope of Work, a means of radio communication shall be established between inside and outside of containment whenever a containment has a section(s) not directly visible from a clear-sight view window. This requirement may be met through walkie talkies or by wired communication systems. PMP, Inc. project monitor is to be given a communication device tied into communication system used by the contractor's crew.

The contractor shall clearly mark emergency egress routes in brightly colored spray paint, tape, or equivalent, within the containment area. When required by the specification, or deemed necessary by the PMP, Inc. Project Manager, the contractor shall station flashlights throughout the work area to be used in the advent of an electrical power outage. Tools that can be used to cut containment poly must be placed at each emergency egress location.

Emergency exit signs, and arrows painted, taped, or otherwise marked shall be located approximately three feet from the floor level. This will make signs visible for standing workers as well as workers required to crawl to emergency egress location.

In the event of a power and/or water interruption all abatement work, other than cleanup of debris on the ground, is to stop. Work disturbing asbestos cannot continue until the power and/or water is restored, or the Project Manager authorizes emergency procedures

During hot working conditions, such as in an attic space during summer, or in containments where live steam or hot water lines are exposed, special attention must be given to the possibility of heat stress and burns.

In the case of fire, or other life-threatening situations, all decontamination requirements are null and void. Immediate preservation of life takes precedence over decontamination requirements.

If emergency personnel (fire, police, paramedics, etc.) are called to the project site, they must be informed of the fact that the project is an asbestos abatement project and whether containment has been established and/or breeched.

SECTION 5. PRE-START MEETING (See also Section 2)

The successful Bidder, his on-site supervisory personnel, and Air Sampling Professional (if applicable), representatives of the Owner, Owner's Asbestos Project Manager, and other individuals as necessary shall be present at a pre-start meeting TIME AND PLACE AS NOTED IN THE SCOPE OF WORK OR TO BE DETERMINED.

Responsibility for notification of building occupants regarding impending activity shall be determined at this meeting.

At this meeting the Contractor shall provide all required submittals, as indicated in Section 2, Part 2.31a, b, and c.

The Contractor's supervisory personnel must be given a complete copy of the Scope of Work and attached abatement specifications (including these Asbestos General Requirements) and must be familiar with them prior to the pre-start meeting. Delays caused by an onsite contractor foreman not being familiar with the requirements of these specifications will not extend the Contractor's completion date.

In addition, contractor shall be prepared to provide detailed information on preparation of work area, personal protective equipment, employee experience, training and assigned responsibilities during the project. Contractor must also be prepared to discuss decontamination procedures for personnel, work area and equipment, abatement methods and procedures, required air monitoring program, procedures for handling and disposing of waste materials and procedures for final decontamination and cleanup. A sequence of work and performance schedule, procedures for dealing with heat stress and emergency procedures shall also be submitted.

If applicable, a detailed work-area-by-work-area schedule must be submitted at this time. The schedule shall have, at a minimum, the work area and the day/month for beginning and terminating work in each work area. During progress of work, it shall be the contractor's responsibility to keep the schedule current and up to date.

SECTION 6. MATERIALS AND EQUIPMENT

6.1 Contractor Equipment and Supplies

Deliver all consumable materials in the original packages, containers or bundles bearing the name of the manufacturer and brand name (where applicable). These must be approved by the Owner. Polyethylene (Poly) sheeting, 4-mil thick for walls and 6-mil thick for floors and all other uses, shall be provided in widths selected to minimize the frequency of joints.

All poly shall be flame-retardant, fire-rated poly. This includes all poly used for decon setups whether or not they are erected inside of the building.

Polyethylene sheeting utilized for worker decontamination enclosure shall be opaque white or black in color and each layer shall be a minimum of 6-mil thick. At least two layers shall be required. Modesty barriers are to be erected whenever and wherever the PMP, Inc. Project Manager determines one is needed.

Disposal bags shall be of 6-mil polyethylene with labels required by OSHA, DOT, Department of Toxic Substance Control regulations.

Disposal drums shall be metal or fiber board with locking ring tops to be used only if required and/or allowed by selected dumpsite.

Stick-on labels as per DOHS and OSHA requirements for disposal drums shall be provided.

Warning signs as required by OSHA shall be provided and posted per regulations.

Surfactant (wetting agent) shall be a 50/50 mixture of polyoxyethylene ether and polyoxethylene ester or equivalent, mixed, and used according to the manufacturer's directions.

A sufficient number of pressure differential units equipped with HEPA filtration and operated in accordance with ANSI Z9.2-79 and EPA guidance document EPA 560/5-83-002 Guidance for Controlling Friable Asbestos-Containing Materials in Buildings, Appendix F: Recommended Specifications and Operating Procedures for the Use of Negative Pressure Systems for Asbestos Abatement, shall be utilized so as to meet the requirements of Section 12 of this specification.

All HEPA filtration equipment must be tested with DOP or an equivalent testing agent (see Section 12).

The contractor will provide adequate number of respirators for the work force. These respirators will include, when specified:

a. Full face piece supplied air respirators with HEPA-filtered disconnects operated in positive pressure or pressure demand mode.
b. Full face piece, tight-fitting, powered air-purifying respirators with HEPA-filters,
c. Half mask or full-face respirators with HEPA filters.

All respirators shall be NIOSH-approved and be equipped with supplies for immediate replacement of defective parts.

Contractor shall provide full-body disposable protective clothing, including head, body, and foot coverings, such as Tyvek, or equivalent, to all workers and authorized visitors in sizes adequate to accommodate movement without tearing. No street clothes, unless excepted by Scope of Work or other portions of this specification are allowed to be worn under disposable protective clothing.

The Contractor shall provide additional safety equipment (e.g., hard hats, eye protection, safety shoes, disposable PVC gloves), as necessary to all workers and authorized visitors.

Non-skid footwear shall be provided to all abatement workers.

A sufficient supply of scaffolds, ladders, lifts and hand tools (e.g., scrapers, wire cutters, brushes, utility knives, wire saws, etc.) shall be provided as needed. Only fiberglass ladders shall be used within the work area. Wooden ladders and wooden handled tools shall not be allowed within the work area.

Rubber dustpans and rubber squeegees shall be provided for cleanup.

A sufficient supply of HEPA-filtered vacuum systems shall be available.

The PMP, Inc. Project Manager may require the use of additional equipment if he feels the number or number of certain items or materials is not sufficient.

Vacuums and pressure differential units shall arrive on site sealed and free of debris. Pre-filters of all pressure differential units must be new and unused.

All product data sheets, and all Material Safety Data sheets (MSDS) shall be submitted for all products and materials prior to their use on the job site.

All contractor equipment and supplies must arrive on site clean and dust free. Equipment must be inspected and accepted by PMP, Inc. Project Manager as it arrives onsite. Any equipment covered with dust (no matter the source of dust), plaster debris, multiple layers of encapsulant and/or spray glue, or any other debris will not be accepted. Chipped and/or rusted equipment will not be accepted even if it is to be used outside of containment. Delays caused by a lack of clean equipment will not extend Contractor's schedule.

Equipment rejected due to a lack of cleanliness must be removed from Owner's grounds in order to be cleaned. Dirty equipment wrapped in plastic will not be acceptable.

The decision of the Owner, PMP, Inc. Project Manager or the Owner's representative on all equipment and supplies shall be final.

6.2 Rental Equipment and Supplies

Any equipment rented and delivered to the site for the purpose of conducting asbestos abatement work must be accompanied with documentation verifying that the rental agency has been notified and acknowledges receipt of notification that the equipment being rented will be used for asbestos abatement work. This documentation must be submitted to the PMP, Inc. Project Manager prior to the equipment being delivered to the job site. Rental equipment, including scaffolding, will be held to the same standard of cleanliness as all other equipment on this project.

All rented equipment must be inspected and accepted by PMP, Inc. Project Manager as it arrives onsite. Any equipment covered with dust (no matter the source of dust), plaster debris, multiple layers of encapsulant and/or spray glue, or any other debris will not be accepted. Delays caused by a lack of clean equipment will not extend Contractor's schedule. Equipment rejected due to a lack of cleanliness must be removed from Owner's grounds in order to be cleaned. Dirty equipment wrapped in plastic will not be acceptable.

The PMP, Inc. Project Manager must be informed 24 hours prior to the delivery of any rental equipment.

The decision of the Owner, PMP, Inc. Project Manager or the Owner's representative on all rental

equipment and supplies shall be final.

SECTION 7. WORK SITE FACILITIES

The Owner shall provide sanitary facilities for abatement personnel outside of the enclosed work area. To use these facilities all workers shall wear normal street clothes including pants and shirts. No bathing suits or disposable coveralls are allowed to be worn to use the sanitary facilities.

At no-time will workers be allowed to exit the containment area, once abatement has begun disturbing asbestos, without showering prior to entering the clean chamber of the decon. (Exception to this may be made, at PMP, Inc. project manager's discretion, for Project Manager and Contractor's supervisor for conducting a clearance visual during which the PMP, Inc. Project Manager may allow street clothes to be worn under disposable overalls).

At no time shall workers exit the clean room/changing area wearing anything other than street clothes, including pants and shirt.

The Owner shall provide water for construction purposes, unless stated otherwise in the Scope of Work. Contractor shall connect to existing Owner system.

The Owner shall provide the electrical source. Contractor is responsible for all connections and disconnection of electrical power. All electrical power supplied to the containment area must be ground fault interrupter protected. Loss of power due to contractor activities will require contractor to supply electrical power at his own expense.

The Owner or its representative shall specify the wastewater discharge location and location of waste bins. The owner, when applicable, shall specify acceptable routes of travel.

The Contractor shall be required to place footing materials of sufficient thickness, strength, and size under the casters, footings, and/or runners of waste bin(s) to prevent damage of property surfaces. The contractor is responsible for all damages to Owner's property caused by the delivery, placement, or removal of a waste bin. Damaged property shall be repaired to equal or better condition than was present prior to the activity causing the damage. This may be amended in scope of work for this project.

The Owner shall specify on-site parking areas, if available, and access to the site.

SECTION 8. RESPIRATORY PROTECTION

All respiratory protection shall be provided to workers in accordance with the submitted written respiratory protection program, which includes all items as required by OSHA. This program shall be posted in the clean room of the worker decontamination enclosure system or adjacent to the clean room.

The Contractor shall ensure that all workers entering the regulated area wear appropriate respiratory protection. Respiratory protection provided workers shall be in accordance with 8 CCR 1529, and 8 CCR 5144 and the respiratory protection program submitted by the Contractor. This program shall be available at the worksite.

The PMP, Inc. Project Manager, his or her onsite representative, or the Owner or their representative may deny access to the regulated area to anyone who, in the final judgement of the PMP, Inc. Project Manager, is not properly wearing adequate respiratory protection for the project conditions. This includes but is not limited to those wearing unidentified respirators, those with improperly sealed respirators, those wearing respirators in an improper manner such as over their protective suit hood, or in any other fashion judged by the PMP, Inc. Project Manner to be improper or inadequate to protect the individual from the airborne asbestos at the project site.

The Contractor shall provide each worker needing respiratory protection with his or her own, individually identified, NIOSH-approved respirator. At a minimum, these respirators will be equipped with a P-100 series HEPA filter. The Contractor shall provide additional filter types if that becomes necessary for specific hazards discovered on the job site or if required in the contract documents.

The Contractor shall ensure that all workers use the respirator in compliance with the manufacturer's instructions for proper use and care of that product.

Workers must perform positive and negative respirator seal checks each time a respirator is put on, provided the respirator design so permits.

The Contractor shall ensure that those workers wearing powered air purifying respirators test the air flow rate according to the frequency and methods specified by the manufacturer.

Workers shall be given, at least, a qualitative fit test in accordance with procedures detailed in the Cal/OSHA requirements for all respirators to be used on this abatement project. An appropriately administered quantitative fit test may be substituted for the qualitative fit test.

The Contractor shall ensure and provide written records to the PMP, Inc. Project Manager that all workers wearing tight-fitting respirators have been appropriately fit tested in accordance with the requirements of 8 CCR 5144.

The Contractor shall ensure that nothing interferes with the seal of the respirator to the face of the worker. This includes but is not limited to facial hair, clothing, protective clothing, equipment or anything else that comes between the respirator and the face of the worker.

Use of any respirator must follow the manufacturer's instructions for proper use and care of that product.
The Contractor shall ensure that workers wear respirators underneath protective clothing

Workers conducting any work that may create an airborne release of asbestos must wear appropriate respiratory protection. This includes but is not limited to the pre-cleaning of asbestos

contamination off of furniture, equipment and floors, and the set-up of contaminated work areas.

The judgement of the PMP, Inc. Project Manager shall be final if there is a disagreement between the Owner and the Contractor regarding the need for wearing or the type of personal protection required.

In no event will a negative exposure assessment be allowed to lower respiratory protection, from that listed in the Scope of Work or required by regulation in the absence of an NEA, prior to the start of a project. Air samples used for negative exposure assessments created after the project has started must be from work conducted under this contract.

Minimum Respiratory Protection for OSHA Class I Work
Unless specified differently in the contract documents, the Contractor's employees conducting Class I work will wear tight-fitting, full-face powered-air purifying respirators for all Class I work that will take more than one hour to complete. They must wear a minimum of a half-face negative air–purifying respirator for Class I work lasting less than one hour. Contract documents may require additional respiratory protection, such as the use of supplied air respirator systems if, in the opinion of the PMP, Inc. Project Manager, the airborne asbestos levels are expected to exceed one fiber per cubic centimeter of air (1 f/cc).

After work has begun, if the Contractor wishes to lower respiratory protection requirements, such as for glovebag or other work, he or she must demonstrate to the PMP, Inc. Project Manager that personal air sampling results from that project prove that airborne fibers levels are below the Cal/OSHA Permissible Exposure Limit. The Project Manager will normally require sampling results used for this purpose to include several days of sampling taken during the work expected to generate the highest airborne levels.
The Project Manager will have final authority regarding whether the respiratory protection may be reduced below the need for powered-air purifying respirators.

Unless stated otherwise in the contract documents, for the purposes of respiratory protection, Class I work will include the removal of materials such as gypsum board surfaces that are covered with a texturing or skim coat material that contains over one percent asbestos.

Minimum Respiratory Protection for Class II and III Work Practices
Unless specified differently in the contract documents, the Contractor's employees conducting Class II or III work will wear a minimum of half-face, air-purifying respirators. Contract documents may require additional respiratory protection, such as the use of full-face air-purifying respirators or powered-air-purifying respirators.

After work has begun, if a Contractor wishes to lower respiratory protection requirements, he or she must demonstrate to the PMP, Inc. Project Manager that personal air sampling results from that project prove that airborne fibers levels are below the limit of quantification for the phase contrast microscopy method. The Project Manager will normally require sampling results used for this purpose to include several days of sampling taken during the work expected to generate the highest expected airborne levels. The Project Manager will have final authority regarding whether the respiratory protection may be reduced or eliminated. For example, the PMP, Inc. Project Manager may require personal samples be analyzed by TEM before determining that asbestos does not pose an airborne health risk.

Respiratory Protection for All Work Classes and Unclassified Work
Respiratory protection will always be required if thermal system or surfacing materials are disturbed or if any asbestos-containing materials will not be removed substantially intact.

The PMP, Inc. Project Manager has full authority to raise the level of respiratory protection required for access to the regulated area if in his or her judgement additional respiratory protection is required. For example, if personal air sample results collected by either the Contractor or PMP, Inc. indicate higher than expected levels, the Project Manager is authorized to increase the level of required respiratory protection. The PMP, Inc. Project Manager will determine if the increased respiratory protection is due to new, unexpected developments such as the discovery of new materials, or if the increase is due to the Contractor failing to follow good work practices. The judgement on this matter by the PMP, Inc. Project Manager will be final.

The Owner is not responsible for increased costs or delays resulting from the need to increase respiratory protection should the reason for the increased respiratory protection be due to the Contractor's failure to adequately utilize wet work methods and/or the prompt cleanup of debris.

The Contractor may only implement respiratory protection changes after receiving written approval for the change from the PMP, Inc. Project Manager.

Waste transport and disposal personnel must wear at least half-face, air-purifying respirators when handling intact sealed bags. Powered-air purifying respirators must be worn if waste containers spill, break, or in any other fashion require a Class I work cleanup be performed.

The contractor shall comply with the respiratory protection requirements listed in 8 CCR 1529 until that date that 8 CCR 5144 includes assigned protection factors for all respirators. The following list of respirators and their assigned "protection factors" shall be the criteria for the selection of respiratory protection.

RESPIRATOR SELECTION	PROTECTION FACTOR
Half-mask air purifying respirator equipped with high efficiency particulate air (HEPA) filter - P-100	10
Full-face air purifying respirator equipped with HEPA filter - P-100	10
Half or full-face, powered air purifying respirators equipped with HEPA filter - P-100	1,000
Type C continuous flow supplied air	1,000
Full facepiece, supplied air respirator operated in pressure demand mode	1,000
Full facepiece, supplied air respirator operated in pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus (SCBA)	10,000

Workers shall be provided, as a minimum, with personally issued and marked respirators equipped with high efficiency particulate air (HEPA) filters approved by NIOSH to be worn in the designated work area and/or whenever a potential exposure to asbestos exists. Owner or its representative may refuse entry to the work area to a worker with an unidentified respirator.

Sufficient filters shall be provided for replacement as required by the workers or applicable regulations. Disposable respirators shall not be used.

No worker shall be exposed to levels estimated to be greater than 0.01 f/cc inside their respirator as determined by the protection factor of the respirator worn and the work area fiber levels.

Whenever type C respirator protection is used, compressed air systems shall be designed to provide air volumes and pressures to accommodate respirator manufacturer specifications. The compressed air system shall have a reservoir of adequate capacity to allow the escape of all respirator wearers from contaminated areas in the event of compressor failure.

Compressors must meet the requirements of 29 CFR 1910.134(d).

Location of compressors must be approved by Owner for exhaust and noise considerations.

Compressors must have an in-line carbon monoxide monitor and periodic inspection of carbon monoxide monitors must be documented. Documentation of adequacy of compressed air systems/respiratory protection systems must be retained on site. This documentation will include a list of compatible components with the maximum number and type of respirators that may be used with the system. Periodic testing of compressed air shall insure those systems provide air of sufficient quality (Grade D breathing air). Documentation of this testing, including a description of the process used to perform the test and results of each test must be submitted to the PMP, Inc. Project Manager weekly.

Whenever powered air-purifying respirator protection is used, a sufficient supply of replacement batteries and HEPA filter cartridges shall be provided to the workers. At least one spare fully charged battery must be available on-site for each PAPR in use. The flow rate delivered to the face piece shall be checked and recorded by the Contractor on the sheet provided by the PMP, Inc. Project Manager each time a worker dons the respirator. Written respiratory protection program must detail how this testing is to be performed by each employee or the onsite supervisor. The Contractor shall ensure that the flow rate for PAPRs meets the requirements listed in 8 CCR 1544 regarding tight- and loose-fitting respirators as appropriate. The Contractors shall also ensure that PAPRs are worn, checked, and maintained according to the directions of the manufacturer.

During encapsulation operations or usage of other organic base aerosols (e.g. spray glue, expanding foam, etc.) workers shall be provided with combination organic vapor/HEPA filter respirator cartridges.

SECTION 9. PERSONNEL PROTECTION REQUIREMENT AND TRAINING

Prior to commencement of abatement activities all personnel who will be required to enter the work area or handle containerized asbestos containing materials must have received adequate training in accordance with the OSHA, EPA AHERA and NESHAP regulations.

Special on-site training on equipment and procedures unique to this job site shall be performed by the Contractor as required by law or recommended by the equipment manufacturer.

The Contractor shall provide training in emergency response and evacuation procedures.

See Section 8 for respiratory protection requirements.

Disposable clothing, including head, foot and full body protection, shall be provided in sufficient quantities and adequate sizes for all workers and authorized visitors. Damaged coveralls shall be immediately repaired or replaced.

Hard hats, protective eyewear, proper protective gloves, rubber boots and/or other footwear shall be provided by the Contractor as required for workers and authorized visitors. Safety shoes may be required for some activities.

Contractor personnel shall not wear street clothes or clothes of any type underneath the protective disposable clothing. Upon exiting the work area, no items worn in the work area, such as clothing, personal protective gear, footwear, or hair coverings will be allowed to be worn past the shower of the decontamination unit. Contractor worker(s) have the option of wearing disposable undergarments underneath protective clothing, or they may be nude underneath the protective disposable clothing.

Each time the worker(s) enter the work area they will don new disposable clothing and undergarments. Street clothes (including underwear and shoes) shall not be allowed inside the work area, except during visual clearance activities.

The PMP, Inc. Project Manager may use personal judgement to allow authorized personal to wear street clothes under protective clothing during the construction of final visual or other short-duration visits into the regulated area during times which asbestos is not being disturbed and gross debris is not present. In these situations, approved by the PMP, Inc. Project Manager, the authorized person shall deposit the protective clothing on the dirty side of the decontamination system and may proceed through the shower and clean room wearing the clothes they wore under their protective clothing.

SECTION 10. WORKER DECONTAMINATION ENCLOSURE SYSTEMS (WASTE TRANSFER DECON)

Worker decontamination enclosure systems shall be provided at all locations where workers will enter or exit the work area. One system at a single location for each contained work area is preferred. Enclosure systems may be constructed out of metal, wood or plastic support as appropriate. Plans for construction, including materials and layout, shall be submitted as shop drawings, and approved, in writing, by the Owner or its representative prior to work initiation. Detailed descriptions of portable, prefabricated units, if used, must be submitted for the Owner's approval. The worker decontamination enclosure system shall consist of at least a clean room, a shower room, and an equipment room. All decontamination units shall have, at least, two layers of 6-mil polyethylene sheeting.

Unless stated otherwise in the Scope of Work, all decontamination units, pressure differential units, and other portions of containment outside the building shall be covered with a 2"x 4" wood studs and 1/2" plywood enclosure for security. Pressure differential units shall be secured as necessary to the building or ground. Exhaust openings shall have metal grates to prevent objects from being put into the exhaust openings. Pressure differential exhaust shall be exhausted to an area acceptable to PMP, Inc. Project Manager and mounted through a solid surface, such as plywood.

Entry and exit from all airlocks and decontamination enclosure system chambers shall be through doorways designed to restrict air movement between chambers when not in use.

Each decontamination chamber shall have, at least, a four-inch lip of poly from the floor up the wall to prevent possible transfer of water and debris between chambers. Excess plastic at the corners of this floor is to be fitted to the sides of the chamber by folding plastic and taping, as opposed to cutting away excess poly and taping seams. In addition to this four-inch lip of poly the shower chamber shall have an overflow pan, in which the shower unit sits, that can hold two inches of water. The filter system and any hose connections transferring contaminated water shall be in a secondary containment, such as a metal pan. Any leakage shall be double-bagged or re-filtered.

The dirty side shall have an extra layer of 6-mil polyethylene sheeting on the floor as a "drop cloth" and it shall be replaced at least daily.

The clean room shall be sized and equipped to adequately accommodate the work crew and personal protection equipment. Minimum size of clean and dirty chambers shall be three feet by three feet, minimum size may be increased by requirements in the Scope of Work. Lighting, heat and electricity shall be provided as necessary for comfort. This space shall not be used for storage of tools, equipment, or materials (except as specifically designated), nor as office space.

Shower room shall contain one or more operable showers as necessary to adequately accommodate workers, minimum of one shower for every ten (or portion thereof) workers. The shower enclosure shall be constructed to ensure against leakage of any kind. In addition, the shower shall be a separate unit from the decon walls. The shower unit cannot be made from poly. Metal or hard plastic is acceptable. An adequate supply of soap, shampoo and towels shall be always supplied by the Contractor and available. Shower water shall be drained, collected, and filtered through a system with at least 1.0-micron particle size collection capability.

The shower pan in the shower chamber shall be, at least, 3' x 3' in size. The shower chamber shall be constructed so that no water from the shower can spray out of the chamber, nor any water run down the sides of the poly and miss the pan. The shower chamber dimensions shall be

determined by the size of the shower pan but are not to be smaller than 3' wide by 3' long by 7' tall.

Abatement work will be stopped if decon is not kept in acceptable condition.

Storage or consumption of food and/or beverages shall not be permitted inside the containment or within any of the decontamination chambers. Food or drink consumption within containment will result in the abatement worker(s) dismissal from the site for the duration of the project.

SECTION 11. WORKPLACE ENTRY AND EXIT PROCEDURES

All workers and authorized personnel shall enter the work area through the worker decontamination enclosure system.

All personnel who enter the work area must sign the entry log, located in the clean room.

All personnel, before entering the work area, shall read and be familiar with all posted regulations, personal protection requirements (including workplace entry and exit procedures) and emergency procedures. A sign-off sheet shall be used to acknowledge that these have been reviewed and understood by all personnel prior to entry.

All personnel shall proceed first to the clean room (or area), remove all clothes and don appropriate respiratory protection and disposable coveralls, head covering and foot covering. Hard hats, eye protection and gloves shall also be worn, as appropriate. Clean respirators and protective clothing shall be provided and utilized by each person for each separate entry into the work area.

Personnel wearing designated personal protective equipment shall proceed from the clean room through the shower room and equipment room to the main work area.

Before leaving the work area all personnel shall remove gross contamination from the outside of respirators and protective clothing by brushing and/or wet-wiping procedures. (Small HEPA vacuums with brush attachments may be utilized for this purpose.) Each person shall clean bottoms of protective footwear in the walk-off pan just prior to entering the equipment room.

Personnel shall proceed to equipment room where they remove all protective equipment except respirators. Deposit disposable clothing into appropriately labeled containers for disposal. All clothing items, including underwear or hair coverings must be removed and disposed of prior to entering the shower.

Reusable, contaminated footwear shall be stored in the equipment room when not in use in the work area. This footwear shall be cleaned prior to being removed from the work area. Placing footwear in two 6 mil poly bags is sufficient for moving from one containment to another, but not for moving from one site to another. Contaminated footwear shall remain within the equipment room for the duration of the project. Cleaned footwear may be removed from containment, but must be approved by PMP, Inc. Project Manager.

Still wearing respirators, personnel shall proceed to the shower area, clean the outside of the respirators and the exposed face area under running water prior to removal of respirator, then shower and shampoo to remove residual asbestos contamination. Various types of respirators will require slight modification of these procedures.

After showering and drying off, proceed to the clean room and don clean disposable clothing if there will be later re-entry into the work area, or street clothes if it is the end of the work shift.

These procedures shall be posted in the clean room and equipment room.

SECTION 12. DIFFERENTIAL AIR PRESSURE SYSTEMS (See also Section 13)

12.1 Negative Pressure Requirements

Negative pressure shall be maintained at -0.03" water differential at all times during abatement activities, including entry/exit and bag out procedures. Contractor shall assign crew members to determine cause of loss of pressure any time containment's negative pressure drops below -0.04" water differential. All work will be stopped in any containment for which the negative pressure drops below -0.020" water differential, until problem is resolved, and pressure returns to -0.04" water differential or better.

If containment cannot be brought up to -0.04" water differential, abatement contractor must increase number of negative pressure differential units until 10 air changes per hour is taking place. If this fails to raise negative pressure to acceptable levels, contractor may request in writing a reduction in negative pressure requirements. If PMP, Inc. project manager agrees that contractor has tried all possible remedies, PMP, Inc. project manager may grant reduction in negative pressure requirement. PMP, Inc. project manager is under no obligation to grant this request.

All negative pressure units installed, but not operating, must be sealed at both the exhaust location and the intake of the machine. This will prevent back draft which could allow asbestos fiber contamination from the HEPA filter.

12.2 DOP (or equivalent) Testing

Contractor shall provide differential air pressure systems for each work area in accordance with Appendix J of EPA "Guidance for Controlling Asbestos-Containing Materials in Buildings," EPA 560/5-85-024.

All HEPA filtered systems used on this project shall be tested and certified by an independent company, approved in advance by PMP, Inc., on-site and prior to use. All vacuums and pressure differential units shall meet A NSI Z9.2, using an appropriate testing agent. Documentation of these tests shall be provided to the PMP, Inc. Project Manager prior to the use of any HEPA system.

DOP, or equivalent, testing must be conducted on-site, unless stated otherwise in the Scope of Work. All HEPA filtered units, including but not limited to, vacuums, air pressure differential units, and make-up air filters must be tested onsite. Testing of air pressure differential units must include testing of the wheel attachments, control panel, and seam and rivets of the housing, as well as the HEPA filter itself. A unit which passes DOP testing across the filter, but which fails testing for any component of the housing may be certified as an "Exterior of Containment HEPA Filtered Unit" only.

All HEPA equipped equipment to be used on the project must be delivered to the site empty of all debris, clean and free of dust, and in full operating condition. Covering dirty units with poly, other than the HEPA filter surface, will not be acceptable.

DOP or equivalent testing must be conducted by an independent testing company approved in advance by PMP, Inc. Contractors may not test their own equipment.

DOP or equivalent testing is required when any HEPA filters are changed.

All HEPA filtered machines, including but not limited to vacuums and negative pressure

differential machines, shall be utilized in the manner in which they were DOP tested.

Any negative pressure unit turned upside down, or on its side, must be returned to an upright position and re-DOP tested. Negative pressure units shall not be used on this project while laid on their side or upside down.

In case of a power outage, contractor must seal exhaust ducts against back draft into containment.

All negative air units will have the filter sealed with poly and tape before being shutdown to prevent back draft.

12.3 Differential Pressure Recording Instruments

Differential air pressure shall be continuously monitored by Contractor using a recording instrument, Dwyer Instrument Co., "Photohelic Gauge" or equivalent, connected to an appropriate circular chart recorder or a comparable recorder that maintains a record of dates, times, and pressure differentials. The location of the pressure measurement tap shall be approved in advance by the PMP, Inc. Project Manager. During the operation of the unit, circular charts shall be collected daily, dated, and signed by an OSHA Competent Person present on site. Pressure differential shall be checked a minimum of every hour during the work shift by a person familiar with the operation of the pressure-differential-filtration units, as well as the recording device. Each check shall be documented with a time and date notation on the circular chart and "Manometer Readings" form along with the initials of the person performing the check. A copy of the circular chart record shall be submitted to the PMP, Inc. Project Manager daily. The circular chart shall record time, date, pressure differential, coordinates, and location.

In the event the manometer recording mechanism fails, the Contractor shall be responsible for manually recording the pressure differential at fifteen (15) minute intervals. The log shall be kept until the recording device is operational. The log shall be provided to the PMP, Inc. Project Manager daily.

The "Manometer Readings" form shall be a record of dates and times of pressure readings and instrument stability.

Connect recording instrument to an audible alarm which will activate at pressure differential of-0.025 inches water gauge air pressure. Defective or non-operating instrumentation may require temporary stoppage of work until instrumentation is replaced.

For larger projects at least one manometer station shall be in place for each 25,000 square feet of containment space.

12.4 Differential Pressure System

Exhaust air shall be vented only to the exterior of the building at locations approved by the Owner unless otherwise noted or directed in the Scope of Work or by arrangement with the PMP, Inc. Project Manager. Such outlets shall not be near or adjacent to other building intake vents or louvers or at entrances to building. Openings made in the enclosure system to accommodate these units shall be made air-tight with tape and/or caulking as needed. They shall NOT be exhausted into occupied areas of the building. Twelve-inch (12") extension ducting shall be used to reach from the work area to the outside when required. Careful installation by the contractor, air monitoring by PMP, Inc. and daily inspections by the contractor shall be done to ensure that the ducting does not release fibers into uncontaminated building areas.

The work area shall have a differential air pressure of -0.04 inches water differential whenever the work is being performed including removal, gross clean-up, encapsulation of surfaces, bag-out operations and worker entry and exit procedures. If pressure differential ever drops below -0.025 inches water differential, all work, other than cleanup of waste on the floor of containment, must be halted until reason for pressure differential drop has been determined and corrected.

Only unused pre-manufactured, reinforced flex ducting shall be used within the containment area for exhausting of filtered air. Contractor may not construct ducting using poly or other materials.

All interior of containment air pressure differential units and flex ducting must be wrapped in poly during all abatement activities. This poly wrap is to be removed after “finish detail” work has been completed, but prior to clearance visual.

Flex ducting must be supported by solid surface at point of exit from containment. This may require contractor to install plywood, or similar, structure for exhaust point.

SECTION 13. EXECUTION

13.1 Execution

Contractor and Owner shall investigate the work area and agree (in writing, if necessary) on the pre-abatement condition of the work area.

Contractor shall post danger signs meeting the OSHA specifications at locations and approaches to locations where airborne concentrations of asbestos may exceed ambient background levels.

When electrical supply within area of abatement poses a hazard, contractor, in conjunction with the Owner, shall shut down and lock out electric power to all work areas. Contractor shall provide temporary power and lighting sources, ensure safe installation (including ground faulting) of temporary power sources and equipment by complying with all applicable electrical code requirements and OSHA requirements for temporary electrical systems. Contractor shall have a licensed electrician shut down and lock out electric power, and setup temporary power and lighting sources. All cost of electricity shall be paid for by the Owner unless specified differently in the Scope of Work. Cost for set-up of temporary power is the responsibility of the abatement contractor unless specified differently in the Scope of Work.

When plumbing is required to be altered or becomes damaged, contractor shall have a licensed plumber disconnect and cap all water as necessary within the work area. Water shall be provided by the Owner from a location near the work area, but not necessarily within the work area.

Shut down and lock out all heating, ventilating, and air-conditioning-system (HVAC) components that are in, supply, or pass through the work area. Seal all intake and exhaust vents in the work area with tape and 6-mil polyethylene within the work area (interior) and on the exterior of the building. Also seal any seams in system components that pass through the work area.

Pre-clean all fixed objects in all work areas using HEPA-filtered vacuums and/or wet-cleaning techniques as appropriate or deemed necessary by the PMP, Inc. Project Manager. Careful attention must be paid to machinery behind grills or gratings where access may be difficult but contamination significant. After pre-cleaning, enclose fixed objects in 6-mil polyethylene sheeting and seal securely in place with tape.

Pre-clean all surfaces in all work areas using HEPA filtered vacuums and/or wet cleaning methods as appropriate. Do not disturb asbestos-containing materials during the pre-cleaning phase.

Unless otherwise stated in the Scope of Work or by agreement with the PMP, Inc. Project Manage all non-asbestos-containing materials left in the work area shall be covered by two layers of 6-mil polyethylene sheeting. If any non-asbestos containing materials become contaminated with asbestos during removal activities these materials shall be disposed of as asbestos-containing materials by the Contractor. The PMP, Inc. Project Manager shall determine the friability of these materials prior to disposal. These materials shall be manifested appropriately.

Contractor shall seal all windows, doorways, elevator openings, corridor entrances, drains, ducts, grills, grates, diffusers, skylights and other openings between the work area and uncontaminated areas outside of the work area. These openings must be sealed with 6-mil polyethylene sheeting and tape. These protective layers shall be in addition to the two polyethylene layers on floors, ceilings, and walls. These openings are referred to as critical barriers. Seal all cracks in critical barrier areas with tape, caulk, or foam prior to sealing critical barriers.

A critical barrier only, negative pressure check shall be required prior to the set-up of interior containment. Prior to the Contractor covering critical barriers with additional layers of wall, floor, or ceiling poly, the installation and integrity of critical barrier seals must be approved by the PMP, Inc. Project Manager. Wall, floor, and ceiling poly installed prior to the critical barrier negative pressure check shall be removed by the Contractor if deemed required by the PMP, Inc. Project Manager in order to properly test critical barriers.

All items attached to asbestos-containing materials and items which cannot be removed without disturbing asbestos-containing materials shall be removed by the Contractor after establishment of containment and negative pressure. If these items are to be “saved and returned” or “reused” by the Owner, the Contractor must remove and clean them without damage. These items must be cataloged using the attached “Return Item Inventory Sheet” provided by PMP, Inc.

Contractor shall cover floors in the work area with polyethylene sheeting. Floor shall be covered with a minimum of two layers of 6-mil polyethylene sheeting. Plastic shall be sized to minimize seams. A distance of at least six (6) feet between seams is sufficient. DO NOT locate any seams at wall/floor joints. Floor sheeting shall extend at least twelve inches (12") up the sidewalls of the work area. Sheeting shall be installed in a fashion to prevent slippage between successive layers of material. A layer of 10-mil polyethylene sheeting and/or plywood may be required by the PMP, Inc. Project Manager to protect certain flooring materials -- carpets, hardwood floors, tiles, etc. At no time will wall or ceiling materials be permitted to be dropped onto unprotected floors. This includes areas where the floor surfaces contain asbestos.

Contractor shall cover walls in the work area with polyethylene sheeting. Walls shall be covered with a minimum of two layers of 4-mil polyethylene sheeting. Plastic shall be sized to minimize seams. Seams shall be staggered and separated by a distance of at least six feet (6'). DO NOT locate any seams at wall/floor joints. Wall sheeting shall overlap floor sheeting by at least twelve inches (12") beyond the wall/floor joint to provide a better seal against water damage and for pressure differential maintenance. Wall sheeting shall be secured adequately to prevent it from falling away from the walls. This may require additional support/attachment when pressure differential systems are utilized.

Contractor shall cover ceilings in the work area with polyethylene sheeting. Ceilings shall be covered with a minimum of two layers of 4 mil polyethylene sheeting. Plastic shall be sized to minimize seams. Seams shall be staggered and separated by a distance of at least six feet (6'). DO NOT locate seams at wall/ceiling joints. Ceiling sheeting shall overlap wall sheeting by at least twelve inches (12") beyond the ceiling/wall joint to provide a better seal against water damage and for pressure differential maintenance. Ceiling sheeting shall be secured adequately to prevent it from falling away from the walls. This may require additional support/attachment when pressure differential systems are utilized.

The contractor shall add clear sight windows in the containment walls at least 1' x 2' in size. The PMP, Inc. Project Manager will approve quantity and placement of these inspection windows. PMP, Inc. Project Manager has the right to require more clear sight windows or require placement of windows to be altered.

The equipment room shall be used for storage of equipment and tools at the end of a shift after they have been decontaminated using a HEPA-filtered vacuum and/or wet-cleaning techniques as appropriate. A walk-off pan shall be in the work area just outside the equipment room. A six-mil. disposal bag or a drum lined with a labeled 6-mil polyethylene bag for collection of disposable clothing shall be in this room.
Contractor shall obtain written containment visual clearance from PMP, Inc. Project Manager prior to the start of abatement in all containments.

Contractor is not responsible for normal tape damage due to tape requirements for containment set-up, unless specifically mentioned in the Scope of Work. Contractor is responsible for excessive tape damage and damage from spray glue application, staples, nails, hooks, etc. installed to support containment.

Install and initiate operation of pressure differential equipment as needed to maintain differential-air pressure of -0.030 inches of water. There shall be a sufficient number of differential air pressure units to maintain a minimum of four air changer per hour. All pressure differential units shall have pre-filters at the intake of the system which must be changeable from inside the containment area. Openings made in the enclosure system to accommodate these units shall be made airtight with tape and/or caulking as needed. They shall NOT be exhausted into occupied areas of the building. Twelve-inch (12") extension ducting shall be used to reach from the work area to the outside when required. Careful installation, air monitoring and daily inspections shall be done to ensure that the ducting does not release fibers into uncontaminated building areas.

All flex ducting, protected by poly during abatement or not, pre-filters and intermediate filters shall be manifested and discarded as friable, hazardous asbestos-containing materials. A flex tube may be used for multiple containments on the same job if it is moved from one containment to another in two 6 mil poly bags

Once the containment has been constructed and reinforced as necessary with pressure differential units in operation as required, the contractor shall test the enclosure for leakage utilizing smoke tubes. The containment shall be repaired or reconstructed as needed.

All HEPA systems used on this project shall be tested and certified onsite by an independent company prior to use. (See section 12)

Contractor shall submit logs documenting filter changes for each pressure differential unit.

Contractor shall clearly identify and maintain emergency and fire exits from the work area.

Work shall not begin each day until:

a. Enclosure systems, or modifications thereof, have been designed and built by the contractor and each step approved by the APM. If design of containment is to be altered in any way, after it is approved by the PMP, Inc. Project Manager, a written explanation of how and why the containment is to be altered must be submitted to the PMP, Inc. Project Manager for approval.
b. Pressure-differential systems are functioning according to an acceptable design.
c. All pre-abatement submissions, notifications, postings, and permits have been provided and are satisfactory to the Owner or its representative.
d. All equipment for abatement, clean-up and disposal is on hand.
e. All worker training (and AHERA certification) is completed and documented.
f. The contractor has installed all required clear transparent view ports made of plastic or equivalent, in the polyethylene wall so that activities can be visually monitored by the project manager from outside the containment. This window shall measure approximately 1' wide by 2' high. It shall be installed at a location approved by the PMP, Inc. Project Manager. It is recognized that viewing ports are not possible in all locations.
g. All pressure-differential units and vacuums have received and passed onsite DOP testing.
h. Contractor has at least one competent person at each site in which work is taking place.
i. All necessary documents and information have been posted or are on the work site. See Section 2.

13.2 Power Outage Procedures

The following procedures shall be followed in the event of a power outage (no matter the source of the outage):

Immediately stop abatement activities.
Wet all debris and/or friable materials within the containment.
Depart containment area as soon as reasonable. Shower out or use Hudson sprayers to decontaminate worker if shower is inoperable due to power outage.
Seal containment area including:

A. Decon units
B. Makeup airports
C. Bag out chambers
D. Negative pressure air exhausts or inlets (must be sealed in a fashion that will allow for exhaust of air to occur when power is restored) Re-establish APD before starting abatement

Contractors will be given credit against liquidated damages for all actual down time plus two hours for shut down procedures, decontamination procedures and start up, (total of 6 hours) unless power outage is attributable to abatement contractor actions.

If a generator is required in the specifications, made necessary due to extended power outages, or chosen to be used by the abatement contractor the following issues must be addressed:

Generator must not violate any local noise ordinances nor disturb adjacent building occupants. Generator exhaust must not be allowed to contaminate the makeup air being pulled into the containment. It must, also, not be allowed to mix with HVAC air supplied to adjacent occupied buildings.

13.3 Work Schedule

A detailed work area by work area schedule must be submitted at the pre-start meeting. The schedule shall have, at a minimum, the work area and the day/month for beginning and terminating work in each work area. During progress of work, it shall be the contractor's responsibility to keep the schedule current and up to date.

Contractor's request to change this schedule must be submitted to PMP, Inc. in writing at least 48 hours prior to the proposed addition, deletion or change in hours of a work shift. This would include working more than one shift per day, working extra days in the week, changing work hours or workdays, etc. If 48 hours' notice is not given, the proposed work shift may be canceled by PMP, Inc. Project Manager. The Owner and/or PMP, Inc. Project Manager reserves the right to deny any changes in the work schedule.

If the contractor wishes to work on a Federal or State holiday, more than five days a week, or more than 9 hours a day, Contractor becomes responsible for cost of project management fees to cover extended hours. If contractor fails to appear onsite without notifying PMP, Inc. Project Manager 24 hours in advance, the contractor becomes responsible for all PMP, Inc. Project Manager travel fees, onsite time fees, and other associated project management fees for that day.

SECTION 14. REMOVAL PROCEDURES

Contractor shall wet all asbestos-containing material with an amended water solution using equipment capable of providing a fine spray mist, to reduce airborne-fiber concentrations when the material is disturbed. Saturate the material to the substrate; however, do not allow excessive water to accumulate in the work area. Keep all removed material wet enough to prevent fiber release until it can be containerized for disposal. Maintain high humidity in the work area by misting or spraying to assist in fiber settling and reduce airborne concentrations. Wetting procedures are not equally effective on all types of asbestos-containing materials but shall none-the-less be used in all cases.

Saturated asbestos-containing material shall be removed in manageable sections. Removed material should be containerized immediately (as soon as removed). Surrounding areas shall be periodically sprayed and maintained in a wet condition until visible material is cleaned up. Gross debris shall be cleaned up and bagged prior to any work stoppage, such as for breaks, lunch, end of each shift, or project shut down (voluntary or not).

Material removed from building structures or components shall not be dropped or thrown onto unprotected floors at any time. Floors shall be covered with poly regardless of if they are being removed after ceiling or walls. Material should be removed as intact sections or components whenever possible and carefully lowered to the floor.

Containers (6-mil polyethylene bags or drums) shall be sealed when full. Double bagging of waste material is necessary. Bags shall not be overfilled. They should be securely sealed to prevent accidental opening and leakage by tying tops of bags in an overhand knot or by taping in gooseneck fashion. Do not seal bags with wire or cord.

Drums shall be used to dispose of asbestos-containing waste with sharp-edged components (e.g., nails, screws, metal lath, tin sheeting). Waste must be double bagged and goose-necked within drums.

After completion of all stripping work, surfaces from which asbestos-containing materials have been removed shall be wet-brushed and sponged or cleaned by some equivalent method to remove all visible residue.

After the work area has been rendered free of visible residues (and verified clean by the APM), a thin coat of a satisfactory encapsulating agent shall be applied to lock-down non-visible fibers on all surfaces, in the work area including structural members, building components and plastic sheeting on walls, floors and covering non-removable items, to seal in non-visible residue. Unprotected flooring surfaces shall not be encapsulated unless otherwise noted in the Scope of Work or indicated by the PMP, Inc. Project Manager.

After asbestos-containing materials have been removed from floor surfaces. These floor surfaces shall be washed with a TSP solution, or similar detergent acceptable to the Client, follow-up flooring contractor, and PMP, Inc, Project Manager, prior to clearance air tests.

SECTION 15. WASTE CONTAINER PASS-OUT PROCEDURES

Asbestos-contaminated waste that has been containerized shall be transported out of the work area through the waste transfer airlock or through an approved pass-out arrangement.

Waste pass-out procedures shall utilize two teams of workers, an "inside" team and an "outside" team.
The inside team, wearing appropriate protective clothing and respirators for inside the work area, shall clean the outside, including bottoms, of properly labeled containers (bags, drums, or wrapped components) using HEPA vacuums and wet-wiping techniques and transport them into the waste container pass-out airlock. Provisions for spray cleaning exterior of bags, equipment, and removable items shall be present in the waste pass-out. Wastewater from this operation shall be collected and filtered as required through a 1.0-micron filter. No worker from the inside team shall further exit the work area through this airlock.

The three-chamber system is utilized in the following manner. Workers inside the work area place the waste in the initial waste container, which is usually a bag. They then rinse the bag and seal it. They hand it to a worker in the dirty chamber room who inspects the bag and, if it is clean, places it in the secondary waste container. The secondary container is either another bag or a lined rigid-wall container such as a barrel or box. The worker then seals the secondary container and may attach the proper labeling. The worker places the container in the middle chamber. The worker in the clean chamber then reaches in and lifts the container into the clean chamber. The worker inspects it and if not already labeled, attaches the proper labels. The worker then passes the container to the outside worker who transports the container either to the waste transport vehicle or to a holding area. At no time shall z-flaps of transfer system chambers be taped, held or otherwise blocked open. The Contractor must not allow more than one poly airlock doorway to be open at any one time. This prevents a tunnel system and a breakdown in the isolation of the work area. Negative pressure must be maintained during all waste load-out activities.

The contract documents or the PMP, Inc. Project Manager may in allow a one or two chamber system to be used for some projects, if the liability to the client, in the judgment of the PMP, Inc. Project Manager is not increased. As with a three-chamber system, in a one or two chamber system, the Contractor may never allow more than one poly air flap doorway to be open at any one time. For example, a one chamber system would function in the following manner. Workers in the work area rinse and seal the initial waste container. They hand the initial container to a worker in the load-out chamber. That worker verifies that the container is clean and then places it into the secondary container which will be either another bag or lined ridged-wall container depending on the specifications. The load-out worker then seals the container and applies the appropriate labels. The sealed, labeled container is then passed to the outside workers who transport it to the waste transport container or holding area.

The exit from this airlock shall be secured to prevent unauthorized entry.

SECTION 16. CLEAN-UP PROCEDURE AND VISUAL CLEARANCE CRITERIA

16.1 Clean-up Procedure

Remove and containerize all visible accumulations of asbestos-containing material and asbestos-contaminated debris utilizing rubber dust pans and rubber squeegees to move material around. DO NOT use metal shovels to pick up or move accumulated waste. Special care shall be taken to minimize damage to floor sheeting.

Wet-clean all surfaces in the work area using rags, mops and sponges as appropriate. (Note: Some HEPA vacuums might not be wet-dry vacuums.) To pick up excess water and gross wet debris, a wet-dry shop vacuum with HEPA filter may be used.

Airless sprayers and water hoses shall not be used in a “power washing” fashion on any surfaces.

Contractor shall remove each cleaned layer of polyethylene sheeting from walls and floors. Windows, doors, HVAC system vents and all other critical barriers shall remain sealed. The pressure differential units shall remain in continuous operation. Decontamination enclosure systems shall remain in place and be utilized.

Remove all containerized waste from the work area.

Decontaminate all tools and equipment and remove at the appropriate time in the cleaning sequence.

Contractor shall clean work area and conduct pre-clearance visual. Once pre-visual has been passed by contractor, contractor shall allow dust to settle within containment for 24 hours, then return and re-clean by HEPA-vacuuming and/or wet-cleaning all objects and surfaces in the work area again. At this point PMP, Inc. will conduct the final visual. If final visual fails, contractor must reclean area until final visual passes. Once final visual is passed, contractor will be instructed to encapsulate the containment area, unless encapsulation of containment has been disallowed in the Scope of Work or material specific specification.

Contractor may request a reduction in the 24-hour waiting period, if personal samples collected during the abatement work and detail clean-up work have shown fiber levels below the PEL. Reduction of waiting period must be made in writing, accompanied by personal sample results from this project. Contractor must acknowledge that reduction in waiting period may result in failed clearance air samples and that retaking and re-analyzing these air samples will be at the contractor’s expense. Reduction in waiting time will be at the discretion of the PMP, Inc. Project Manager and client.

16.2 Visual Clearance Criteria:

The Contractor shall perform a pre-final visual of the removal area and adjacent surfaces prior to requesting that the Owner’s representative conduct a final visual inspection. The pre-final visual performed by the Contractor shall verify that all materials have been completely removed from the work area, and that the work area meets the requirements specified in Section 17.

Upon completion of the pre-final visual inspection by the Contractor a final visual of the containment area will be performed by the Owner’s representative. The PMP, Inc. Project Manager will determine the clearance criteria for the project. At a minimum, no three-dimensional debris shall be left within the work area; all poly shall be wet wiped so that no visible dust or debris is left; the decontamination chambers shall be clean of all debris; the waste transfer area

shall be clean of all debris; all equipment and supplies shall be clean of all debris. The Contractor shall not be released to encapsulate the containment until receiving written acceptance by the Owner's representative stating the removal area and the containment have met the criteria of the Owner's representative for completeness of removal and cleanliness of the containment barriers and surfaces.

When required, clearance air sampling shall be performed following the requirements specified in Section 17 after encapsulation of the containment has taken place and enough time has passed to allow the encapsulant to dry. The Owner shall determine the method of analysis to be used based on the amount and type of material removed within a containment. If at a K through 12 school site and the quantity of Asbestos-Containing Material (ACM) exceeds 160 square feet or 260 linear feet, analysis of air samples must be by transmission electron microscopy (TEM) per US EPA AHERA regulations.

The PMP, Inc. Project Manager will conduct the final visual inspection of the work area for visible residue. If any accumulation of residue is observed, it will be assumed to be asbestos and the 24-hour settling period/cleaning cycle will be repeated.

Additional cleaning cycles shall be provided by the contractor, as necessary, at no cost to the Owner until the specified clean criteria have been met.

PMP, Inc. Project Manager has final say on whether an area meets these requirements.

Following the satisfactory completion of clearance-air monitoring, remaining barriers may be removed and properly discarded as non-asbestos containing waste. If contamination exists behind these critical barriers, additional cleaning and air monitoring may be required.

Final visual will be conducted by at least one PMP, Inc. Project Manager. PMP, Inc. may supply additional personnel for inspection in order both to speed the inspection and to more thoroughly inspected the containment areas.

Owner, contractor and PMP, Inc. Project Manager shall jointly review the work area and make a damage assessment, after clearance air samples have passed and containment has been torn down.

SECTION 17. CLEARANCE AIR MONITORING

Following the completion of clean-up operations, the contractor shall notify the PMP, Inc. Project Manager in writing that work areas are ready for final visual inspection. This notification is to be made only after contractor foreman has made a visual inspection of his own.

After the PMP, Inc. Project Manager has given a final written approval of the clean-up operations, the contractor shall proceed to "lock-down" the containment area with an encapsulant. Exception to this is for containments that are not to be encapsulated prior to clearance air testing according to the Scope of Work (ie floor tile only projects).

Owner shall then arrange for an Air Monitoring Professional to sample the air in the work area for airborne fiber concentrations. Clearance-air monitoring shall proceed 24 hours after lock-down or when the area is dry, whichever is later.

Contractor may request a reduction in the 24-hour waiting period, if personal samples collected during the abatement work and detail clean-up work have shown fiber levels below the PEL. Reduction of waiting period must be made in writing, accompanied by personal sample results from this project. Contractor must acknowledge that reduction in waiting period may result in failed, or overloaded (with encapsulant) clearance air samples and that retaking and re-analyzing these air samples will be at the contractor's expense. Reduction in waiting time will be at the discretion of the PMP, Inc. Project Manager and the Owner.

Air samples will be taken using the "aggressive" air sampling techniques described in the AHERA regulations unless noted differently in the Scope of Work for non-AHERA sites. In the case aggressive samples cannot be collected (e.g. in a dirt floor area) this will be noted in the Project Manager's notes.

If PCM analysis is used for clearance air samples, all clearance samples at all locations shall indicate a fiber concentration of less than or equal to 0.01 f/cc for release of the work area.

If TEM analysis is to be used for clearance air samples, then the clearance criteria shall be the same as AHERA, unless otherwise specified in the Scope of Work.

Areas exceeding these levels shall be re-cleaned and, if appropriate, re-encapsulated at no additional cost to the owner. All areas where clearance air samples fail will be re-tested.

The contractor shall be responsible for all subsequent air sampling costs if air samples fail to meet clearance criteria levels. This cost includes four hours of time for PMP, Inc. personnel to collect the air samples and the cost of laboratory analysis.

Roof Removal: No clearance air monitoring required. Only a visual inspection of the roof for roofing debris will be provided.

Tar-like Pipe Wrap Removal: This non-friable material will only be removed by cutting the clean ends of the pipe it is insulating. No clearance air monitoring required.

TSI Removal: When removal is less than three linear feet within a single glovebag (or similar) containment, no clearance air monitoring will be required.

Regardless of the method used, when removal exceeds three linear feet within a single

containment clearance air monitoring will be performed prior to the removal of the containment barriers.

Drywall Removal: Regardless of the asbestos content, when the quantity of drywall removed exceeds 3 square feet, clearance air monitoring will be performed prior to the removal of the containment barriers.

VFT & Mastic Removal: When the quantity removed exceeds 3 square feet, clearance air monitoring will be performed prior to the removal of the containment barriers.

SECTION 18. MONITORING

Owner reserves the right to perform air and performance (contractor work practices, housekeeping, record keeping, etc.) monitoring at any time.

Contractor shall conduct personal air monitoring in accord with OSHA regulations. Results shall be made available to the PMP, Inc. Project Manager within 72 hours of collection. Hard copies of these results shall be supplied to PMP, Inc. Project Manager within 7 days of collection. Failure to supply these sample results in the specified time may cause work to be stopped until all delinquent results have been submitted. Loss of contractor work time because of noncompliance of the provisions of this paragraph will not extend the date for work completion.

Owner may take air samples prior to, during, and after the project. Work shall not be considered complete until all air sampling has been completed and satisfactory levels have been obtained. "Satisfactory levels" shall be those established by AHERA, unless more stringent requirements have been identified in the Scope of Work, General Specifications, General Requirements, or other Project Specifications.

In areas where soil contamination may be present, soil samples must meet specified criteria in Scope of Work prior to clearance air samples collection.

Owner, or PMP, Inc. Project Manager, shall be authorized to issue a STOP WORK order whenever Contractor's work or protective measures are not in accord with published regulations or contract specifications.

SECTION 19. DISPOSAL PROCEDURES

19.1 Disposal Procedures

Waste transport and disposal personnel must wear at least half mask HEPA-cartridge type respirators when handling intact sealed bags.

Disposal bags shall be of 6-mil polyethylene, pre-printed with labels as required by California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) regulations.

Disposal drums shall be plastic, metal or fiber board with locking ring tops. If heavy duty cardboard boxes are allowed in the Scope of Work, they may replace the barrels. Cardboard boxes must be sturdy enough not to be deformed or compromised by the weight of the materials disposed within them.

All containers, including bags and barrels or boxes must be labels the same as the ACM waste disposal bags.

All waste shall be double bagged in 6-mil polyethylene bags and goose-necked. These bags will then be placed into disposal drums as described above.

Contractor shall provide stick-on labels for disposal containers that meet the Cal/OSHA, NESHAPS, and DTSC requirements for hazardous and non-hazardous waste container labeling.

All waste bags shall have visibly damp materials but shall not contain loose water. In the event loose water is discovered within a waste bag, it shall be absorbed with kitty litter, saw dust or similar product prior to the bag being sealed.

All asbestos waste, hazardous or not, shall be manifested. Non-hazardous waste shall be manifested on a non-hazardous waste manifest.

All waste containers (barrels or boxes) shall be sealed in a manner that allows them to be opened for inspection of sealed bags within by PMP Project Manager, Regulatory personnel and Dumpsite personnel.

Waste placed into boxes or barrels at the project site must be disposed of within the same boxes and barrels at the dumpsite. Removal of waste from these boxes and barrels is not allowed. As the work progresses, to prevent exceeding available storage capacity onsite, sealed and labeled containers of asbestos-containing waste shall be removed and transported to the prearranged disposal location.

Disposal must occur at an authorized site in accordance with regulatory requirements of NESHAPS and applicable State and Local guidelines and regulations, including the California State Environmental Protection Agency, Toxic Substances Control Division regulations.

Transport vehicles shall be marked with the sign prescribed by NESHAPS regulations during loading and unloading to warn people of the presence of asbestos.

All dump receipts, trip tickets, waste manifests, NESHAP Waste Shipment Record (WSR) and other documentation of disposal shall be delivered to the Owner, for the Owner's records. The WSR is not required if the cubic yards of asbestos-containing waste is indicated on the Waste Manifest. The manifest should be signed by the Owner, the hauler, and the Disposal Site Operator as the responsibility for the material changes hands. If a second hauler is employed, his

name, address, telephone number and signature should also appear on the form. The WSR, if used, shall be signed by the Owner or its agent and the disposal site operator.

All manifests shall have asbestos waste identified as: "RQ, Asbestos, 9, NA2212, III". This requirement may be changed as new regulations are issued. See "Waste Disposal" requirements at end of "General Requirements".

All manifests shall be accompanied by a "Notice and Certification". A signed copy of this must be provided to the Owner or Owner's agent.

19.2 Transportation to the Landfill

Once drums, bags and wrapped components have been removed from the work area, they shall be loaded into an enclosed (solid walls, ceiling, and floor) truck or waste bin, which has been lined with 6-mil polyethylene (walls and floor).

When moving containers, utilize hand trucks, carts, and proper lifting techniques to avoid back injuries. Trucks with lift gates are helpful for raising drums during truck loading.

Personnel loading asbestos-containing waste shall be protected by disposable clothing including head, body, and foot protection and, at a minimum, half-facepiece, air-purifying, dual cartridge respirators equipped with high-efficiency filters. Any debris or residue observed on containers or surfaces outside of the work area resulting from clean-up or disposal activities shall be immediately cleaned up using HEPA filtered vacuum equipment and/or wet methods as appropriate.

No waste containers shall be onsite which contain other hazardous waste, or hazardous waste from another owner. Waste from multiple sites of the same owner within the same waste container is acceptable; however, it must be manifested separately.

If contractor is storing waste from various sites of one owner, all transportation vehicles shall be covered by the same regulations as the waste bin or truck being used to haul the waste to the dump. If equipment or supplies are to be left in vehicles during hauling of waste-to-waste bin or truck, waste and equipment/supplies must be separated by a solid (wood or metal) barrier which has been sealed as a critical barrier. A poly wall barrier is not sufficient.

Waste bin must be locked at all times except when being filled.

It is the contractor's responsibility to see that all waste bins, trucks, and storage bins arrive onsite completely free from debris.

The contractor shall provide a weight receipt that identifies the net weight of the material being discarded.

19.3 Disposal at the Landfill

Upon reaching the landfill, trucks are to approach the dump location as closely as possible for unloading of the asbestos-containing waste.

Bags, drums, barrels and components shall be inspected as they are off-loaded at the disposal site. Material in damaged containers shall be re-packed in empty drums or bags as necessary. (Local requirements may not allow the disposal of asbestos waste in drums. Check with appropriate agency and institute appropriate alternative procedures.)

Waste containers shall be placed on the ground at the disposal site, not pushed or thrown out of the trucks (weight of wet material could rupture containers).

Personnel off-loading containers at the disposal site shall wear protective equipment consisting of disposable head, body and foot protection and, at a minimum, half-facepiece, air-purifying, dual cartridge respirators equipped with high-efficiency filters.

Following the removal of all containerized waste, the truck cargo area shall be decontaminated using HEPA vacuums and/or wet methods to meet the no visible residue criteria. Polyethylene sheeting shall be removed and discarded, along with contaminated cleaning materials and protective clothing, in bags or drums at the disposal site.

SECTION 20. SPECIFIC PROCEDURES AND REQUIREMENTS

NOTE: All Specific Procedures and Requirements listed in Section 20 shall be reviewed by the contractor along with the Scope of Work issued for the project. If any perceived conflicts are present between the Scope of Work and these specifications or within the General Requirements specification itself, the contractor shall ask for a written interpretation from the PMP, Inc. Project Manager prior to submission of his bid. If conflicts in the "Scope of Work" and this specification or with the General Requirements specification itself are discovered after the start of abatement, the more stringent specification and/or requirements will be enforced. The PMP, Inc. Project Manager shall make the determination as to what which requirements and/or specifications are more stringent.

20.1 General Repair of Damaged Thermal System Insulation (TSI) Procedures

Where TSI has been damaged, and it is feasible to repair the small nicks, cuts, and exposed ends, the following procedures shall be performed:

Contractor shall establish a regulated area according to the requirements of 8 CCR1529 and as enhanced by this specification and the Scope of Work, including but not limited to the posting of the area and allowing on authorized personnel into the work area.

Piece of 4-6 mil poly sheeting shall be placed directly under the area to be worked to collect any fallen debris or repair compound.

Half-masks and disposable suits (at a minimum) shall be used during this work.

The area shall be restricted to those personnel involved in the work, so posting of the accesses is required. In some cases, poly shall be used to cover the access points.

1. A HEPA-vacuum must be in the immediate area to pre-clean any debris observed surrounding the damaged section, or in the event of a mishap.

   If work is performed indoors, the ventilation system shall be off in the areas worked in to prevent fiber distribution. Ventilation supply and exhaust ducts shall be covered with poly sheeting.

2. It will be necessary to remove small sections of other insulation material, such as fiberglass, if debris from the damaged pipewrap has contaminated it.

3. If appropriate, contractor shall HEPA-vacuuming the damaged section will collect all loose, hanging, friable insulation material prior to any further repair work.

4. Very small cracks, holes, nicks, and cuts can be repaired with only joint compound or with a single layer of wettable cloth and appropriate bridging encapsulant. Larger sections of damaged pipewrap, particularly where pipe hangers or metal channel have damaged the insulation, will require at least two layers of wettable cloth.

5. Where the pipewrap cannot be removed completely from penetrations in the walls, floors, or ceilings, the pipewrap shall be removed at least one inch into the opening and sealed with a bridging encapsulant to grade. The Contractor may choose to fill large gaps with fiberglass insulation, prior to sealing with the encapsulant.

6. All of the Contractor's materials, including poly sheeting, tape, joint compound, etc. shall

be removed at the completion of the work performed.

20.2 Glovebag Technique Requirements

Where the glovebag technique is specified for removal of Thermal System Insulation (TSI), or in those areas where the Contractor opts to use glovebags, all of the following conditions must be met:

The Contractor shall develop a regulated area that meets the requirements of 8 CCR 1529 regarding posting and limited access.

The Contractor shall follow the procedures recommended by the manufacturer of the glovebags, and the specifications required by Federal OSHA and Cal/OSHA regulations

All critical openings within the regulated area shall be sealed prior to set up of the containment.

At least one layer of 6 mil poly must be used to contain the abatement area.

Stationary objects in the immediate area of the room which cannot be removed from the work area must be covered with at least one layer of 4 mil poly sheeting after being pre-cleaned.

A minimum three stage decontamination unit with a shower shall be contiguous with the containment for areas requiring removal of more than 6 linear feet of TSI, or 10 square feet of surfacing material.

Negative pressure shall be established and a circular graph recording manometer shall be attached to the containment per Section 13.

A HEPA-filtered vacuum shall be in the immediate area for use in conjunction with the bags or in case of a spill.

Glovebags may not be used on surfaces where temperatures exceed 150 degrees Fahrenheit.

Glovebags may be used only once and may not be moved or slid for removal of a second section of TSI.

At least two persons shall perform Class I glovebag removal as defined by Federal and Cal/OSHA.

Before beginning the operation, loose and friable material adjacent to the glovebag operation shall be wrapped and sealed in two layers of 6 mil poly sheeting or otherwise rendered intact.

Where the system uses an attached waste bag, such bag shall be connected to a collection bag using a hose or other materials which shall withstand pressure of ACM waste and water without losing its integrity.

The Contractor shall apply a sufficient volume of amended water to all pipewrap scheduled for removal while it is enclosed in the glovebag.

A sliding valve or other device shall separate the waste bag from the hose to ensure no exposure when the waste bag is disconnected.

Prior to placement in the disposal bag, glovebags shall be collapsed by removing air within them using a HEPA-vacuum.

Upon detachment, the glovebag must be immediately placed into at least two 6 mil thick disposal bags. The disposal bags must be sealed using the "gooseneck" sealing technique.

Where pipes enter walls, floors, or ceilings which are not within the scope of the project, the pipewrap shall be removed at least 1" into the structure and the pipewrap end must be sealed with bridging encapsulant and/or wettable cloth.

If the Contractor chooses to use a Negative Pressure Glove Bag System, Negative Pressure Glove Box System, or Water Spray Process System in lieu of the traditional Glovebag System, the Contractor shall submit to Owner's agent/site representative detailed written procedures on those systems which will be used. In addition, air sampling data, generated by the Contractor, must be provided to Owner's agent/site representative. Owner's agent/site representative must provide prior approval to alternate techniques and approaches to those specifications detailed here.

The Contractor is responsible for salvage and decontamination of all pipe system supports, hangers, brackets, saddles, etc. These items shall be inventoried by the Contractor and verified by the Owner's agent/site representative before and after abatement. The Contractor will be responsible for replacement of any items lost or damaged.

The Contractor shall be responsible for ensuring the piping system remains adequately supported. This may be achieved by readjusting existing hanger brackets as insulation is removed, or by other approved methods, such as inserting wood blocks to replace the thickness of the removed insulation.

20.3 Mini-Cube Enclosure Requirements

For the purposes of these specifications, "mini-cube enclosure", "mini-enclosure", and "mini-cube" are all used interchangeably and mean the same. The mini-cube enclosure is required to be constructed whenever small sections of walls, ceilings, or pipe insulation are to be removed for electrical, plumbing, mechanical, etc., work. The purpose is to create an enclosed and controlled work environment while removing asbestos or accessing an attic space which is contaminated.

Enclosure walls and floors must be constructed of at least two layers of fire-rated 6 mil poly sheeting. No visible holes, cracks, penetrations, etc. shall be within this enclosure. The upright frame shall be adjustable in order to butt the top of the enclosure to the wall or ceiling area. A single drop layer of 6 mil poly sheeting shall be put down and removed daily at the end of the work shift. For work involving removal of TSI by glovebag technique, only one layer of 6 mil poly sheeting is required for construction of the mini enclosure. All mini-enclosures, mini-cubes, etc. must have a view port that allows the PMP, Inc. Project Manager to view the activities going on inside the regulated area. The placement, number, and size of the view port(s) must be acceptable to the PMP, Inc. Project Manager.

At least two chambers shall be present, separated by flapped poly sheeting doors. The first chamber upon entrance will be called the "clean" chamber, while the second chamber will be called the "dirty" chamber.

Since the top of the enclosure must be open in the chamber where ceiling access will take place, special care must be taken prior to moving the enclosure. If the mini enclosure is designed to be portable, the enclosure must be sealed at the top prior to being moved to the next location. This may be achieved by temporarily sealing the top of the chamber with poly and tape from the inside.

Dirty chamber must be sealed around work area in a fashion that creates an air-tight seal without causing damage to floor, walls, ceilings, or other materials. This may be achieved by use of a pliable material, such as non-porous foam rubber, or other methods approved by the PMP, Inc. project manager. A tight seal must be maintained without damage to the remaining materials (this may be difficult if tape is used).

For access to an attic space, position the enclosure at the location to be worked. The enclosure must be butted up to the ceiling surface to form a semi-seal between the top of the enclosure and the ceiling. The enclosure can then be completely sealed to the ceiling, using tape. After a seal has been established, access into the ceiling can then proceed.

A HEPA vacuum shall be used to establish "negative pressure" or airflow into the enclosure. This shall be verified by using ventilation smoke tubes.

The following equipment and materials, at a minimum, must be present inside the mini enclosure "dirty" chamber:

6 mil poly bags with clean rags for cleaning.

Amended water in a Hudson-like sprayer for the rags.

Empty bag for disposal of items.

Flashlights or drop light as appropriate.

Personal Protective Equipment including extra suits in case of multiple entry/exits

Amended water in a properly labeled Hudson Sprayer
Daily change of 6 mil poly sheeting drop layer.

Other tools needed to perform task.

The following equipment and materials, at a minimum, must be present inside of the mini enclosure "clean" chamber:

Clean potable water in a Hudson-like sprayer which is labeled "Clean Potable Water Only". A new container must be designed for potable water only. No container used previously to hold liquids will be allowed. No open containers will be allowed.

Clean disposable shower or hand towels for drying hands, arms, and face.

6 mil poly bags for disposal of towels and other items.

Any other tools the Contractor requires, such as tape, screwdrivers, etc.

The work area must be delineated with the proper barrier tape and the outside of the poly-flapped entry to the mini-cube must be posted with OSHA required warning signs for a regulated area.

Clean disposable coveralls must be worn entering the mini enclosure and must be removed prior to leaving the mini enclosure. Depending upon the work being performed, the Contractor may choose to "double suit" in disposable coveralls. All workers shall use the Clean Room and its supplies for personal hygiene prior to exiting the enclosure.

For work involving removal of more than 6 linear feet of TSI, or greater than 10 square feet of surfacing material (regardless of method to be used), a shower must be attached to the mini-cube enclosure and be contiguous with the work environment and comply with all other decontamination requirements in related sections of this specification.

If there is removal of greater than 3 linear feet of TSI, or greater than 3 square feet of surfacing material (regardless of the method used), the enclosure must remain in place until a final visual is passed, and clearance air samples are collected by Owner's agent/site representative. Where work involves less than these quantities, only a visual inspection by Owner's agent/site representative will be required prior to removal of the mini enclosure. Mini enclosure shall be constructed in a fashion that will stay in place, remain intact and under negative pressure for numerous days while awaiting clearance air sample results.

20.4 Roofing Abatement Requirements

General Requirements

Except as amended here and in the Scope of Work, all other Sections of this Exhibit shall be followed.

The work shall be coordinated and scheduled when there are favorable weather conditions, such as, performing the abatement work when the forecast is for "clear skies" and no rain for three or more consecutive days. The Contractor shall remove only that amount of roofing material which can be reroofed or covered and secured from the weather.

Work may be halted at the discretion of the Owner's agent/site representative if wind conditions occur which can or does cause removed roofing materials to be blown off the roof area, or beyond the designated removal area perimeter. All roofing work shall be coordinated to allow other trades to work at the same time if their work is in areas where contamination cannot occur. No cutting, sanding, grinding, or removal of any type will take place until all preparations for removal have been completed and inspected by the onsite project manager. This section may be amended in other sections of this specification for this project.

The words "clear skies" are used as a means of indicating favorable weather conditions. These

two words do not mean, nor are they intended to require skies be clear and free of clouds, fog, or other meteorological conditions which are not expected or forecast to produce measurable rain. The follow up requirement of no rain for three or more consecutive days is to help clarify the favorable weather condition requirement. The last sentence concerning the amount of roofing to be removed is to further instruct and direct the Contractor not to be over optimistic and create more open roof areas than can be reroofed, secured, or properly protected from weather in case the forecast changes unexpectedly or without warning.

All work hours at the site shall be determined by the Owner or as defined in other sections of this Exhibit. Unless otherwise stated, the buildings will be reoccupied each morning Monday through Friday.

All work shall be coordinated with the other trades involved on this project, with central coordination being primary between the abatement contractor and the General Contractor for the project. However, Owner's agent/site representative must be notified of projects in advance as stated in other sections of this Exhibit.

The Contractor shall provide all necessary equipment, tools, materials, lighting, labor, etc. to perform the work. Sufficient lighting shall be provided to illuminate the entire removal and transit areas for removal of roofing material, and for the final visual inspection by the Owner's agent/site representative if the work is to be performed at night.

All HEPA equipment to be used on the project must be delivered to the site empty of all debris, clean, free of dust, and in full operating condition. HEPA equipment to be used inside any building must have been DOP tested within the last 90 days. This DOP certification must be verified by Owner's agent/site representative prior to its use.

The Contractor shall provide worker safety according to all OSHA regulations (Title 8), including use of tie-offs, harnesses, and lanyards. Particular attention shall be given to the placement and securing of accesses (ladders, etc.) to the roof and for fall protection for those working near the perimeter of the roof.

All ladders used shall conform to Cal/OSHA requirements. The ladders shall extend at least three feet above the roof line and shall be tied off to the building to prevent them from sliding.
Contractor Responsibilities

The Contractor shall be responsible for securing all exposed roof surfaces, including any roof penetrations against weather after roofing materials have been removed. Protection of the roof must be made with an impermeable barrier to prevent water from entering the building structure.

The Contractor will be responsible for all clean-up and costs associated with the decontamination of occupied spaces in the event of contamination of an occupied space.

The Contractor is responsible for any contamination of the attic space above the existing ceilings inside the buildings caused by their work, except as noted specifically in the Scope of Work.

The Contractor is responsible for damage to the roofing substrate and will be responsible for repair or replacement if damaged.

The Contractor is responsible for removal of all roofing layers and associated materials such as roofing nails, insulation, fiberboard, etc. down to the wood or metal substrate regardless of asbestos content, unless otherwise noted in the Scope of Work. Where it is unknown how many layers of roofing materials exist, it must be assumed that there are multiple roofing layers present. The Contractor may, upon request and approval by the Owner, collect core samples of any roof to be removed for the purpose of determining its depth and structure. If coring is conducted, it is the responsibility of the Contractor to repair the areas affected to industry standards using non-asbestos materials.

The Contractor is responsible for removing all roofing nails and driving in all nails used for securing the roofing substrate after roof material has been removed. The Contractor will not be required to remove silver paint or tar coating on conduit, roof jacks, heating, ventilation, and air conditioning (HVAC) equipment, flashings, etc. which will be reused by the Owner. Where flashing is to be reused, the Contractor shall carefully remove and save the flashing in an undamaged condition, unless otherwise required by the Owner. This section may be amended in the Scope of Work for this project.

The Contractor is responsible for removal and replacement of wood block or metal supports which may be present under conduit, gas lines, piping, HVAC units, ducting, etc. in order to perform the work. The Contractor is also responsible for temporarily installing wood blocks for any existing roof structures during the roofing removal, when it is necessary to remove existing support members to accomplish the work.

The Contractor is responsible for damage to all equipment and existing cables which are present on the roof. The Contractor is responsible for damage to electrical wiring, telephone lines, antenna wires, and other conduits which are present. An inspection for pre-existing conditions is the responsibility of the Contractor but may also be conducted by the Owner's representative.

The Contractor is responsible for obtaining all necessary permits to perform this work, including any local permits for work in the evening/night hours.

Standards of cleanliness for fluted metal decks located underneath asbestos-containing roofing materials. It is possible for the abatement crew to remove the asbestos-containing roofing materials without breaking through or removing the light grey insulation material beneath it. If removal of asbestos roofing materials is performed as described above, and the insulation material remains intact, Client’s agent/site representative can conduct a final visual for asbestos-containing debris. Once this inspection has been completed, and the requirement for no remaining asbestos-containing debris on the roof is met, the insulation layer is removed.

At this point, asbestos is no longer an issue, and Client’s agent/site representative will allow minor amounts of the non-asbestos debris to remain in the fluted areas of the deck. General cleaning of the flutes is conducted to a point where the amount of debris remaining is reduced to a minimal amount without having to completely clean or vacuum the flute channel.

The Client is unaware of any potential hazard which could be caused by leaving some non-asbestos debris and does not consider it necessary to have the flute channels detailed beyond generally clean conditions. However, if the fiberboard layer is extensively damaged during removal of the asbestos-containing materials, and asbestos-containing roofing debris cannot be distinguished from non-asbestos containing roofing materials, all flutes shall be vacuumed and cleaned as set forth in the project specifications.

Owner Responsibilities

The Owner is responsible for closing all windows in the building where the asbestos roofing material will be removed. This must be done prior to the asbestos abatement contractor arriving onsite for the work shift, in order to prevent delays.

The Owner shall also be responsible for cutting or trimming back all trees and limbs which may impact the removal of the existing roofing materials.

General Roof Removal Instructions and Requirements

Removal of non-friable asbestos-containing roofing is designated as Class II work. Half-masks and disposable coveralls shall be used at a minimum by all workers, at all times, when within the regulated area.

No personnel will be allowed into the regulated area during actual removal work without proper respiratory and personal protective equipment. Work boots with hard soles are required to be worn by all abatement personnel. No athletic, street, or dress shoes are to be worn during work activities.

All roofing material shall be removed in an intact state to the extent feasible.

All roofing is to be removed wet by an amended water solution or encapsulant as necessary.

The abated roof area shall be HEPA vacuumed after roofing materials have been removed. Particular attention shall be directed at the flute channels of metal decks.

Pre-Abatement Preparation Requirements

The Contractor shall seal all air intakes associated with the HVAC units which are on or near the roof under abatement, and at adjacent HVAC units, particularly downwind from roofing removal activity. In addition, all louvers, window mounted fan systems, attic openings, etc., shall be sealed as critical barriers. The Contractor is responsible for sealing all HVAC openings as critical barriers using one layer of 6 mil poly. These critical barriers shall be installed at the beginning of each shift and removed at the end of each shift prior to reuse by the Owner. If the building will not be reoccupied daily, the barriers may stay in place.

The perimeter of the roof where removal is to be conducted, shall be posted with barrier tape at a distance of at least 20 feet from the edge of the removal area. This barrier tape will provide a buffer zone and assist in the restriction of non-abatement personnel.

Poly sheeting shall be placed on the ground directly below the work area or on the adjacent roof surfaces and cover an area extending out at least 10 feet. The Contractor shall secure the poly to the ground using tape, weights, or other means to secure the poly from being picked up by wind or becoming a trip hazard. The Contractor shall secure the poly to the adjacent roof surfaces with tape, etc.

Waste Bin Preparations

The Contractor is responsible for inspecting all waste bins delivered to the job site for load worthiness. The Owner's agent/site representative reserves the right to refuse any waste bin without any additional cost to the client, which upon examination, and in the opinion of the site representative, has a high probability of failure of doors, skids, walls, floors, or which contains other debris.

The Contractor shall be required to place footing materials of sufficient thickness, strength, and size under the casters, footings, and/or runners of waste bin(s) to prevent damage of property surfaces. The contractor is responsible for all damages to Owner's property caused by the delivery, placement, or removal of a waste bin. Damaged property shall be repaired to equal or better condition than was present prior to the activity causing the damage. This section may be amended in the Scope of Work for this project.

Unless the roofing material is carried or passed to the ground by hand, it shall be lowered to the ground via covered, dust-tight chute, crane, or hoist. All waste shall be sufficiently wetted with amended water to prevent fiber release. If fiber release cannot be prevented, then the chute and bin must be within a negative pressure enclosure. In no case shall roofing materials be dropped or thrown into trucks, bins, or waste bins from the roof without the protection of a dust tight chute or other means acceptable to the PMP, Inc. Project Manager.

Posting and Label Requirements for:

Regulated Area Entry Points and Waste Bin Perimeters

Access to regulated areas shall be posted as outlined by Cal/OSHA Title 8, 1529 (k)(7)(B) 1 and 2 with warning signs. Perimeters of waste bin(s) shall also be posted as outlined by Cal/OSHA Title 8, 1529 (k)(7)(B) 1 and 2 with barrier tape bearing the following information:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE
REQUIRED IN THIS AREA

These postings are required to warn non-abatement personnel of the restricted access, and potential hazard which exists in the vicinity of the regulated areas and waste bin(s).

Building Perimeter at Ground Level

Building perimeters shall be posted with barrier tape bearing one of the following descriptions:

CAUTION in black letters on a solid yellow background.
DANGER in black letters on a solid red background.
DANGER ASBESTOS HAZARD in black letters on a solid red background.

Waste Material Containers

Waste material containers, including the "burrito wrapped" material, shall have warning labels affixed in accordance with Cal/OSHA Title 8, 1529 (k)(8) (A-D).

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

General Requirements for Creating Roof Penetrations

All roofing penetration cuts (if any) shall be at the direction of the primary contractors' Job Foreman and coordinated with Owner's agent/site representative as to the time of work. Any equipment to be used for the purposes of cutting, grinding, or sanding must meet or exceed all Cal/OSHA requirements regarding HEPA filtration and wetting/misting. Any equipment rented for the purpose of conducting asbestos work must be accompanied with documentation verifying that the rental agency has been notified and acknowledges receipt of notification that the equipment being rented will be used for asbestos related work. This documentation will be submitted to Owner's agent/site representative prior to the equipment being used on the job site.

The penetration area shall be surrounded by a 10-foot-wide section of at least 4 mil poly. This poly will help in the cleanup of small roofing material particles which may otherwise be mixed onto the surface of surrounding roof material. If the penetration is within 10 feet of the edge of the roof, poly shall be placed on the ground (or roof) directly below the work area. The Contractor shall secure the poly to the ground using tape, weights, or other means to secure the poly from wind and becoming a trip hazard.

Waste Disposal and Documentation Requirements

31. Roofing waste may be disposed as non-hazardous asbestos waste, in a landfill permitted to accept non-friable, non-hazardous asbestos roofing material. If the asbestos roofing material is currently friable, or becomes friable during its removal, it shall be disposed of in a landfill permitted to accept friable asbestos waste.

It is acceptable to dispose of bagged or sealed roofing waste into open topped waste bins lined with a single layer of 6 mil poly sheeting. The Contractor shall completely enclose all roofing waste material commonly known as "burrito wrap" in the waste bin using 6 mil poly sheeting. Upon being lowered, unwrapped material shall be transferred to a closed receptacle in such a manner as to preclude the dispersion of dust. In addition to the 6 mil poly sheeting, the top of the waste bin shall be completely enclosed with a tarp which is secured to the vehicle for transport or storage onsite if left overnight. The type of material for the tarp shall meet all requirements for transport of hazardous materials.

32. The Contractor is required to provide to Owner's agent/site representative a copy of the "trip tickets" indicating the actual weight of waste material.

20.5 Vinyl Asbestos Floor Tile (VFT) Removal Requirements

Contractor shall conduct VFT and/or mastic removal within a regulated area as defined by 8 CCR 1529.

1. The doors, windows, and penetrations into the rooms shall be sealed with polyethylene. All ventilation systems shall be locked-out and sealed as critical barriers. An attached three stage decon with operational shower is required. The Scope of Work may require more chambers depending upon the project size.

   Baseboards shall be removed if necessary to access all VFT. If baseboard mastic contains asbestos, baseboards are not to be disturbed prior to start of abatement.

   Half-mask respirators, rubber boots, gloves, and disposable coveralls are to be used as a minimum for worker protection.

4. The VFT's must be double bagged in 6 mil poly bags. It is acceptable to place several

bags of VFTs into a barrel lined with a second 6 mil poly bag.

5. All VFT's and mastic must be sufficiently wetted with amended water when being lifted off the floor.

6. The mastic layer may be removed either by solvent or wet buffing with a solvent. If a solvent is used, the negative air unit exhaust shall be directed downwind as much as possible, or a sufficient length of exhaust hose will be required to prevent re-entrainment of the vapors. Any solvents used for removing mastic shall be non-toxic low odor and non-flammable. A material safety data sheet for the solvent shall be provided and subject to approval by the project manager prior to use. MSDS must match solvent being used on the current jobsite.

7. During removal of the mastic with solvent or other organic based liquid, combination respiratory cartridges (organic vapor/HEPA) shall be worn to protect against asbestos and the solvent.

8. If floors are removed after walls and ceilings, full enclosure of the walls and ceiling with poly will be required, no matter what method of tile and mastic removal is used. If floors are removed prior to walls and ceilings which will eventually be removed as asbestos containing materials, then critical barriers and splash guards are all that will be required. All surfaces and materials not being removed as asbestos containing material must be covered with poly no matter which order floors walls and ceiling are abated.

Following removal of all floor tile and mastic, the contractor shall wash the floors thoroughly using a solution of trisodium phosphate (TSP) and water. Sufficient water shall be used for final rinsing of the floor for a clean finish.

If the removal of the floor mastic is on a wood substrate (or this technique is required in the scope of work), contractor is to use a mixture of the low odor mastic removal chemical and diatomaceous earth or (equivalent) to form a paste. Mix the paste to a consistency that will still be effective on the mastic and reduce the absorption of the chemical into the wood substrate, or seepage under casework and into concrete crevasses.

No bead blasting or shot blasting is allowed to be performed on these projects.

20.6 Drywall Removal Requirements

1. The doors, windows, and penetrations into the rooms shall be sealed as critical barriers with 6-mil polyethylene. An attached three stage decon with operable shower is required. The Scope of Work may require more chambers depending upon the project size.

   Powered air purifying HEPA respirators, rubber boots, gloves, and disposable coveralls are to be used as a minimum for worker protection.

   Shut down and lock out all heating, ventilating, and air-conditioning-system (HVAC) components that are in, supply or pass through the work area. Seal all intake and exhaust vents in the work area with tape and two layers of 6-mil polyethylene within the work area (interior) and one layer of 6-mil poly on the exterior of the building. Also seal any seams in system components that pass through the work area. Remove all HVAC system filters and place in labeled 6-mil polyethylene bags for storing and eventual disposal as asbestos-contaminated waste.

4. The drywall must be double bagged and “goose-necked” in 6 mil poly bags. It is acceptable to place several “goose-necked” bags of drywall into a barrel lined with a second 6 mil poly bag that is “goose-necked”.

5. All drywall must be sufficiently wetted with amended water when being removed.

Negative pressure shall be established, maintained, and recorded. This shall be verified by using ventilation smoke tubes.

Contractor, in conjunction with the Client/Owner, shall shut down and lock out electric power to all work areas. Contractor shall provide temporary power and lighting sources, ensure safe installation (including ground faulting) of temporary power sources and equipment by complying with all applicable electrical code requirements and OSHA requirements for temporary electrical systems. Contractor shall have a certified electrician shut down and lock out electric power, and setup temporary power and lighting sources. All cost for electric supply shall be paid for by the Client/Owner.

Contractor shall have a certified plumber disconnect and cap all water and gas within the work area. Water shall be provided by the Client from a location near the work area, but not within the work area.

All non-asbestos-containing materials left in the work area shall be covered by two layers of 6-mil polyethylene sheeting. If any non-asbestos containing materials become contaminated with asbestos during removal activities these materials shall be disposed of as asbestos-containing materials by the Contractor.

A critical barrier only, negative pressure check shall be required prior to the set-up of interior containment.

Cover floors in the work area with polyethylene sheeting. Floor shall be covered with a minimum of two layers of 6-mil polyethylene sheeting. Plastic shall be sized to minimize seams. A distance of at least six (6) feet between seams is sufficient. DO NOT locate any seams at wall/floor joints. Floor sheeting shall extend at least twelve inches (12") up the sidewalls of the work area. Sheeting shall be installed in a fashion to prevent slippage between successive layers of material. A layer of 10-mil polyethylene sheeting and/or plywood will be required to protect certain flooring materials -- carpets, hardwood floors, tiles, etc. At no time will wall or ceiling surfaces be permitted to be dropped onto unprotected floors. This includes areas where the floor surfaces contain asbestos.

Cover asbestos-containing walls in the work area with polyethylene sheeting if these walls are to remain or if these walls are non-asbestos containing and will remain. Walls shall be covered with a minimum of two layers of 4-mil polyethylene sheeting. Plastic shall be sized to minimize seams. Seams shall be staggered and separated by a distance of at least six feet (6'). DO NOT locate any seams at wall/floor joints. Wall sheeting shall overlap floor sheeting by at least twelve inches (12") beyond the wall/floor joint to provide a better seal against water damage and for pressure differential maintenance. Wall sheeting shall be secured adequately to prevent it from falling away from the walls. This may require additional support/attachment when pressure differential systems are utilized.

Cover asbestos -containing ceilings in the work area with polyethylene sheeting if they are to remain or if these ceilings are non-asbestos-containing and will remain. Ceilings shall be covered with a minimum of two layers of 4 mil polyethylene sheeting. Plastic shall be sized to minimize seams. Seams shall be staggered and separated by a distance of at least six

feet (6'). DO NOT locate seams at wall/ceiling joints. Ceiling sheeting shall overlap wall sheeting by at least twelve inches (12") beyond the ceiling/wall joint to provide a better seal against water damage and for pressure differential maintenance. Ceiling sheeting shall be secured adequately to prevent it from falling away from the walls. This may require additional support/attachment when pressure differential systems are utilized.

If floor tile and drywall are to be removed within the same work area the floor tile and mastic shall be removed first, followed by the drywall removal. If the contractor wishes to submit a different removal work plan it shall be submitted prior to the beginning of the project. The PMP, Inc. Project Manager will review this work plan and respond in writing if it is accepted, or if it is accepted under condition of amendment.

Asbestos Abatement Contractor is required to remove nails, screws and/or other wall/ceiling material attachments.

Asbestos Abatement Contractor may remove studs with asbestos containing materials still attached, as long as they are to be removed, and are disposed of as asbestos-containing material.

Asbestos Abatement Contractor may not cut any sheer wall for any reason, without prior consent from the project Architect.

No damage will be permitted to studs that are to remain in place. Wall surfaces are to be peeled away, not pounded. The Contractor shall be financial responsible for any damage caused to studs.

Contractor is responsible for clean-up of all texturing and joint compound found on studs and rafter, as well as other surfaces behind, or inset into, the drywall materials.

Adhere to other requirements as stated in Sections 1-19, 21 and 22.

Following removal of all drywall, the contractor shall encapsulate the area with an encapsulate that is compatible with the reinstallation of wall and/or ceiling surfaces. The floors shall not be encapsulated unless otherwise noted in the Scope of Work, or stipulated by the PMP, Inc. Project Manager.

NOTE: All Specific Procedures and Requirements listed in Section 20 shall be reviewed by the contractor along with the Scope of Work issued for the project. If any perceived conflicts are present between the Scope of Work and these specifications or within the General Requirements specification itself, the contractor shall ask for a written interpretation from the PMP, Inc. Project Manager prior to submission of his bid. If conflicts in the “Scope of Work” and this specification, or with the General Requirements specification itself are discovered after the start of abatement, the more stringent specification and/or requirements will be enforced. The PMP, Inc. Project Manager shall make the determination as to which requirements and/or specifications are more stringent. If the materials to be removed during the project do not relate to any of the procedures in Section 20 or multiple materials exist within the work area, the contractor shall follow those procedures outlined in Sections 1-19, 21 and 22.

SECTION 21. PATENTS AND PREVAILING WAGES

21.1 Patents

Contractor shall pay all royalties and license fees required for the performance of the work. Contractor shall defend suits or claims resulting from contractor's or any subcontractor's infringement of patent rights and shall indemnify Owner and Owner’s representative from losses on account thereof.

21.2 Prevailing Wage Requirements

The asbestos abatement contractor is always fully and totally responsible for compliance with payment of prevailing wage rates pursuant to provisions of the California Labor Code, for compliance with Division 2, Part 7, Chapter 1, California Labor Code, including but not limited to Section 1776; and for compliance with California Labor Code, Section 1777.5 for all apprenticeable occupations.

SECTION 22. PERMITS AND FEES

If any permits are required to be issued for any of the Work to be performed by Contractor, Subcontractor(s) or Sub-subcontractor(s) as part of the Project, it shall be the sole responsibility of the Contractor to expeditiously obtain all such permits and any costs incurred by the Contractor in obtaining such Permits shall be included within the Contract Price.

GENERAL REQUIREMENTS FOR LEAD

PART 1: GENERAL REQUIREMENTS

1.1 SUMMARY

These specifications are designed to minimize and control potential lead hazards during demolition of construction materials that contain lead.

The primary focus of these specifications is to address the work practices and procedures that the Contractor must follow when conducting activities that may disturb lead in coatings on building surfaces.

No Contractor shall begin work that will disturb any surfaces in a manner that will either expose a worker to possible lead containing dust or create possible lead containing waste, until all required pre-construction documentation has been reviewed and written approval from The Owner has been received. Any Contractor observed conducting such activities without having written approval from THE OWNER will be instructed to stop work. Work will not be allowed to resume until the approval has been received by the Contractor.

These specifications shall apply to all work activities that are expected to disturb coatings containing lead. These activities include demolition of coated surfaces and the removal of lead coated building components.

The Contractor shall utilize engineering controls to limit the release of lead dust or debris. These engineering controls may include, but are not limited to, using wet methods, using tools with vacuum recovery systems with High Efficiency Air Particulate (HEPA) filtration, using vacuums with HEPA filtration, and the prompt cleanup of any debris produced. Dry scraping, sanding, grinding, or abrading lead-containing materials is not permitted.

1.2 REGULATORY COMPLIANCE

There are various agencies that regulate activities involving lead-containing paints and coatings. The following definitions are discussed in order to assist in the interpretation of the requirements that follow. The following is a summary list of the most important agencies and regulations that apply to the disturbance of lead and lead in coating during construction work. This list is not to be considered comprehensive. The Contractor is responsible for complying with all applicable Federal, State, and Local regulations that may apply to the specific work being conducted by the Contractor.

1.2.1 ENVIRONMENTAL PROTECTION AGENCY (EPA)

Lead: Identification of Dangerous Levels of Lead; Final Rule (40 CFR Part 745 Subpart D)

The EPA defines lead-based paint as paints and coatings that contain lead in concentrations equal to or more than one milligram per square centimeter (1 mg/cm^2), 5000 parts per million (5000 ppm), or one half of one percent (0.5%) by weight. EPA regulations apply to all housing

and child-occupied facilities built before 1978. When the term A lead-based paint is used in the context of these specifications, the term is used only to refer to paint that contains lead in concentrations equal to or greater than that defined by the EPA as lead-based paint. (This is to differentiate lead-based paint from the term A lead-containing paint as used for compliance with OSHA and Cal/OSHA.)

1.2.2 HOUSING AND URBAN DEVELOPMENT (HUD)

Requirements for Notification, Evaluation and Reduction of Lead-Based Paint Hazards in Federally Owned Residential Property and Housing Receiving Federal Assistance (24 CFR Part 35)

The HUD Rule for Federal Housing (shortened name) applies to all residential properties built before 1978 that receive Federal financial assistance. This regulation uses the same definition of lead-based paint as the EPA. The work practices and procedures described in these specifications are designed to comply with occupant and worker protection regulations as mandated by OSHA and Cal/OSHA regulations for work that disturbs lead paint. These specifications are not designed to comply with all the requirements of 24 CFR Part 35. THE OWNER may require additional practices and procedures in the scope of work for activities conducted in properties covered by the HUD Rule for Federal Housing.

1.2.3 CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)

Accreditation, Certification, and Work Practices for Lead-Based Paint and Lead Hazards (Title 17, CCR, Division 1, Chapter 8, Sections 35000-361000)

This regulation primarily applies to residential and public buildings located in California. The definition of a public building is one that is generally accessible to the public. Some aspects of this regulation, particularly those that pertain to the definition of presumed lead-based paint and the containment requirements for disturbing lead-based paint apply to all structures in California.

This CDPH regulation definition of lead-based paint is identical to the EPA/HUD definition of 1 mg/cm^2, 5000 ppm, 0.5% by weight. In addition, this regulation requires all paint on structures in California to be treated as presumed lead-based paint unless the paint is on a home built after 1978 or a school built after 1992.

The CDPH regulation differentiates between work that disturbs lead as part of renovation or maintenance work and work that disturbs lead as part of abatement work as defined in Title 17. The work practices and procedures described in these specifications are designed to comply with worker protection regulations as mandated by OSHA and Cal/OSHA regulations for work that disturbs lead as part of demolition work. These specifications are not designed to comply with the requirements for abatement as defined in the CDPH Title 17 regulation. THE OWNER may require additional practices and procedures in the scope of work for activities conducted as abatement as defined by Title 17.

1.2.4 OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (CAL/OSHA)

Lead Standard for the Construction Industry (CFR 1926.62) (8 CCR 1532.1)

This standard regulates work done by employees who may disturb lead as part of renovation or maintenance work.

The OSHA and the Cal/OSHA standards are virtually identical though Cal/OSHA adds some requirements that are not in the OSHA standard.

OSHA and Cal/OSHA regulate lead whenever lead is determined to exist in a material. When the term lead-containing paint is used in the context of these specifications, the term is used to refer to paint that contains lead in an amount equal to or above the reporting limit for the laboratory analysis or detected by an X-ray Fluorescent Analyzer (XRF).

In addition, Cal/OSHA uses the EPA/HUD/CDPH definition of lead-based paint (1 mg/cm^2, 5000 ppm, 0.5% by weight) for their pre-job notification requirements discussed in section 1.3.

The Cal/OSHA standard has additional requirements that are not in the Federal OSHA standard found in CFR 1926.62. Contractors not familiar with the California standard must familiarize themselves with the additional requirements. The following information summarizes the significant additional requirements in the Cal/OSHA standard. This summary is not meant to substitute for the Contractor reading and being familiar with the Cal/OSHA requirements.

a. The California standard requires employers to notify Cal/OSHA before employees conduct a trigger task that will disturb more than 100 square or linear feet of material that contains lead in concentrations equal to or above 1 mg/cm^2, 5000 ppm, 0.5% by weight. The notification also applies to welding or torch cutting that takes more than one hour in a shift. Trigger tasks are described in 8 CCR 1532.1 (d)(2). In brief, they include manual demolition, scraping, sanding, using HEPA-attached equipment, using heat guns to remove lead paint, welding, torch cutting, and using other more aggressive techniques. (This is a summary list and does not list all task that are considered trigger tasks.)

b. The California standard defines lead-containing paint at the Consumer Product Safety Commission's (CPSC) level of 0.06% by weight or 600 ppm for non-trigger tasks. However, both the California and Federal OSHA standards require training, personal protective equipment, and specific work practice precautions whenever employees will disturb lead in any concentration (including less than 600 ppm). Thus Cal/OSHA (like OSHA) regulates paint when it contains lead above the reporting limit for laboratory analysis or detectable by an XRF.

c. The California standard also requires CDPH lead training and certification for any supervisors or workers who are shown to be exposed to airborne lead levels above the PEL in residential or public buildings. (A public building is defined as being generally accessible to the public.)

d. The California standard uses the term a regulated area. Cal/OSHA requires the supervisor to establish a regulated area whenever workers may be exposed to airborne lead over the PEL or if they will perform A trigger tasks as defined in 8 CCR 1532.1 (d)(2).

1.3 LEAD WORK PRE-JOB NOTIFICATION REQUIREMENTS

The Contractor is responsible for complying with the Lead-Work Pre-Job Notification as specified in 8 CCR 1532.1 (p). Notification is required for this project; therefore, the Contractor must provide the notification to Cal/OSHA and provide a copy of this notification to THE OWNER as part of the Contractor's pre-work submittal package.

1.4 DOCUMENTS PROVIDED TO THE OWNER BY THE CONTRACTOR

While additional documents may be required by the scope of work for this project, at a minimum the Contractor will be required to provide THE OWNER with the following documents regarding the Contractors ability to safely disturb paint and other materials that contain lead.

1.4.1 DOCUMENTS SUBMITTED PRIOR TO THE START OF WORK

a. A written compliance plan must be provided to THE OWNER and include the following:

1. A description of equipment and materials, controls, crew size, job responsibilities, and operations and maintenance procedures for each activity in which lead is disturbed and potentially emitted.

2. A description of specific control methods (wet methods, engineering controls, etc.);

3. Technology considered in meeting the Cal/OSHA permissible exposure level (PEL);

4. Air monitoring data documenting sources of lead emissions.

5. A detailed implementation schedule for the compliance plan, including the schedule for inspections by a competent person.

6. A description of the lead work practice program which will be used to control worker exposures. This includes the use of protective work clothing, equipment, hygiene facilities and practices, and housekeeping practices.

7. A description of the steps the Contractor will take to minimize the generation of hazardous waste produced on this project. This includes but is not necessarily limited to how the contractor will separate waste streams. For example, how will the Contractor keep potentially hazardous waste such as paint chips and dust from being disposed of with other potentially non-hazardous construction materials and debris.

Note: If the Contractor is found conducting lead related work not specifically mentioned and described in the compliance plan, the work will be stopped until a compliance plan including that work is submitted, reviewed, and approved by THE OWNER.

b. The Contractor shall submit to THE OWNER copies of recent (performed within the previous 12 months or less) blood sampling and analysis test results of lead (BLL) and zinc protoporphyrin (ZPP) levels for all workers who will be performing any Trigger Tasks

with regards to lead-containing paints as defined in 8 CCR 1532.1 (d)(2).

c. The Contractor shall submit to THE OWNER copies of current medical evaluations and respiratory fit test records done in compliance with 8 CCR 1532.1 for all workers exposed to lead and/or who will wear respirators on this project. The Contractor is responsible for maintaining current documents and resubmitting copies to THE OWNER for any worker whose documents expire during the project. Any worker observed on a job site who either is not approved to conduct work by THE OWNER or has been approved but documentation pertaining to training, medical evaluation, or respiratory fit testing has expired, will be instructed to stop work until these documents are received by THE OWNER and the worker is approved to perform work that disturbs lead.

d. The Contractor shall submit to THE OWNER proof that the supervisor and workers meet the training requirements listed in 8 CCR 1532.1 (l)(2) for employees who may be exposed above the Action Level of 30 micrograms per cubic meter ($\mu g/m^3$) based on an eight-hour time-weighted average.

e. If CDPH regulations are triggered the Contractor shall submit to THE OWNER proof of current CDPH certification as a lead supervisor for the onsite competent person for all projects that include trigger tasks (as defined in 8 CCR 1532.1 (d)(2). This requirement applies whether the activities disturb lead-based paint or lead-containing paint. (Summary: the supervisor must be a CDPH Certified Lead Supervisor if the crew will conduct trigger tasks on paint containing lead.)

f. If CDPH regulations are triggered the Contractor shall submit to THE OWNER proof of current CDPH certification as lead workers for all workers who will conduct trigger tasks (as defined in 8 CCR 1532.1 (d)(2)) whenever the tasks will disturb lead-based paint as defined by EPA/HUD/CDPH.)

1.5.1 Documents That Must Be Provided to THE OWNER During the Course Work (Or Following Completion Of The Work If Applicable)

The following documents must be provided THE OWNER following completion of the physical activities associated with the project. The following documents must be received and approved by THE OWNER before the work is considered completed and payment issued.

a. The Contractor must provide the results of exposure sampling done to comply with the requirements of 8 CCR 1532.1 (d). Sample information must include (but is not restricted to) the name of the individuals wearing the samples, the individuals' Social Security Number or Company ID number, the date the samples were collected, identification by unique method of the area where the work is being performed, and identification of the work being performed. Laboratory results shall be provided to THE OWNER within 72 hours of sample collection.

b. The Contractor must provide all waste disposal documentation.

c. Local sanitation district Wastewater Discharge Permit for Surface Washers (if required).

1.5 THIRD PARTY OVERSIGHT

THE OWNER has retained the services of an independent third-party consultant to provide oversight of the project. The Contractor shall treat this third-party consultant as a designated representative of THE OWNER.

1.6 AIR SAMPLING BY THE OWNER

THE OWNER may determine it appropriate to collect air samples to evaluate the effectiveness of the Contractor's engineering controls and work practices. Air sampling may also be used to verify the effectiveness of the Contractor's containment system.

1.7 AIR SAMPLING BY THE CONTRACTOR

The Contractor is responsible for conducting exposure air sampling of the Contractor's employees that complies with the requirements of 8 CCR 1532.1 (d). Should the Contractor wishes to make use of the exceptions to air sampling stated in 8 CCR 1532.1 (d)(3)(C) & (D), the Contractor must submit the required information to THE OWNER and receive written approval from THE OWNER prior to the Contractor reducing the personal protection, containment, or engineering controls stated in this specification. In summary, prior to any actions being taken based on the results of previous sampling conducted at different job sites, THE OWNER must specifically approve the use of those results and the actions the Contractor wishes to take based on the results of that sampling.

1.8 NOTIFICATION OF EMPLOYERS OF EMPLOYEES IN ADJACENT AREAS

The Contractor is responsible for ensuring that employers of employees in areas adjacent to the work being conducted have been notified that work disturbing lead will take place. This notification is in addition to the posting of lead regulated area signs. This notification of adjacent employers is the ultimate responsibility of the Contractor but should be done in consultation with THE OWNER. In summary, this notice shall be provided to all other contractors and subcontractors in areas adjacent to the work. Those employers must be notified in advance of any upcoming work that will disturb or impact lead in a manner that may generate airborne levels of lead that could present a potential exposure to workers at or above the Permissible Exposure Limit (PEL) as defined in 8 CCR 1532.1(c).
This notice shall also provide information on the control measures being implemented and a warning that the employer's employees are to remain outside of the posted regulated areas.

1.9 PROTECTION OF ADJACENT ITEMS

The Contractor shall remove or protect items (if any) located within 20 feet of all paint disturbance areas in order to avoid contaminating those items with lead. Those items may have to be relocated or disposed of prior to the start of work. The Contractor must coordinate with THE OWNER the removal of items, the storage of those items, and the protection of items or materials left inside the work area.

1.10 PROTECTION OF ACCESS/EGRESS OF BUILDING OCCUPANTS

The Contractor is responsible for ensuring that building occupants and those in adjacent areas are not exposed to lead dust or debris as they enter or exit buildings. The Contractor shall ensure that building occupants and others in the adjacent area do not enter the lead regulated area and have a safe means of access and egress to the building.

1.11 TRAINING REQUIREMENTS

For all work that will require performing trigger tasks (as defined in 8 CCR 1532.1 (d)(2) on lead-containing or lead-based paint, the Contractor shall provide a competent person who is currently certified as a lead supervisor by CDPH. The CDPH-certified supervisor must be on site whenever work disturbing lead is being conducted. Workers conducting trigger tasks on lead-based paint do not have to be CDPH certified, unless CDPH regulations are triggered by exposure levels or creation of a lead hazard during stabilization or demolition activities. Those conducting trigger tasks or other activities disturbing lead on lead-containing paint (but not lead-based paint) must, at a minimum, meet the training requirements listed in 8 CCR 1532.1 for those workers who may be exposed above the Action Level.

1.12 SUSPENSION OF WORK

THE OWNER or its designated agents may suspend all work that disturbs lead if any controls (such as barriers) fail, if excessive amounts of debris known or suspected to contain lead are detected outside the containment, or if work is on the exterior of a structure and wind speeds are more than twenty miles per hour, or if in the judgment of THE OWNER, other factors exist that determine the work must be stopped because of the potential of lead hazards being created. For example, THE OWNER may conduct perimeter monitoring and discover that lead is being released in concentrations above 1 $\mu g/m^3$ above background levels or work area air monitoring that is above 15 $\mu g/m^3$ calculated on an eight-hour time-weighted-average. In either case, THE OWNER may suspend work until more effective containment, work practices, and engineering controls are utilized.

2.0 MATERIALS AND EQUIPMENT

2.1 FIRE RESISTANT PLASTIC SHEETING (POLY)

All plastic sheeting used on this project must be fire resistant.

2.2 CHALLENGE TESTING OF HEPA FILTRATION SYSTEMS

All HEPA equipped vacuums and pressure differential units to be used on this project during lead-containing paint operations shall be tested and meet ANSI requirements using DOP or an equivalent testing agent. This testing must take place on site prior to their use and after replacement of any HEPA filter removed from previously tested equipment. Copies of all certifications must be provided to THE OWNER prior to use of the equipment.

2.3 VACUUM-ASSISTED TOOLS

When using power tools to disturb lead, the Contractor shall only use tools that have a vacuum assisted process equipped with HEPA filtration. The Contractor must receive written approval from THE OWNER for the use of all power tools for which the Contractor feels a HEPA-vacuum assisted process is not feasible.

2.4 POWER WASHING

For the purposes of this specification, power washing is defined as: The use of a low pressure a power washer to rinse/wash stable painted or coated surfaces to remove dust, dirt, grime, and other foreign matter in preparation for re-painting. In no circumstance is this to be construed as water blasting and is not intended nor shall be used to remove lead-containing paints or coatings from surfaces. Areas of loose, peeling, cracking, or unstable coatings shall be stabilized using the appropriate methods and personnel protective equipment as specified by Cal/OSHA and CDPH regulations (if applicable), and these specifications.

If lead paint chips are removed by power washing, all water runoffs must be contained. Prior to performing power wash operations, the Contractor must determine if the local sanitation district requires a Wastewater Discharge Permit for Surface Washers. Should this permit be required, the Contractor is responsible for obtaining it, accurately completing it and adhering to the permit requirements.

2.5 PERSONAL PROTECTIVE EQUIPMENT

The Contractor shall use respirators and personal protective equipment as required by 8 CCR 1532.1 and as appropriate based on personal air monitoring results. All respirators must be NIOSH/MSHA approved.

Respirator fit test records and the respiratory protection program shall be retained on site as part of the project documentation if respiratory protection is used on this project. Disposable dust/mist respirators shall not be used.

At a minimum, half-face respirators with P-100 cartridges will be required during surface preparation where there is manual scraping or sanding.

At a minimum, the Contractor must ensure that no lead dust or debris is tracked out of the contained, regulated area. The Contractor must ensure that all those allowed into the regulated area have adequate foot coverings that ensure that they will not track contaminated material out of the area when they leave.

3.0 EXECUTION

3.1 SUMMARY

Contractors conducting lead related construction work will be evaluated on a performance standard which includes, but is not limited to, cleanliness of work area, work practices as verified by exposure monitoring, containment set up, and ultimately, the cleanup of paint chips,

dust, and debris.

Any work practice that creates paint chips, dust, or painted debris must be conducted within a regulated area as defined in 8 CCR 1532.1 and within a containment at least as stringent as described in these specifications. The containment system shall be designed and constructed to prevent visible dust or debris from escaping the work area. The regulated area shall be in compliance with the Cal/OSHA lead in construction standard found in 8 CCR 1532.1 (i)(6) and Title 17. In addition, the containment shall be designed to avoid generation of airborne lead in concentrations above 1 ug/m^3 above background levels as measured downwind at the perimeter of the work area.

3.2 COMPLIANCE WITH REQUIREMENTS FOR THE PERMISSIBLE EXPOSURE LIMIT AND ACTION LEVEL

Contractor must comply with all OSHA requirements specified for work that results in exposures over the PEL. This will include, but is not limited to, complying with requirements for training, personal protection, regulated area development, blood testing, personal air monitoring, the development of a written compliance plan, and the notification of employers in adjacent areas.

Contractors must assume the Action Level of 30 micrograms per cubic meter (ug/m^3) will be exceeded each time a new job task is conducted.

Contractors shall conduct personal air monitoring for each different work practice or activity that disturbs materials containing lead. Monitoring shall continue until all different job classifications have been shown not to expose workers to lead levels above the Action Level of 30 ug/m^3.

THE OWNER may choose to collect area air samples within the work area. These samples results may be used to generate an eight-hour, time-weighted average. The result of area samples in a lead work area should normally be far below what the workers are breathing. Therefore THE OWNER air work area air samples that result in exposures above 15 ug/m^3 will trigger a re-evaluation of the Contractor's work practices, engineering controls, and containment system.

3.2.1 PERSONAL AIR SAMPLING

The Contractor is responsible for conducting personal air monitoring during disturbance of lead-containing or lead-based paint to evaluate airborne exposures during performance of any work listed as a Trigger Task as discussed in 8 CCR 1532.1 (d) (2). This sampling shall be in accordance with Cal/OSHA regulations found in Title 8 Section 1532.1, in order to determine worker exposure to lead and evaluate the effectiveness of the Contractor's written Compliance Work Plan submitted to THE OWNER.

3.2.2 ALTERNATE WORK PLANS

The Contractor may submit alternate work plans to the Owner's suggested work practices. These alternate work plans must be approved by THE OWNER prior to their implementation.

3.3 PROHIBITED WORK PRACTICES

The following work activities are prohibited on the project:

a. Open flame burning or torching.

b Machine sanding or grinding without a tool equipped with a vacuum recovery system that includes High Efficiency Particulate Air (HEPA) filtration.

c. Un-contained hydro-blasting or high-pressure washing.

d. Abrasive blasting or sandblasting without a tool equipped with a vacuum recovery system that includes HEPA filtration or done outside of a negative pressure enclosure.

e. Heat guns operating above 1,100 degrees Fahrenheit.

f. Dry scraping (except for limited areas where electrical hazards create a higher risk than lead.)

g. Use of methylene chloride-based paint strippers.

3.4 COMPETENT PERSON

The Contractor shall have a competent person (as defined by Cal/OSHA) onsite to supervise and oversee all activities which may disturb materials containing lead. This person must be a CDPH Certified Lead Supervisor if trigger tasks will be performed as described in 8 CCR 1532.1 (d)(2). Trigger tasks include but are not limited to, manual demolition, scraping and sanding, using heat guns, power tool cleaning with or without dust collection systems, abrasive blasting, welding, cutting, torch burning, and debris clean-up.

3.5 WORK SITE PREPARATION

Preparation of the work area at the site must be completed using 6-mil polyethylene (poly) sheeting placed over floors, asphalt, concrete, soil, vegetation, and other surfaces in the immediate work area.

3.5.1 EXTERIOR WORK SITE PREPARATION

For exterior work site preparation, one layer of 6-mil poly sheeting should be placed on the ground extending at least 20 feet beyond the perimeter of surfaces included in the work. Depending on wind conditions, the poly may need to be extended further than twenty foot minimum. The poly on the ground must be adequate to catch all paint chips, dust and debris that is released by the work.

Do not anchor ladder feet on top of plastic (puncture the plastic to anchor ladders securely to ground). For all other exterior painted surfaces, protect the poly sheeting with boards to prevent puncture from falling debris, nails, etc., if necessary. Secure the plastic to the side of the building with tape, or other anchoring system, so there is no gap between the plastic and the

building. Weight all plastic sheets down using wooden two-by-fours or similar objects. If water blasting is to be performed raise edges of the plastic to create a catch basin to prevent runoff of contaminated water.

The exterior of all windows located within ten feet of any disturbance of lead must be sealed by covering them with at least one layer of six mil thick poly sheeting. All ventilation machinery within 20 feet of the disturbance should be sealed by at least one layer of six mil thick poly sheeting. Keep all windows within 20 feet of working surfaces closed, including windows of adjacent structures.

Should the disturbance of paint involve removing paint from the exterior of a window, then the Contractor must seal the inside of the window with two layers of 6 mil thick poly. There shall be no gaps between the interior wall and the material. THE OWNER may choose to waive the requirement to seal the inside of the window with two layers of poly if the disturbance of lead involves less than 5% of the painted surface area of an exterior window.

Those in adjacent areas must be kept a sufficient distance from any chance of encountering lead dust and debris. Therefore, the Contractor shall erect barrier tape at a 20-foot perimeter outside the edge of the containment area poly sheeting. This barrier tape shall comply with 8 CCR 1532.1 (m) and read WARNING, LEAD WORK AREA, POISON, NO SMOKING OR EATING.

The barrier tape must not be directly adjacent to poly sheeting used to contain dust and debris. There must be a buffer zone between the poly sheeting and the barrier tape. In summary, if the poly sheeting extends ten feet out from the surface being disturbed, the barrier tape must be placed 30 feet away from the surface being disturbed. If however, the poly sheeting extends to 20 feet out, then the barrier tape must be at least 40 feet out from the surface being disturbed. The area off the poly sheeting, but inside of the barrier tape, is still part of the regulated area but is not allowed to have any lead dust or debris present at any time.

THE OWNER recognizes that the distances described in developing the containment may not be feasible in certain situations. However, compromises in these requirements must be specifically approved by THE OWNER prior to their implementation.

The Contractor shall not conduct exterior work if wind speeds are greater than 20 miles per hour.

Work must stop and cleanup occur before rain begins.

The Contractor shall not leave debris or poly sheeting out overnight. The Contractor shall keep all debris, stored in metal barrels if hazardous waste, in a secured area until final disposal.

3.5.2 INTERIOR SITE PREPARATION

For interior work site preparation, one layer of 6-mil poly sheeting must be placed on the entire floor. However, the entire floor area need not be covered by poly for large interior areas where the disturbance of lead is limited to the perimeter of the area. If the entire floor area is not covered with poly, the poly must extend out a minimum of ten feet from those areas where lead

will be disturbed. The poly sheeting must be secured to the floor using tape so there is no gap between the floor and the wall.

If individual rooms are being worked in, seal all doorways with a primitive airlock flap to prevent contamination of other areas of the building. Post Lead Warning Signs at the building exterior near main and all secondary entryways. All ventilation systems must be turned off or sealed off in the room or interior space where lead will be disturbed. Any exceptions to this must be approved by THE OWNER. Ventilation system ducts and/or registers must be sealed with poly if they are within 20 feet of the disturbance of lead even if they are turned off. If furniture or other equipment are to remain in place, cover with a single layer of poly sheeting. All cleanup of the work area shall be performed using a HEPA vacuum and wet washing techniques.

3.6 WET WORK PRACTICES

If scraping or sanding is to be performed, this work must be done using wet methods unless a vacuum recovery system is used that includes HEPA filtration.

3.7 ABRASIVE BLASTING

Where abrasive blasting is performed by the Contractor, a negative pressure enclosure must be constructed using at a minimum six mil thick poly sheeting. The Contractor shall utilize air filtration units equipped with HEPA filtration to establish a negative pressure within the work area. Sufficient make-up air ports shall be installed with flapped openings and pre-filters to assist in providing outside air for dilution of airborne particulate. The integrity of the negative pressure enclosure shall be maintained at all times during the abrasive blasting work to prevent fugitive emissions.

3.8 OMITTED

3.9 LEAD WASTE MANAGEMENT

Waste disposal of all materials is the responsibility of the Contractor. The Contractor must plan the work in order to minimize the generation of hazardous waste during the demolition operation. The Contractor must create separate waste streams as necessary. This particularly includes the separation of any loose paint chips or flakes from other construction debris. All waste streams must be identified by the Contractor before the work begins and separated during the course of the project to minimize costs of disposal. The Contractor is responsible for all costs associated with the testing, removal, packing, loading, shipping, and disposal of lead containing waste generated during this project. (This does not include wastewater testing done to determine if power washing is permitted.)

The Contractor is required to comply with all regulations in Title 8 Section 1532.1 Lead in Construction, Cal/EPA Title 22 for waste classification and disposal.

3.9.1 LEAD WASTE TESTING

The Contractor must conduct appropriate waste stream characterization testing and/or filtering prior to disposal of waste products such as water, sand, paint chips, vacuum debris, and filters

generated during surface preparation activities. Once completed, the test analysis results must be submitted to THE OWNER for review. The Contractor is responsible for all costs associated with waste stream testing.

The Contractor may not remove or dispose of the identified materials from the job site until this review has been completed and the Contractor has been informed by THE OWNER of their concurrence that the materials have been properly tested and meet the requirements allowing the materials to be classified as non-hazardous. This process does not apply to any waste assumed or determined to meet levels of lead requiring the waste to be disposed of as hazardous waste.

3.9.2 WASTE MANIFESTS

The Contractor is responsible for obtaining and properly completing any Uniform Hazardous Waste Manifests needed for the disposal of lead containing waste. However, the Contractor SHALL NOT sign any Uniform Hazardous Waste Manifests for the Owner.

The Contractor SHALL contact THE OWNER in advance of the scheduled pick-up time and date so the waste materials can be visually inspected for proper packing. At that time the Contractor will deliver the Uniform Hazardous Waste Manifest to THE OWNER so it can be properly signed by THE OWNER.

3.10 DECONTAMINATION PROCEDURES

Decontamination procedures shall be established by the Contractor depending upon the airborne concentrations of lead, and shall, at a minimum, be in compliance with 8 CCR 1532.1 (i)(1-5). As stated in 8 1532.1 (i)(1-5), the Contractor shall assure that these decontamination facilities are used by the supervisor and workers. For work that does not exceed the PEL, the Contractor must assure that a hand-washing station is available and used by the supervisor and workers.
For work that exceeds the PEL, or is assumed to exceed the PEL, the Contractor must provide a shower facility.

3.10.1 AVOIDING CONTAMINATION OF ADJACENT AREAS BY PROPER DECONTAMINATION

The Contractor must ensure that no lead-contaminated dust or debris is tracked out of the regulated, contained area on the clothes or footwear of those allowed in the work area. Footwear worn out of the work area must have been covered by protective booties if worn in the work area. Following removal of the protective covering over the footwear, all footwear worn in the work area must be HEPA vacuumed before allowing it to be worn out of the regulated area. Footwear that can be washed before leaving the work area does not need to be covered by protective booties as long as the exterior of the footwear is thoroughly washed prior to being worn outside of the regulated area.

Should THE OWNER discover that an occupant of the regulated area leaves the regulated area without properly decontaminating, the Contractor will be required to clean the adjacent areas that in the opinion of THE OWNER may have been exposed to lead dust or debris from this

action. Failure to properly decontaminate is demonstrated by wearing protective clothing outside the regulated area that was previously worn in the area or by wearing footwear outside the regulated area that was not properly covered and/or decontaminated. The failure to adequately decontaminate will trigger the following cleaning. In all areas determined necessary by THE OWNER, the Contractor will be required to HEPA vacuum, then wet wash, then HEPA vacuum again all potentially contaminated areas and items to the satisfaction of THE OWNER. THE OWNER will not need to demonstrate the need for this cleaning by the presence of visible dust and will not need to collect settled dust samples in order to require the Contractor to implement the cleaning routine.

3.11 ENSURING EFFECTIVENESS OF CONTAINMENT

The containment system use by the Contractor must be designed to eliminate any lead dust or debris from leaving the regulated work area in an uncontrolled, uncontained fashion. Should the interior and exterior site preparation described in this section not be adequate at controlling the release of lead dust and debris, the Contractor must stop work and design a more effective containment system. The Contractor is responsible for designing an effective containment system. Should that require a different type of Containment than described in the compliance work plan provided THE OWNER, the Contractor must obtain approval from THE OWNER to implement the proposed replacement type of containment. All costs associated with developing an effective containment system are the responsibility of the Contractor.

3.11.1 WORK PRACTICES DONE TO ENSURE EFFECTIVENESS OF THE CONTAINMENT

The Contractor shall ensure the prompt cleanup of dust and debris created by the work. At a minimum, this means the work area must be cleaned of any visible dust and debris prior to any work stoppage (such as for breaks and/or lunch, or, if the containment is for an interior space, prior to the end of the work shift.)

The Contractor shall not allow significant amounts of paint chips and debris to gather on the poly sheeting and be trampled by the workers feet.

The Contractor shall ensure that at least one worker is assigned to chase down any paint chips or debris that might be blown off the containment. This is particularly necessary for any work done on the exterior of multi-story buildings.

3.11.2 WORK INVOLVING WHOLE COMPONENT REMOVAL

Prior to whole building components being removed, or demolition activities being started, loose peeling and flaking paint must first be either removed from the component surfaces or stabilized. Any paint flakes generated during this work must be separated into appropriate waste streams and handled as a hazardous waste, or as deemed appropriate based on results of proper analytical testing results.

3.11.3 AIR SAMPLING DONE TO ASSURE EFFECTIVENESS OF THE CONTAINMENT

The Contractor should design engineering controls and barriers in order to ensure that the work does not generate an airborne release of lead more than 1 ug/m^3 above background levels as

measured by THE OWNER at the perimeter of the work.

THE OWNER may also choose to collect area air samples within the regulated area. Should these samples indicate an airborne lead level that is more than half of the Action Level (15 ug/m^3 as determined by an eight-hour time-weighted average), the Contractor shall change the engineering controls and/or work practices in order to ensure that future area air samples results drop below 15 ug/m^3.

3.12 SUBMITTAL REQUIREMENTS

The following documents shall be provided to THE OWNER prior to, during, and at the completion of the work. Additional documents may be required by THE OWNER. This form is developed for the convenience of the Contractor and does not necessarily represent all the documentation needed for all jobs.

3.12.1 LEAD-RELATED WORK PRE-CONSTRUCTION SUBMITTALS

1. Current Training Records for Lead

   A. Lead-Related Construction Training
      Compliance with 8 CCR 1532.1 (l)(2) for all supervisors and workers

   B. Lead-Related Construction Certification by CDPH
      Certification as specified by 8 CCR 1532.1 (l)(3) if required by these specifications or by project conditions.

Summary of specification requirements: All supervisors/workers must meet Cal/OSHA training requirements for those exposed over the Action Level. Supervisors must be CDPH certified as Lead Supervisors if they will supervise the implementation of trigger tasks on lead-containing paint.

Workers do not have to be CDPH Certified Lead Workers unless CDPH regulations are triggered. The intent of the supervisor being CDPH certified is to assure the contractor supervisor has sufficient experience to manage a project of this size and complexity.

2. Written Compliance Plan

3. Written Respiratory Protection Program

4. Current Worker Related Documentation

   A. Copies of Recent BLL and ZPP Analysis Reports for Workers (Performed Within Previous 12 Months)

   B. Medical Evaluation Stating each Employee is Cleared for Respirator Use (Performed Within the Previous 12 Months)

   C. Respiratory Fit Tests for Each Employee (Current by OSHA and Cal/OSHA

Standards)

5. Written Notification to Cal/OSHA to comply with 8 CCR 1532.1 (p) Pre-Work Job Notification

The following documents shall be provided to THE OWNER prior to, during, and at the completion of the work. Additional documents may be required by THE OWNER. This form is developed for the convenience of the Contractor and does not necessarily represent all the documentation needed for all jobs.

3.12.2 LEAD-RELATED INTERIM CONSTRUCTION SUBMITTALS

1. Waste Stream Characterization Testing Results (prior to removal of waste from the site and generated during work impacting materials containing lead. This does not include whole architectural components.)

2. Exposure Assessment (Air Monitoring) Results of Employees Performing Trigger Tasks (Within 72 Hours of Sample Collection)

3. DOP Testing Documentation

4. Worker Documentation for New Workers Assigned to the Project or Workers with Documentation on File Which Expired During the Project.

The following documents shall be provided to THE OWNER prior to, during, and at the completion of the work. Additional documents may be required by THE OWNER. This form is developed for the convenience of the Contractor and does not necessarily represent all the documentation needed for all jobs.

3.12.3 LEAD-RELATED POST CONSTRUCTION SUBMITTALS

Contractor shall provide the following post-construction submittals to THE OWNER through the designated channels within thirty (30) days of completion of lead-related work.

1. Completed Uniform Hazardous Waste forms for lead waste disposal (if applicable with reference in the final letter that all waste forms have been submitted to the Owner through proper channels).

2. Letter stating that all documentation has been submitted to THE OWNER through proper channels or stating the Contractor and their sub-contractors did not generate lead waste during the performance of their work.

Note: Any item on this list submitted during the course of the project and received by THE OWNER will not need to be submitted again, unless specifically requested.

OTHER HAZARDOUS MATERIALS SPECIFCATIONS

SECTION I - DEFINITIONS

Abatement - Procedures beyond a special operations and maintenance program to control fiber release from PCB-containing materials. Includes removal, encapsulation, enclosure, repair.

ACGIH - American Conference of Governmental Industrial Hygienists

AIHA - American Industrial Hygiene Association

Air Filtration Device - A portable exhaust system equipped with HEPA filtration and capable of maintaining a constant low velocity air flow into contaminated areas from adjacent uncontaminated areas. At a minimum, the air intake for the air filtration device, must have a pre-filter on it which can be changed within the containment area.

Airlock - A system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area. The airlock shall consist of a minimum of two curtained Z-flap doorways separated by a distance of at least three (3) feet such that one passes through one doorway into the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, thereby preventing flow-through contamination.

Air Monitoring - The process of measuring the fiber content of a known volume of air collected during a specific period of time. The procedure normally utilized for asbestos follows the NIOSH Standard Analytical Method for Asbestos in Air Method 7400. For clearance air monitoring, transmission electron microscopy methods may be utilized for detection of smaller fibers and specific fiber identification.

Air Sampling Professional - The professional contracted or employed by the Owner to supervise and/or conduct air monitoring and analysis schemes. The air sampling professional must be a Cal/OSHA Certified Asbestos Consultant or Certified Site Surveillance Technician. This individual shall not be affiliated in any way other with the contractor performing the abatement work.

Ambient Air - The air outside buildings and structures or the air as it normally exists in a space prior to abatement.

Amended Water - Water to which a surfactant has been added.

ANSI - American National Standards Institute

Approval/Acceptance - A written means of approving/accepting a product, containment set-up, work practice. Approval/Acceptance by PMP, Inc. Project Manager may be given verbally, if followed in written format. Failure of PMP, Inc. Project Manager to address an issue either verbally or in writing does not imply Approval/Acceptance.

Asbestos - Means the asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite grunerite (amosite), anthophyllite, actinolite, and tremolite.

Project Manager - An individual who is qualified by virtue of experience and education, designated as the Owner's representative and responsible for overseeing the abatement portion of the project. This person is generally the same as the PMP, Inc. Project Manager.

ASTM - American Society for Testing and Materials

Authorized Visitor - The Owner (and any designated representative) and any representative of a regulatory or other agency having jurisdiction over the project.

Bidder - A duly licensed and accredited asbestos contractor who has submitted a bid. If bid walk is mandatory, bidder must attend the walk-in order for bid to be considered responsive.

Cal/OSHA - California Division of Occupational Safety and Health. Acronym of DOSH is interchangeable with this term.

Certified Industrial Hygienist (CIH) - An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.

Cleaning Barriers - Cleaning barriers are used in addition to critical barriers and are primarily to aid in the decontamination of the area after the completion of asbestos removal work. Cleaning barriers are normally comprised of plastic sheeting placed over non-asbestos-containing surfaces (e.g. walls, floors, ceilings, casework, etc.), and asbestos-containing surfaces not scheduled for removal, in the regulated area.

Clean Room - An uncontaminated area or room which is a part of the worker decontamination enclosure system with provisions for storage of workers' street clothes and clean protective equipment. Also, the term includes uncontaminated area or room of a Waste Transfer Airlock.

Competent Person - The Contractor's employee who meets the requirements of and is responsible for the activities of the Competent Person as described in Title 8 CCR 1529. The includes but is not limited to an individual who has current AHERA Contractor/Supervisor accreditation and has the responsibility and authority to ensure that the Contractor's employees comply with the contract documents and all relevant Cal/OSHA regulations.

Containment - The temporary isolation of the work area from the rest of the building to prevent escape of asbestos fibers.

Contractor - The Contractor is the person or entity identified as such in the Contract Documents; references to "Contractor" include the Contractor's authorized representative.

Critical Barrier - Critical Barriers used to restrict water and air flow. Critical Barriers are the barriers placed over openings in the walls and ceilings of a work area to ensure that airborne fibers cannot escape the work area via these openings. The Contractor will construct impermeable barriers at all exits or openings, including doorways, duct chases, mechanical shafts, elevator shafts, floor openings, drains, and the like, so that all possible exit or entrance

routes are effectively barricaded and sealed. Unless otherwise specified in the Contract documents, critical barriers shall be constructed of at least one layer of 6-mil thick poly.

Critical Barrier Negative Pressure Test - Required test for negative pressure with only critical barriers and air filtration units installed. This test must be conducted prior to the installation of cleaning barriers but may be conducted with or without the decontamination unit in place.

Curtained Doorway, Z-Flapped - A device to allow ingress or egress from one room to another while permitting minimal air movement between spaces (such as the various rooms of the decontamination chamber). Each Curtained Doorway will consist of three sheets of poly. The first barrier will be a sheet of poly covering the entire passage and taped to the ceiling, walls, and floor. This sheet will be slit vertically in order for the workers to pass through it. Another sheet of poly will cover the first sheet but be taped only to the ceiling (or top of the first barrier) and down one wall. The third sheet of poly will be placed on the opposite side of the slit poly from the second sheet. The third sheet of poly will be attached in a similar manner as the second sheet except the wall attachment will be to the opposite wall. Each barrier must be weighted at the bottom in order to ensure that it will lay flat against the slit sheet opening should the negative pressure system fail. Please see diagram:

Other designs are permissible, if approved by the PMP, Inc. onsite project manager.

Decontamination Enclosure System - (Also known as Decon or Waste Transfer Decon) A series of connected rooms designed for the decontamination of workers and equipment that is separated from the work area and from each other by z-flapped curtained doorways. This unit shall be constructed with at least two layers of six-mil poly for the floors, walls, and ceiling. The floor of the dirty room shall consist of two layers of six-mil poly plus a third layer of poly, four-mil or thicker, to be used as a removable drop layer. Drop layer is to be removed as needed, but not less than daily. All decontamination enclosure systems used for worker entry and exit shall be equipped with a shower. At no time shall z-flaps of Decontaminations Enclosure System chambers be taped, held or otherwise blocked open.

DOP - Dioctyl phthalate particles which are normally used as an agent for testing the efficiency of HEPA filters.

Demolition - The wrecking or taking out of any load-supporting structural member, casework, items or surfaces of a facility together with any related handling operations and disposal.

Dust or Debris - Material visible to the PMP, Inc. Project Manager. Dust and debris may be contaminated with asbestos, and may affect the asbestos work practices, containment or clearance air samples required on this project, whether contaminated with asbestos or not.

Encapsulant, Bridging/Penetrating - A liquid material which can be applied to asbestos-containing material to control the possible release of asbestos fibers from a material either by creating a membrane over the surface (bridging encapsulant) or by penetrating the material and binding its components together (penetrating encapsulant).

Encapsulant, Lock-down - A liquid product designed to mist the air within a contained area after the containment has passed visual clearance by the PMP, Inc. Project Manager. Lock-down

encapsulant is designed to bind asbestos fibers together and to create a tacky surface causing non-visible asbestos fibers, settling out of the air, to adhere to containment poly.

U.S. EPA - U.S. Environmental Protection Agency

Equipment Decontamination Enclosure System - That portion of a decontamination enclosure system designed for controlled transfer of materials and equipment into or out of the work area, consisting of a clean room, washroom and holding area.

Equipment Room - A contaminated area or room which is part of the worker/equipment decontamination enclosure system with provisions for storage of contaminated clothing and equipment.

Exterior of Containment HEPA Filtered Pressure Differential Unit - An air-purifying unit positioned outside, rather than inside the regulated work area. The face, or filter portion of the unit is integrated within the work area, and the remainder of the unit (housing, wheels, rivets, control panel, etc.) is located outside of the work area. This allows filters on the air intake to be changed from within the regulated area but access to the machine itself is available to those outside the area. Pressure differential units which pass DOP testing across the HEPA filter, but fail at rivets, control panels, wheels, etc. may be used in this fashion as long as the failure point of the unit can remain on the exterior of containment while the face of the unit and filters are inside containment.

Facility - Any institutional, commercial, or industrial structure, installation, or building.

Facility Component - Any item (pipe, duct, boiler, tank, reactor, turbine, furnace, etc.) at or in a facility, any portion of a facility or any structural member in or at a facility.

Federal OSHA or OSHA - Federal Occupational Safety and Health Administration.

Fixed object - A piece of equipment or furniture in the work area which cannot be removed, or will not be removed by Owner's decision, from the work area.

HVAC - Heating, ventilation, and air conditioning system.

HEPA Filter - A high efficiency particulate air filter capable of removing particles 0.3 microns in diameter from an air stream with 99.97% efficiency.

HEPA Vacuum - A vacuum system equipped with HEPA filtration.

PMP Project Manager - An individual, employed by (or subcontracted to) PMP Environmental Consulting, Inc., who is qualified by virtue of experience and education, designated as the Owner's representative and responsible for overseeing the abatement, and/or other activities.

Holding Area - A clean space where clean supplies and equipment are stored before being placed into containment. Also, a contaminated space, adjacent to a shower or equipment washing chamber, where dirty equipment or packaged waste is stored prior to removal from containment.

Lock-down - To mist the air and to wet surfaces with an agent designed to bind asbestos fibers together and to create a tacky surface causing non-visible asbestos fibers, settling out of the air, to adhere to containment poly.

Magnehelic Gauge - Instrument for measuring the static air-pressure differential across a barrier.

Manometer - See "Magnehelic gauge". This project requires at least one properly calibrated and fully functioning recording manometer.

Mil - An abbreviation for millimeter. Generally used when referring to the thickness of plastic (poly) sheeting used to contain the regulated area.

Mini-Enclosures - Mini-enclosures may be used where glovebag setups are not feasible. The use of them must be approved by the PMP, Inc. Project Manager. Mini-enclosures shall be constructed of six-mil polyethylene (attached with tape and/or glue to walls and floors) and shall be small enough for a maximum of two workers who can enter the enclosure one time, complete the abatement exercise, pass out the containerized debris and exit. The workers shall have available a change room contiguous to the work area where they can remove their coveralls prior to leaving the area.

Monitoring - May include:
a) Visual inspection for the presence of visible emissions; or
b) Air monitoring performed in accordance with accepted methods.
c) Collecting core samples of encapsulated or bridged materials.
d) Collecting other bulk samples during and following abatement.
e) Sampling substrata following abatement.
Inspection of abatement contractor's, and contractor's employees, work practices for compliance to these and other specifications and applicable regulations.

NVLAP - National Voluntary Laboratory Accreditation Program.

NESHAP - The National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61, Nov. 20, 1990)

NIOSH - The National Institute for Occupational Safety and Health

Owner - The Owner includes the individual or entity that owns the property and, unless otherwise stated, the Owner's authorized representatives, including the PMP, Inc. Project Manager, the Owner's Board of Trustees and the Owner's officers, employees, agents and representatives.

Poly - Polyethylene sheeting.

Pre-start Meeting - Meeting held before the beginning of the project in which final details of the project are discussed and Contractor provides Project Monitor with pre-job submittal packet.

Regulated Area - An area established by a contractor to demarcate areas where the contractor's employees may conduct Class 1, 2, or 3 work as described in 8 CCR 1529 or airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the permissible exposure limit. Additionally, "regulated area" means any measure used to restrict access to an area where personnel impacting asbestos-containing materials are required to wear respiratory protection and/or protective clothing by the project specifications, or applicable regulations, regardless of airborne asbestos concentration levels.

Regulations - shall include all relevant federal, state, and local regulations including but not limited to:

a. U.S. Environmental Protection Agency Regulations for Asbestos (Title 40, Code of Federal Regulations, Part 61, Subparts A & B)
b. Title 8, Chapter 4, Subchapters 1 through 21, California Administrative Code, General Industry Safety orders, Section 5208 "Asbestos" or the applicable sections of the Federal Asbestos Regulations. Cal/OSHA Construction Safety Orders, Section 1529.
c. "Asbestos Hazard Emergency Response Act", U. S. Environmental Protection Agency, 40 CFR, Part 763. Final Rule and Notice.
d. Applicable local county Air Pollution Control District and Air Quality Management District or other local NESHAPs Enforcement.

Removal - The stripping of any asbestos-containing materials from surfaces, substrates, or components of a facility. As per various regulations, the ground is considered a substrate.

Renovation - Altering in any way one or more facility components.

Scope of Work - Job specific information and specifications used in combination with these Asbestos General
Requirements. If conflicts exist between the Scope of Work and these specifications, the stricter requirement will be enforced unless the conflict is specifically addressed in writing in the Scope of Work for this project.

Shower Room - A room between the clean room and the equipment room in the decontamination enclosure with hot and cold or warm running water controllable at the tap and suitably arranged for complete showering during decontamination. The shower room must be equipped with an overflow pan to contain water splashed, leaked or spilled out of the shower unit.

Staging Area - The secured area outside of containment where clean equipment and supplies are stored. Waste must not be stored within the staging area unless placed within an additional lockable container or area approved by the PMP, Inc. Project Manager.

Strip - To take off friable asbestos materials from any part of a facility.

Structural Member - Any load-supporting member of a facility, such as beams and load-supporting walls or any non-load-supporting member, such as ceilings and non-load supporting walls.

Submittals - Pre, in-progress and post job documents submitted by contractor to Owner's representative as indicated in General Requirements and Bidding Requirements.

Surfactant - A chemical wetting agent added to water to improve penetration.

Visible Emissions - Any emissions, whether containing particulate or not, that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

Waste Load-out/Transfer System - A decontamination system utilized for transferring containerized waste from inside to outside of the work area. A series of three connected rooms used for the load-out of asbestos-containing materials that have been properly containerized. The waste loadout chamber system shall normally consist of three connected chambers adjacent to the work area. Each chamber shall be constructed with at least two layers of six-mil thick poly for the floors, walls, and ceiling. The chamber located closest to the work area is known as the dirty chamber, and in addition to the two layers of six-mil thick poly on the floor, shall also have a third layer of poly, four-mil or thicker, to be used as a removable drop layer. The drop layer is to be removed as needed but at least daily. The chamber located closest to the outside the work area is known as the clean chamber. See Section 15 for proper use of waste Load-out/Transfer System.

Wet cleaning - The process of eliminating asbestos contamination and visible dust and debris from building surfaces and objects by using cloths, mops, or other utensils which have been dampened with water and afterwards thoroughly decontaminating them or disposing of them as asbestos contaminated waste.

Work area - Designated rooms, spaces, or areas of the project in which asbestos abatement actions are to be undertaken or which may become contaminated as a result of such abatement actions. A contained work area or temporary enclosure is a work area that is isolated from the rest of the facility using critical barriers and cleaning barriers, a decontamination system, and additional means of signs and barriers to reduce access by unauthorized persons. The work area includes all decontamination chambers, waste transfer system and the abatement area. A non-contained work area is an isolated or controlled-access work area which has not had poly installed nor been equipped with a decontamination enclosure system.

Worker - A person who successfully completed an initial U.S. EPA and/or state-approved four-day AHERA-accreditation course and who has maintained that training through approved annual refresher training, and possesses current and valid AHERA-accreditation documentation as a AHERA-accredited asbestos worker.

SECTION II - POLYCHLORINATED BIPHENYLS (PCB's)

2.1 PCB Light Ballasts

The Contractor may be instructed to remove light fixtures which contain light ballasts during demolition/ renovation activities specified in the contract documents. These light ballasts typically contain PCBs in the oil used as coolant and lubricant. Any ballast containing PCBs is to be considered a "Hazardous Waste", and the Contractor is responsible for ensuring personnel who perform PCB related work (inspection, removal, clean-up) are trained and qualified to do so. All workers must also follow current OSHA regulations including 29 CFR 1910.120 and 8 CCR 5192, as well as other applicable federal, state, and local laws and regulations.

All light ballasts manufactured through 1978 are magnetic ballasts which contain PCBs. Installation of ballasts manufactured prior to 1978 continued for several more years. As a result, it can be expected that any building constructed before 1980 which has not had a complete lighting retrofit is likely to have PCB containing ballasts. Therefore, unless the ballast is electronic (this type is PCB free), determined by testing not to contain PCBs, or the manufacturers label on the ballast states "No PCBs", it is assumed all light ballasts on this site contain PCB's, and must therefore be handled as a hazardous waste by the Contractor. The Contractor may have other options for disposal of any light ballasts found not to contain PCB's.

Light Ballast Inspection

Contractor should disconnect all power and de-energize all electrical equipment to be impacted prior to performing inspection of electrical devices scheduled for removal or replacement. This de-energizing should be performed by or under the supervision of a licensed electrician. Contractor shall inspect each ballast prior to its removal to determine if the ballast is leaking, if oily residue is present on the exterior of the ballast, or the ballast has been damaged resulting in a leak. Upon discovering and prior to removal of any oil coated, leaking, or damaged ballast Contractor shall contact Owner's representative to discuss work procedures, waste requirements, etc.

Handling Work Practices of Undamaged Light Ballasts

Handling of ballasts shall be consistent with existing ballast conditions. While a ballast may not initially indicate any damage or leakage to be present, it may become damaged or begin to leak for any number of reasons during the removal and handling process. Any skin contact will probably constitute overexposure to PCBs since they are easily absorbed through the skin. It is recommended any personnel who will perform PCB related work should at a minimum wear protective clothing, including chemically resistant gloves, goggles, boots, and disposable coveralls.

Handling Work Practices of Damaged Light Ballasts

Handling of damaged ballasts shall be performed in a manner consistent with existing and current federal, state, and local laws and regulations. Clean-up of spills, or contaminated surfaces will require the use of specifically trained and properly protected personnel utilizing state of the art work practices, removal equipment, and materials. The Owner's representative must be notified prior to the performance of this type of work.

2.2 PCB Containing Waste

All PCB containing light ballasts, removed by the Contractor, shall be placed in leak tight approved containers (metal barrels) until they are removed from the site by a waste transporter permitted to haul hazardous materials. Barrels must not be loaded more than their approved capacity. For most barrels this is 750 pounds. No other materials except, an enough absorbent packing material, shall be included with the light ballasts.

The Contractor should contact their waste hauler prior to the start of work for information pertaining to recommendations, or the waste haulers stated requirements, for packing PCB containing ballasts. However, at a minimum, the absorbent packing material should be added to the bottom of the waste barrel prior to the first ballast. Absorbent packing material should then be added intermittently as necessary to encase the ballasts as the waste barrel is being filled. When the waste barrel is filled, or no more light ballasts will be added, additional absorbent packing material should be added to completely cover the ballasts and the container then sealed.

Contractor is also responsible for appropriate labeling of waste barrels and securing of lids to meet federal and/or state requirements while being stored on the site.

All leaking or damaged ballasts must be handled in accordance with federal and state disposal requirements and shall be separated from undamaged ballasts in preparation for incineration at an appropriately licensed facility.

The Contractor is responsible for all costs associated with the removal, packing, loading, shipping, and disposal of each barrel of waste generated during this project. The Contractor is also responsible for obtaining and properly completing any Uniform Hazardous Waste Manifests needed for the disposal of PCB waste. However, the Contractor SHALL NOT sign any Uniform Hazardous Waste Manifests for the Owner.

2.3 Bulk PCB Materials

For projects involving buildings constructed or remodeled between 1950 and 1979, it is important to ensure that the PCB abatement activities are conducted safely and in accordance with Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA).

2.4 Personal Protective Equipment (PPE)

Chemical-resistant gloves made of nitrile butadiene rubber and Tyvek coveralls.

All workers should wear safety glasses or protective goggles.

Respirators with combination organic vapor and HEPA cartridges when working with dust generating activities or solvents.

Worker hygiene - Eating, drinking, and smoking should be prohibited in the work site. Showers and separate changing areas for work clothing and everyday clothing should be provided for work involving dust generation.

2.5 Containment and removal
Containment area must be constructed using 4-6 mil poly to minimize the spread of PCB dust to other surrounding areas.

Contractor must regularly clean the work area, including tools and machinery, with a HEPA vacuum and mopping, or hand wiping, to remove dust.

The HVAC system should be shut down and remain off until PCB abatement is complete. The abatement areas should be isolated from the HVAC system always.

2.6 Visual Inspection and Clearance
A third-party consultant shall conduct a visual inspection of the containment area to determine if additional decontamination is warranted or if the area is ready for clearance.

PMP, Inc. will collect wipe samples from surfaces within the containment after decontamination is complete. A sufficient number of wipe samples will be collected to ensure that the area is fully decontaminated. The number of samples and location will be determined in accordance with 40 CFR 761 Subpart O or Subpart P. A minimum of three samples shall be collected. These samples will be collected on horizontal surfaces.

2.7 Disposal
The contractor shall properly store removed PCB-contaminated materials at the place of removal. Materials should be placed in tightly-locking, stable containers (e.g., fiber drums or polyethylene buckets with polyethylene lining).

No person may avoid any provision specifying a PCB concentration by diluting the PCBs, unless otherwise specifically provided.

All PCB waste must be characterized/profiled to determine the proper disposal requirements and waste facility.

When caulk with PCB concentrations equal to or greater than 50 parts per million (ppm) is removed along with any attached PCB containing building materials, it must all be disposed of in accordance with the methods provided in 40 CFR 761.62

SECTION III - UNIVERSAL WASTE LAMP HANDLING PROCEDURES

The Contractor may be instructed to remove light fixtures which contain lamps which are designated as “Universal Waste” during demolition/renovation activities specified in the contract documents. If the Contractor is instructed to remove such fixtures the following handling procedures shall be followed.

3.1 Universal Wastes
Universal wastes are hazardous wastes that are more common and pose a lower risk to people and the environment than other hazardous wastes. Federal and State regulations identify

universal wastes. The regulations, called the “Universal Waste Rule,” are in the California Code of Regulations (CCR), title 22, division 4.5, chapter 23.

3.2 Universal Waste Lamps

Universal Waste Lamp, also referred to as “lamp” is defined as the bulb or tube portion of an electric lighting device. A lamp is specifically designed to produce radiant energy, most often in the ultraviolet, visible, and infra-red regions of the electromagnetic spectrum. Examples of common universal waste electric lamps include, but are not limited to, fluorescent, high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps. Any lamp which is not spent and has been designated to be reused is not classified as a waste and does not meet the requirements of a hazardous waste or a universal waste.

3.3 Mercury-added lamps (effective February 9, 2004)

Fluorescent tubes and several other types of lamps (not incandescent light bulbs) contain a small amount of mercury that is necessary for their operation. Currently, most fluorescent lamps contain enough mercury to be a hazardous waste. Metallic mercury is liquid at room temperature but can easily evaporate from liquid to vapor. Mercury vapor is colorless and odorless. Fluorescent bulbs contain mostly mercury vapor but can contain small amounts of liquid mercury.

3.4 Universal Waste Lamp Disposal

Spent lamps typically contain concentrations of mercury exceeding the established Total Threshold Limit Concentration and/or the Soluble Threshold Limit Concentration values. Therefore, these lamps must be sent to an authorized recycle facility, or to a universal waste consolidator for shipment to an authorized recycling facility.

At a minimum the lamps must be packaged in boxes/packages/containers which are structurally sound, adequate to prevent breakage, and compatible with the content of the lamps. These packages must remain closed and be free of damage which could cause leakage under reasonably foreseeable conditions.

Each container shall be labeled or marked clearly with one of the following phrases: “Universal Waste– Lamp(s),” or “Waste Lamp(s).” or “Used Lamp(s)”.

Documentation in the form of a log, invoice, manifest, bill of lading or other shipping document is required to be submitted to PMP, Inc. for each shipment of waste from the project site. This documentation shall include name and address of generator, address of site waste is generated on, quantity of lamps to be shipped, date of shipment, name and address of hauler, and name and address of waste facility receiving the waste.

3.5 Hazardous Waste Designation

Any lamp which is not designated for recycling or continued use in a different fixture for which the lamp is manufactured for use in must be handled, managed, and disposed of as a hazardous waste in accordance with Cal/EPA Title 22. Since all spent lamps are required to be recycled, the Owner will not approve of the disposal of lamps as hazardous without consultation and review of the specific circumstances which warrant this change in designation.

3.6 Additional Waste Management Requirements

The Contractor is responsible for managing lamps in a manner which prevents release of any universal waste or component of a universal waste to the environment. The Contractor is also responsible for the immediate clean-up of materials (mercury or other hazardous constituents) released by a lamp broken during removal, or otherwise damaged while being handled, into a container, or containers, designed to accommodate the resulting waste and its contents.

The Contractor is responsible for training employees in proper handling, packaging, storing, and labeling the universal waste, as well as, how to respond to releases (66273.13). This may be accomplished by providing employees written instructions or posting these instructions in the area where the universal waste lamps are being stored.

The Contractor is responsible for all costs associated with the removal, packing, loading, shipping, clean up, and disposal of hazardous materials removed during this project, and any waste generated due to breakage during this project. The Contractor is also responsible for obtaining and properly completing any Uniform Hazardous Waste Manifests needed for the disposal of lamp waste. However, the Contractor SHALL NOT sign any Uniform Hazardous Waste Manifests for the Owner.

It SHALL be the responsibility of the Contractor to contact the Owner in advance of the scheduled pick-up time and date, so the waste materials can be visually inspected for proper packing, and to have the Uniform Hazardous Waste Manifest properly signed by an Owner representative.

SECTION IV - MERCURY

4.1 Mercury Switches

Thermostat switches that contain mercury are considered a hazardous waste if removed and disposed. Where the contract requires removal of thermostat switches, the Contractor SHALL follow all requirements for packaging and disposal of these mercury containing wastes.

4.2 Mercury Flooring

In the 1960's, many companies began manufacturing and installing a thin layer of synthetic, polyurethane flooring on top of concrete sub-floors, to provide a resilient and rubberlike surface. Typically, proprietary liquid polyurethane was poured on top of the sub-floor and organo-mercuric salts were incorporated to catalyze the polymerization/curing process. Mercury-containing polyurethane floors were widely installed in school gymnasiums and sports tracks across the US, until being discontinued in the mid-1980s due to concerns of their emissions of mercury vapor.

Mercury is a bio-accumulative toxic chemical. Bioaccumulation occurs when mercury is absorbed into your body at a faster rate than which the mercury can be lost by catabolism and excretion. At room temperature, this heavy metal is liquid that readily emits vapor, and mercury vapor is a neurotoxin. The United States Protection Agency has set a minimum risk level of 0.3 micrograms of mercury vapor per cubic meter of air.

4.3 Containment

The doors, windows, and penetrations into the rooms shall be sealed with 6 mil polyethylene. All ventilation systems shall be locked-out and sealed as critical barriers. An attached three

stage decon with operational shower is required. The Scope of Work may require more chambers depending upon the project size.

Walls shall be covered with a minimum of two layers of 4-mil polyethylene sheeting. Plastic shall be sized to minimize seams. Seams shall be staggered and separated by a distance of at least six feet (6'). DO NOT locate any seams at wall/floor joints. Wall sheeting shall overlap floor sheeting by at least twelve inches (12") beyond the wall/floor joint to provide a better seal against water damage and for pressure differential maintenance. Wall sheeting shall be secured adequately to prevent it from falling away from the walls.

HEPA filters scrubbed the air and exhausting to the exterior of the building. Charcoal pre-filter is required for all mercury work.

Signage prevented unauthorized individuals from entering the containment areas must be posted at all entrances/exits.

4.4 Training
All contractors entering the containment area are required to complete a 40-hour hazwoper training.

4.5 Personal Protective Equipment (PPE)
Personal Protective Equipment shall consist of full body coveralls, gloves, face shields and/or glasses to prevent skin and eye contact, and a minimum of half face respirators with mercury cartridges.

It should be noted that mercury flooring cannot be cleaned using a HEPA vacuum or brooms (sweeping). These methods will cause the mercury to spread and increase mercury levels in the air. A special vacuum cleaner designed to collect mercury should be used.

4.6 Removal and Clearance
All removal work must be done using proper dust control techniques. No visible emission shall be seen in containment.

Daily clean-up of loose dust and debris is mandatory before breaks and leaving the site.

Final visual inspection will be conducted at the end of the abatement process.

To clear the area of mercury contamination, a Jerome Mercury Vapor Analyzer must be used to test floors and other surface areas for mercury contamination. The area will be cleared when concentrations are found to be below 0.3 $\mu g/m^3$ for mercury vapor or below the established baseline prior to the start of work.

SECTION V - SMOKE DETECTORS WHICH MAY CONTAIN A RADIOACTIVE ELEMENT

The Contractor shall be responsible for the removal of all smoke detectors which may contain a radioactive element, which may be present in the building. These types of detectors are easily identified by reviewing the label which is usually found on the back of the detector. Older units may display the international radiation symbol (three bladed propeller) and the radioactive

content. Newer units state the radioactive content and their Nuclear Regulatory Agency (NRC) license number.

The Contractor shall be responsible for contacting the manufacturer of any smoke detector with a radioactive element present to determine their return policies. The California Department of Toxic Substance Control (DTSC) has stated that it is a condition of the manufacturers NRC license that they must accept returned units for disposal. The Contractor shall be responsible for all costs associated with removing, packaging, and shipping of the detectors in compliance with the manufacturers policies and procedures.

Contractor shall submit to the Owner a letter from the manufacturer which includes the number of units received, date received, and acceptance of the shipment for disposal by that manufacturer.

SECTION VI - FREON AND REFRIGERANT RECOVERY

40 CFR 273.13 (d)(2) Waste Management (11/24/04) States refrigerant gas recovery must be conducted by a licensed refrigerant recovery technician. All Contractors are liable for the payment of any/all fines issued to the client for improper release of refrigerants to the atmosphere. These fines can be $10,000 or more, per release.

SECTION VII - SILICA

It should be noted that silica is not a hazardous material, but that regulation 8 CCR 1532.3 (Cal/OSHA Construction) and 8 CCR 5204 (General Industry) regarding the disturbance of silica containing materials (cement containing materials, stone, rock, gypsum, false ceiling panels, etc.) must be conducted per the requirements of the regulation enforce at the time of the work.

7.1 Specified Exposure Control Methods

The following control methods and corresponding work practices, engineering controls and personal protective equipment use must be followed, or improved on, by all contractors handling materials that may contain crystalline silica – whether the activity of construction based or a general industry activity (Table 1 Copied from Cal/OSHA):

7.2 Table 1 - Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica

		Required respiratory	
		protection and minimum	
		assigned protection factor	
Equipment/task	*Engineering and work practice control methods*	*(APF)*	
		≤ 4 hours/ shift	*> 4 hours/ shift*
(i) Stationary masonry saws	Use saw equipped with integrated water delivery system that	None	None.
	continuously feeds water to the blade		
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions		
(ii) Handheld power saws (any blade diameter)	Use saw equipped with integrated water delivery system that		
	continuously feeds water to the blade		
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions:		
	-When used outdoors	None	APF 10.
	-When used indoors or in an enclosed area	APF 10	APF 10.
(iii) Handheld power saws for cutting	For tasks performed outdoors only: Use saw equipped with	None	None.
fiber-cement board (with blade	commercially available dust collection system		
diameter of 8 inches or less)			

	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions		
	Dust collector must provide the air flow recommended by the tool		
	manufacturer, or greater, and have a filter with 99% or greater		
	efficiency		
(iv) Walk-behind saws	Use saw equipped with integrated water delivery system that		
	continuously feeds water to the blade		
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions:		
	-When used outdoors	None	None.
	-When used indoors or in an enclosed area	APF 10	APF 10.
(v) Drivable saws	For tasks performed outdoors only:		
	Use saw equipped with integrated water delivery system that	None	None.
	continuously feeds water to the blade		
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions		
(vi) Rig-mounted core saws or drills	Use tool equipped with integrated water delivery system that	None	None.
	supplies water to cutting surface		
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions		

(vii) Handheld and stand-mounted	Use drill equipped with commercially available shroud or cowling	None	None.
drills (including impact and rotary	with dust collection system		
hammer drills)			
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions		
	Dust collector must provide the air flow recommended by the tool		
	manufacturer, or greater, and have a filter with 99% or greater		
	efficiency and a filter-cleaning mechanism		
	Use a HEPA-filtered vacuum when cleaning holes		
(viii) Dowel drilling rigs for concrete	For tasks performed outdoors only:		
	Use shroud around drill bit with a dust collection system. Dust	APF 10	APF 10.
	collector must have a filter with 99% or greater efficiency and a		
	filter-cleaning mechanism		
	Use a HEPA-filtered vacuum when cleaning holes		
(ix) Vehicle-mounted drilling rigs for	Use dust collection system with close capture hood or shroud around	None	None.
rock and concrete	drill bit with a low-flow water spray to wet the dust at the discharge		
	point from the dust collector		
	OR		

	Operate from within an enclosed cab and use water for dust	None	None.
	suppression on drill bit		
(x) Jackhammers and handheld	Use tool with water delivery system that supplies a continuous stream		
powered chipping tools	or spray of water at the point of impact:		
	-When used outdoors	None	APF 10.
	-When used indoors or in an enclosed area	APF 10	APF 10.
	OR		
	Use tool equipped with commercially available shroud and dust		
	collection system		
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions		
	Dust collector must provide the air flow recommended by the tool		
	manufacturer, or greater, and have a filter with 99% or greater		
	efficiency and a filter-cleaning mechanism:		
	-When used outdoors	None	APF 10.
	-When used indoors or in an enclosed area	APF 10	APF 10.
(xi) Handheld grinders for mortar	Use grinder equipped with commercially available shroud and dust	APF 10	APF 25.
removal (*i.e.,* tuckpointing)	collection system		
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions		

	Dust collector must provide 25 cubic feet per minute (cfm) or greater		
	of airflow per inch of wheel diameter and have a filter with 99% or		
	greater efficiency and a cyclonic pre-separator or filter-cleaning		
	mechanism		
(xii) Handheld grinders for uses	For tasks performed outdoors only: Use grinder equipped with	None	None.
other than mortar removal	integrated water delivery system that continuously feeds		
	water to the grinding surface		
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions		
	OR		
	Use grinder equipped with commercially available shroud and dust		
	collection system		
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions		
	Dust collector must provide 25 cubic feet per minute (cfm) or greater		
	of airflow per inch of wheel diameter and have a filter with 99% or		
	greater efficiency and a cyclonic pre-separator or		
	filter-cleaning mechanism:		
	-When used outdoors	None	None.
	-When used indoors or in an enclosed area	None	APF 10.

(xiii) Walk-behind milling machines	Use machine equipped with integrated water delivery system that	None	None.
and floor grinders	continuously feeds water to the cutting surface		
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions		
	OR		
	Use machine equipped with dust collection system recommended by	None	None.
	the manufacturer		
	Operate and maintain tool in accordance with manufacturer's		
	instructions to minimize dust emissions		
	Dust collector must provide the air flow recommended by the		
	manufacturer, or greater, and have a filter with 99% or greater		
	efficiency and a filter-cleaning mechanism		
	When used indoors or in an enclosed area, use a HEPA-filtered		
	vacuum to remove loose dust in between passes		
(xiv) Small drivable milling	Use a machine equipped with supplemental water sprays designed to	None	None.
machines (less than half-lane)	suppress dust. Water must be combined with a surfactant		
	Operate and maintain machine to minimize dust emissions		
(xv) Large drivable milling machines	For cuts of any depth on asphalt only: Use machine equipped with	None	None.
(half-lane and larger)	exhaust ventilation on drum enclosure and supplemental water sprays		

	designed to suppress dust		
	Operate and maintain machine to minimize dust emissions		
	For cuts of four inches in depth or less on any substrate:		
	Use machine equipped with exhaust ventilation on drum enclosure	None	None.
	and supplemental water sprays designed to suppress dust		
	Operate and maintain machine to minimize dust emissions		
	OR		
	Use a machine equipped with supplemental water spray designed to	None	None.
	suppress dust. Water must be combined with a surfactant		
	Operate and maintain machine to minimize dust emissions		
(xvi) Crushing machines	Use equipment designed to deliver water spray or mist for dust	None	None.
	suppression at crusher and other points where dust is generated (*e.g.,*		
	hoppers, conveyers, sieves/sizing or vibrating components, and		
	discharge points)		
	Operate and maintain machine in accordance with manufacturer's		
	instructions to minimize dust emissions		
	Use a ventilated booth that provides fresh, climate-controlled air to		
	the operator, or a remote-control station		
(xvii) Heavy equipment and utility	Operate equipment from within an enclosed cab When employees	None	None.

vehicles used to abrade or	outside of the cab are engaged in the task, apply water and/or		
fracture silica-containing materials (*e.g.,* hoe-ramming, rock ripping)	dust suppressants as necessary to minimize dust emissions		
or used during demolition activities			
involving silica-containing			
materials			
(xviii) Heavy equipment and utility	Apply water and/or dust suppressants as necessary to minimize dust	None	None.
vehicles for tasks such as grading	emissions OR		
and excavating but not including:			
Demolishing, abrading, or fracturing	When the equipment operator is the only employee engaged in the	None	None.
silica-containing materials	task, operate equipment from within an enclosed cab		

7.3 Demarcation

Contractor shall demarcate regulated areas from the rest of the workplace in a manner that minimizes the number of employees exposed to respirable crystalline silica within the regulated area.

Contractor shall post signs at all entrances to regulated areas that bear the legend specified in subsection 8 CCR 5204 (j)(2):

DANGER
RESPIRABLE CRYSTALLINE SILICA
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
WEAR RESPIRATORY PROTECTION IN THIS AREA

7.4 Training

Contractors must have a minimum of one-hour training on the hazards of Silica. The training must cover the six bullet points within the regulation and must be performed by a competent person.

When required to use a respirator, Contractor must also have a valid medical and respirator fit test.

7.5 Respirators

Contractor shall provide each employee and the employee's designated representative entering a regulated area with an appropriate respirator equipped with HEPA cartridges (or a single use filtering face piece respirator rated at P-100) and shall require each employee and the employee's designated representative to use the respirator while in a regulated area.

7.6 Air monitoring

Contractor shall make and maintain an accurate record of all exposure measurements taken to assess employee exposure to respirable crystalline silica.

This record shall include at least the following information:

1. The date of measurement for each sample taken
2. The task monitored
3. Sampling and analytical methods used
4. Number, duration, and results of samples taken
5. Identity of the laboratory that performed the analysis
6. Type of personal protective equipment, such as respirators, worn by the employees monitored
7. Name, social security number, and job classification of all employees represented by the monitoring, indicating which employees were monitored.

7.7 Housekeeping

Dry sweeping or dry brushing where such activity could contribute to employee exposure to respirable crystalline silica is prohibited. The Contractor shall use techniques such as, wet sweeping, HEPA-filtered vacuuming or other methods that minimize the likelihood of exposure.

Compressed air shall not be used to clean clothing or surfaces where such activity could contribute to employee exposure to respirable crystalline silica unless the compressed air is used in conjunction with a ventilation system that effectively captures the dust cloud created by the compressed air. (Leaf blowers moving leaves around would likely be okay, leaf blowers used to move soil, dust or dirt could cause significant exposures).

DOCUMENT 00 01 20

LIST OF SCHEDULES

BID PHASE SCHEDULE

- Mandatory Pre-Bid Conference (web-based meeting via Microsoft Teams): Tuesday, April 4th, 2023, 11:00 am.
    - **Interested Parties need to register through the following link.**

      REGISTER HERE
- Mandatory Site Walk: Monday, April 10th, 2023, 10:00 am – 11:00 am.
- Last date to submit questions to Noe.Ramos@Solano.edu : By Wednesday, April 12th, 2023, 2:00 pm.
- Last addendum will be issued: By Wednesday, April 19th, 2023, 2:00 pm.
- **Bids Due: By Wednesday, May 3rd, 2023, 2:00 pm.**
- Mandatory Post Bid Interview: Thursday, May 4th, 2023, Time TBD.

A

- Solano Community College Board of Trustees Approval: Wednesday, May 17th, 2023.
- Notice of Award: Anticipated by Thursday, May 18th, 2023.
- Notice to Proceed: Anticipated by Monday, June 5st, 2023.

CONSTRUCTION SCHEDULE

- **Overall Project Duration:** June 5th, 2023 – November 24th, 2023.
    - **Owner Move-Out:** June 8th, 2023 – June 21st, 2023 (No Construction)
    - **Contractor Submittal Review Period:** June 5th, 2023 – June 30th, 2023
    - **Construction Start:** June 22nd, 2023 (After Owner Move-Out)
    - **Owner Move-In:** November 27th, 2023 – December 8th, 2023

Project Schedule is provided as a reference document in order to show possible sequence of work. Contractor is responsible for producing an actual project schedule the meets the project milestones listed above.

END OF DOCUMENT

DOCUMENT 00 11 16

NOTICE TO BIDDERS

1. Notice is hereby given that the governing board ("Board") of the **Solano Community College District** ("District") will receive sealed bids for the following project, **Bid No. 23-010** ("Project" or "Contract"):

   BUILDING 300 MODERNIZATION PROJECT

2. The Project consists of:

   a. All labor, materials, equipment, and supplies necessary for the completion of the entire scope of work as outlined in the contract documents. Includes all associated civil, architectural, structural, plumbing, mechanical, electrical and/or low voltage work as indicated in the Drawings and Specifications.

   b. The scope of work includes, but is not limited to; HVAC upgrades to the controls and valves as well as motors and components without the removal of the existing equipment. Removal and replacement of the existing roofing, removal and replacement of the existing ceiling tiles, restroom upgrades, ADA upgrades on the path of travel.

   c. Scope includes painting of all interior spaces.

   d. Scope of work includes a complete remodel of Room 303. Room will be converted into an Adjunct Faculty Space.

   e. Contractor shall include safe-off of all utilities, including but not limited to all electrical, fire alarm, data, security, and plumbing as needed to complete the project scope.

   f. The scope of this project is further defined in the Contract Documents. The Contractor will provide all security fencing, safety barriers, portable toilets, and debris bins per the Contract Specifications. Multiple relocations of site fencing/ safety barriers may be required for the completion of this project. All campus pedestrian access shall be maintained, and existing buildings shall remain functional during the duration of the project.

3. To bid on this Project, the Bidder is required to possess one or more of the following State of California contractor license(s)**:**

   B – General Building Contractor

   The Bidder's license(s) must remain active and in good standing throughout the term of the Contract.

4. To bid on this Project, the Bidder is required to be registered as a public works contractor with the Department of Industrial Relations pursuant to the Labor Code.

5. Contract Documents will be available on or after March 22nd, 2023, and may be viewed and/or downloaded from the District's website at; http://www.solano.edu/measureq/vendor.php

6. **Sealed Bids will be received until 2:00 p.m., May 3rd, 2023, at Solano Community College**, 4000 Suisun Valley Road, Fairfield, California 94534, at or after which time the bids will be opened and publicly read aloud. Any bid that is submitted after this time shall be non-responsive and returned to the bidder. Any claim by a bidder of error in its bid must be made in compliance with section 5100, et seq. of the Public Contract Code.

   If mailing, the District suggests delivery one day prior to bid date to allow for sufficient time for receiving, processing and delivery to the appropriate department. **It is each bidder's sole responsibility to ensure its bid is delivered timely and received at the location designated as specified. The District will not be responsible for errors in delivery, including not receiving bids via email under any circumstance. Any bid received at the designated location after the scheduled closing time for receipt of bids shall be returned to the bidder unopened.**

   Bidders choosing to mail bids shall send them to;

   Attn: Noe Ramos, Kitchell
   Building 300 Modernization Project – Bid Number 23-010
   4000 Suisun Valley Road, Building 1102 (Kitchell Bond Office)
   Fairfield, CA 94534

   In-person Bid Opening will not be held, and instead will be live streamed over the internet. This will take place at approximately 2:10pm, on the bid due date. Potential bidders can view the live opening on the District's website on the following link:

   https://welcome.solano.edu/scc-bids/

7. All bids shall be on the form provided by the District. Each bid must conform and be responsive to all pertinent Contract Documents, including, but not limited to, the Instructions to Bidders.

8. A bid bond by an admitted surety insurer on the form provided by the District, or a cashier's check or a certified check, drawn to the order of the Solano Community College District, in the amount of ten percent (10%) of the total bid price, shall accompany the Bid Form and Proposal, as a guarantee that the Bidder will, within seven (7) calendar days after the date of the Notice of Award, enter into a contract with the District for the performance of the services as stipulated in the bid.

9. **One Virtual Mandatory Pre-Bid Conference (via Microsoft Teams) will be held on Tuesday, April 4th, 2023, at 11:00 a.m. All interested parties must register to attend through the link below.**

   REGISTER HERE

https://events.teams.microsoft.com/event/b706e4f9-0140-47e7-b3b5-22530970d370@dc5d168e-14e5-44b1-99ae-b7984aa29306

(Copy and paste link above if issues with link)

Failure to attend or tardiness will render the bidder ineligible

One Mandatory Site Visit will be held on Monday, April 10th, 2023, at 11:00 a.m. This is in addition to the Virtual Pre-Bid Conference.

10. All pre-bid questions must be submitted in writing to the Project Manager, Noe Ramos, at Noe.Ramos@solano.edu. **Pre-Bid questions must be submitted on or before 2:00 p.m., Wednesday, April 12th, 2023.**

11. The successful Bidder shall be required to furnish a 100% Performance Bond and a 100% Payment Bond if it is awarded the contract for the Work.

12. The successful Bidder may substitute securities for any monies withheld by the District to ensure performance under the Contract, in accordance with the provisions of section 22300 of the Public Contract Code.

13. The successful bidder will be expected to meet a twenty percent (20%) Small, Local and Diverse Business Enterprise Program (SLDBE) goal by listing their small, local, and diverse subcontractors and/or suppliers on the SLDBE Bid Form and submitting this with their bid. Contractors who fail to meet the twenty percent (20%) SLDBE goal must submit evidence of having made a Good Faith Effort to attempt to achieve the twenty percent (20%) SLDBE goal.

14. The successful bidder will be required to certify that it either meets the Disabled Veteran Business Enterprise ("DVBE") goal of three percent (3%) participation or made a good faith effort to solicit DVBE participation in this Contract if it is awarded the contract for the Work. Note that DVBE participation will count towards SLDBE Program Goal.

15. The Contractor and all Subcontractors under the Contractor shall pay all workers on all work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to section 1770, et seq. of the California Labor Code. Prevailing wage rates are also available from the District or on the Internet at: <http://www.dir.ca.gov>.

16. This Project is subject to labor compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4 and subject to the requirements of Title 8 of the California Code of Regulations. The successful Bidder shall comply with all requirements of Division 2, Part 7, Chapter 1, Articles 1-5 of the Labor Code.

17. The Contractor and all Subcontractors under the Contractor shall comply with applicable federal, State, and local requirements relating to COVID-19 or other public health emergency/epidemic/pandemic including, if required, preparing, posting, and implementing a Social Distancing Protocol.

18. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible bidder based on:

    A. The base bid amount only.

19. The Board reserves the right to reject any and all bids and/or waive any irregularity in any bid received. If the District awards the Contract, the security of unsuccessful bidder(s) shall be returned within sixty (60) days from the time the award is made. Unless otherwise required by law, no bidder may withdraw its bid for ninety (90) days after the date of the bid opening.

END OF DOCUMENT

DOCUMENT 00 41 13

BID FORM AND PROPOSAL

To: **Solano Community College District** ("District" or "Owner")

From: _____
(Proper Name of Bidder)

The undersigned declares that Bidder has read and understands the Contract Documents, including, without limitation, the Notice to Bidders and the Instructions to Bidders, and agrees and proposes to furnish all necessary labor, materials, and equipment to perform and furnish all work in accordance with the terms and conditions of the Contract Documents, including, without limitation, the Drawings and Specifications of **Bid No. 23-010**, for the following project known as:

BUILDING 300 MODERNIZATION PROJECT

("Project" or "Contract") and will accept in full payment for that Work the following total lump sum amount, all taxes included:

_____ dollars $ _____
BASE BID

One Hundred Fifty Thousand and 00/100 dollars $ 150,000.00
Owner's Allowance

_____ dollars $ _____
TOTAL BID AMOUNT
(CUMULATIVE TOTAL OF BASE BID AMOUNT AND OWNER'S ALLOWANCE)

Bidder acknowledges and agrees that the Total Bid Amount accounts for any and all Allowance(s).

Additive/Deductive Alternates:

Alternate #1

_____ dollars $ _____
Additive/Deductive

FIRE SPRINKLER REMOVAL

Descriptions of alternates are primarily scope definitions and do not necessarily detail the full range of materials and processes needed to complete the construction.

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Additional Detail Regarding Calculation of Base Bid

1. **Owner's Allowance**. The Bidder's Base Bid shall include a One Hundred Fifty Thousand- and 00/100-Dollar allowance for the Owner's use.

   The above allowance(s) shall only be used by authorization by the Owner. Contractor shall not bill for or be due any portion of this allowance(s) unless the District has identified specific work, Contractor has submitted a price for that work or the District has proposed a price for that work, the District has accepted the cost for that work, and the District has prepared an Allowance Expenditure Directive incorporating that work. Contractor hereby authorizes the District to execute a unilateral deductive change order at or near the end of the Project for all or any portion of the allowance not allocated. Any unused portion of the allowance will revert back to the District documented by a deductive change order.

2. The undersigned has reviewed the Work outlined in the Contract Documents and fully understands the scope of Work required in this Proposal, understands the construction and project management function(s) is described in the Contract Documents, and that each Bidder who is awarded a contract shall be in fact a prime contractor, not a subcontractor, to the District, and agrees that its Proposal, if accepted by the District, will be the basis for the Bidder to enter into a contract with the District in accordance with the intent of the Contract Documents.

3. The undersigned has notified the District in writing of any discrepancies or omissions or of any doubt, questions, or ambiguities about the meaning of any of the Contract Documents, and has contacted the Construction Manager before bid date to verify the issuance of any clarifying Addenda.

4. The undersigned agrees to commence work under this Contract on the date established in the Contract Documents and to complete all work within the time specified in the Contract Documents.

5. The liquidated damages clause of the General Conditions and Agreement is hereby acknowledged.

6. It is understood that the District reserves the right to reject this bid and that the bid shall remain open to acceptance and is irrevocable for a period of ninety (90) days.

7. The following documents are attached hereto:

   - Bid Bond on the District's form or other security
   - Designated Subcontractors List
   - Site Visit Certification
   - Non-Collusion Declaration
   - Iran Contracting Act Certification
   - Small, Local, and Diverse Business Program (SLDBE)

8. Receipt and acceptance of the following Addenda is hereby acknowledged:

No. _____, Dated _____	No. _____, Dated _____
No. _____, Dated _____	No. _____, Dated _____
No. _____, Dated _____	No. _____, Dated _____

9. Bidder acknowledges that the license required for performance of the Work is a **B-General Contractor License.**

10. Bidder hereby certifies that Bidder is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the Work.

11. Bidder specifically acknowledges and understands that if it is awarded the Contract, that it shall perform the Work of the Project while complying with all requirements of the Department of Industrial Relations.

12. Bidder hereby certifies that its bid includes sufficient funds to permit Bidder to comply with all local, state or federal labor laws or regulations during the Project, including payment of prevailing wage, and that Bidder will comply with the provisions of Labor Code section 2810(d) if awarded the Contract.

13. The Bidder represents that it is competent, knowledgeable, and has special skills with respect to the nature, extent, and inherent conditions of the Work to be performed. Bidder further acknowledges that there are certain peculiar and inherent conditions existent in the construction of the Work that may create, during the Work, unusual or peculiar unsafe conditions hazardous to persons and property.

14. Bidder expressly acknowledges that it is aware of such peculiar risks and that it has the skill and experience to foresee and to adopt protective measures to adequately and safely perform the Work with respect to such hazards.

15. Bidder expressly acknowledges that it is familiar with and capable of complying with applicable federal, State, and local requirements relating to COVID-19 or other public health emergency/epidemic/pandemic including, if required, preparing, posting, and implementing a Social Distancing Protocol.

16. Bidder expressly acknowledges that it is aware that if a false claim is knowingly submitted (as the terms "claim" and "knowingly" are defined in the California False Claims Act, Gov. Code, § 12650 et seq.), the District will be entitled to civil remedies set forth in the California False Claim Act. It may also be considered fraud and the Contractor may be subject to criminal prosecution.

17. The undersigned Bidder certifies that it is, at the time of bidding, and shall be throughout the period of the Contract, licensed by the State of California to do the type of work required under the terms of the Contract Documents and registered as a public works contractor with the Department of Industrial Relations. Bidder further

certifies that it is regularly engaged in the general class and type of work called for in the Contract Documents.

Furthermore, Bidder hereby certifies to the District that all representations, certifications, and statements made by Bidder, as set forth in this bid form, are true and correct and are made under penalty of perjury.

Dated this _____ day of _____ 20 ____

Name of Bidder: _____

Type of Organization: _____

Signature: _____

Print Name: _____

Title: _____

Address of Bidder: _____

Taxpayer Identification No. of Bidder: _____

Telephone Number: _____ Fax Number: _____

E-mail: _____ Web Page: _____

Contractor's License No(s): No.: _____ Class: _____ Expiration Date: _____

No.: _____ Class:_____ Expiration Date: _____

No.: _____ Class:_____ Expiration Date: _____

Public Works Contractor Registration No.: _____

END OF DOCUMENT

DOCUMENT 00 52 13

AGREEMENT

THIS AGREEMENT IS MADE AND ENTERED INTO THIS _____ DAY OF _____ _____, 20___, by and between the **Solano Community College District** ("District") and _ _____ ("Contractor") ("Agreement").

WITNESSETH: That the parties hereto have mutually covenanted and agreed, and by these presents do covenant and agree with each other, as follows:

1. **The Work**: Contractor agrees to furnish all tools, equipment, apparatus, facilities, labor, and material necessary to perform and complete in a good and workmanlike manner, the work of the following project:

BUILDING 300 MODERNIZATION PROJECT

("Project" or "Contract" or "Work")

It is understood and agreed that the Work shall be performed and completed as required in the Contract Documents including, without limitation, the Drawings and Specifications and submission of all documents required to secure funding or by the Division of the State Architect for close-out of the Project, under the direction and supervision of, and subject to the approval of, the District or its authorized representative.

2. **The Contract Documents**: The complete Contract consists of all Contract Documents as defined in the General Conditions and incorporated herein by this reference. Any and all obligations of the District and Contractor are fully set forth and described in the Contract Documents. All Contract Documents are intended to cooperate so that any Work called for in one and not mentioned in the other or vice versa is to be executed the same as if mentioned in all Contract Documents.

3. **Interpretation of Contract Documents**: Should any question arise concerning the intent or meaning of Contract Documents, including the Drawings or Specifications, the question shall be submitted to the District for interpretation. If a conflict exists in the Contract Documents, valid, written modifications, beginning with the most recent, shall control over this Agreement (if any), which shall control over the Special Conditions, which shall control over any Supplemental Conditions, which shall control over the General Conditions, which shall control over the remaining Division 0 documents, which shall control over Division 1 Documents which shall control over Division 2 through Division 49 documents, which shall control over figured dimensions, which shall control over large-scale drawings, which shall control over small-scale drawings. In the case of a discrepancy or ambiguity solely between and among the Drawings and Specifications, the discrepancy or ambiguity shall be resolved in favor of the interpretation that will provide District with the functionally complete and operable Project described in the Drawings and Specifications. In no case shall a document calling for lower quality and/or quantity material or workmanship control. The decision of the District in the matter shall be final.

4. **Time for Completion**: It is hereby understood and agreed that the Work under this Contract shall be completed by **November 24th, 2023,** per the milestone dates specified in Specification Section 00 01 20 "List of Schedules" ("Contract Time").

5. **Completion - Extension of Time**: Should the Contractor fail to complete this Contract, and the Work provided herein, within the time fixed for completion, due allowance being made for the contingencies provided for herein, the Contractor shall become liable to the District for all loss and damage that the District may suffer on account thereof. The Contractor shall coordinate its Work with the Work of all other contractors. The District shall not be liable for delays resulting from Contractor's failure to coordinate its Work with other contractors in a manner that will allow timely completion of Contractor's Work. Contractor shall be liable for delays to other contractors caused by Contractor's failure to coordinate its Work with the Work of other contractors.

6. **Liquidated Damages**: Time is of the essence for all work under this Agreement. It is hereby understood and agreed that it is and will be difficult and/or impossible to ascertain and determine the actual damage that the District will sustain in the event of and by reason of Contractor's delay; therefore, Contractor agrees that it shall pay to the District the sum of Two-Thousand Dollars and 00/100 ($2,000.00) per day as liquidated damages for each and every day's delay beyond the time herein prescribed in completion of the Work.

It is hereby understood and agreed that this amount is not a penalty.

In the event that any portion of the liquidated damages is not paid to the District, the District may deduct that amount from any money due or that may become due the Contractor under this Agreement, and such deduction does not constitute a withholding or penalty. The District's right to assess liquidated damages is as indicated herein and in the General Conditions.

The time during which the Contract is delayed for cause, as hereinafter specified, may extend the time of completion for a reasonable time as the District may grant, provided that Contractor has complied with the claims procedure of the Contract Documents. This provision does not exclude the recovery of damages by either party under other provisions in the Contract Documents.

7. **Loss Or Damage**: The District and its agents and authorized representatives shall not in any way or manner be answerable or suffer loss, damage, expense, or liability for any loss or damage that may happen to the Work, or any part thereof, or in or about the same during its construction and before acceptance, and the Contractor shall assume all liabilities of every kind or nature arising from the Work, either by accident, negligence, theft, vandalism, or any cause whatsoever; and shall hold the District and its agents and authorized representatives harmless from all liability of every kind and nature arising from accident, negligence, or any cause whatsoever.

8. **Limitation Of District Liability:** District's financial obligations under this Contract shall be limited to the payment of the compensation provided in this Contract. Notwithstanding any other provision of this Contract, in no event shall District be liable, regardless of whether any claim is based on contract or tort, for any special, consequential, indirect or incidental damages, including, but not limited to, lost

profits or revenue, lost bonding capacity, arising out of or in connection with this Contract for the services performed in connection with this Contract.

9. **Insurance and Bonds**: Prior to issuance of the Notice to Proceed by the District, Contractor shall provide all required certificates of insurance, insurance endorsements, and payment and performance bonds as evidence thereof.

10. **Prosecution of Work**: If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of this Contract, the District, may, pursuant to the General Conditions and without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

11. **Authority of Architect, Project Inspector, and DSA**: Contractor hereby acknowledges that the Architect(s), the Project Inspector(s), and the Division of the State Architect ("DSA") have authority to approve and/or suspend Work if the Contractor's Work does not comply with the requirements of the Contract Documents, Title 24 of the California Code of Regulations, and all applicable laws and regulations. The Contractor shall be liable for any delay caused by its non-compliant Work.

12. **Assignment of Contract**: Neither the Contract, nor any part thereof, nor any moneys due or to become due thereunder, may be assigned by the Contractor without the prior written approval of the District, nor without the written consent of the Surety on the Contractor's Performance Bond (the "Surety"), unless the Surety has waived in writing its right to notice of assignment.

13. **Classification of Contractor's License**: Contractor hereby acknowledges that it currently holds valid Type _____ Contractor's license(s) issued by the State of California, Contractors' State License Board, in accordance with division 3, chapter 9, of the Business and Professions Code and in the classification called for in the Contract Documents.

14. **Registration as Public Works Contractor**: The Contractor and all Subcontractors currently are registered as public works contractors with the Department of Industrial Relations, State of California, in accordance with Labor Code section 1771.1.

15. **Payment of Prevailing Wages**: The Contractor and all Subcontractors shall pay all workers on all Work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code.

16. **Labor Compliance Monitoring and Enforcement**: This Project is subject to labor compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4 and Title 8 of the California Code of Regulations. Contractor specifically acknowledges and understands that it shall perform the Work of this Agreement while complying with all the applicable provisions of Division 2, Part 7, Chapter 1, of the Labor Code, including, without

limitation, the requirement that the Contractor and all of its Subcontractors shall timely submit complete and accurate electronic certified payroll records as required by the Contract Documents, or the District may not issue payment.

17. **Contract Price**: In consideration of the foregoing covenants, promises, and agreements on the part of the Contractor, and the strict and literal fulfillment of each and every covenant, promise, and agreement, and as compensation agreed upon for the Work and construction, erection, and completion as aforesaid, the District covenants, promises, and agrees that it will well and truly pay and cause to be paid to the Contractor in full, and as the full Contract Price and compensation for construction, erection, and completion of the Work hereinabove agreed to be performed by the Contractor, the following price:

_____ DOLLARS
AND xx/100 ($_____)

in lawful money of the United States, which sum is to be paid according to the schedule provided by the Contractor and accepted by the District and subject to additions and deductions as provided in the Contract. This amount supersedes any previously stated and/or agreed to amount(s).

18. **Owner's Allowance:** Included in the Contract Price above is an allowance for the Owner's use only, for the following price:

ONE HUNDRED FIFTY THOUSAND DOLLARS AND 00/100 ($150,000.00)

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The above allowance shall only be used by authorization by the Owner. Contractor shall not bill for or be due any portion of this allowance unless the District has identified specific work, Contractor has submitted price for that work or the District has proposed a price for that work, the District has accepted the cost for that work, and the District has prepared a change order incorporating that work. Contractor hereby authorizes the District to execute a unilateral deductive Change Order at or near the end of the Project for all or any portion of the Allowance no allocated.

19. **ALTERNATE #01:** Included in the Contract Price above is Alternate #01, for the Fire Sprinkler Removal, for the following price:

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_____ DOLLARS AND xx/100 ($_____)

20. **No Representations**: No representations have been made other than as set forth in writing in the Contract Documents, including this Agreement. Each of the Parties to this Agreement warrants that it has carefully read and understood the terms and conditions of this Agreement and all Contract Documents, and that it has not relied upon the representations or advice of any other Party or any attorney not its own.

21. **Entire Agreement**: The Contract Documents, including this Agreement, set forth the entire agreement between the parties hereto and fully supersede any and all prior agreements, understandings, written or oral, between the parties hereto pertaining to the subject matter thereof.

22. **Severability**: If any term, covenant, condition, or provision in any of the Contract Documents is held by a court of competent jurisdiction to be invalid, void or

unenforceable, the remainder of the provisions in the Contract Documents shall remain in full force and effect and shall in no way be affected, impaired, or invalidated thereby.

23. **Authority of Signatories**: Each party has the full power and authority to enter into and perform this Contract, and the person signing this Contract on behalf of each party has been properly authorized and empowered to enter into this Contract. This Contract may be executed in one or more counterparts, each of which shall be deemed an original. For this Agreement, and for all Contract Documents requiring a signature, a facsimile or electronic signature shall be deemed to be the equivalent of the actual original signature. All counterparts so executed shall constitute one Contract binding all the Parties hereto.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, accepted and agreed on the date indicated above:

CONTRACTOR	**SOLANO COMMUNITY COLLEGE DISTRICT**
_____	_____
By: _____	By: _____
Title: _____	Title: _____

NOTE: If the party executing this Contract is a corporation, a certified copy of the by-laws, or of the resolution of the Board of Directors, authorizing the officers of said corporation to execute the Contract and the bonds required thereby must be attached hereto.

END OF DOCUMENT

SPECIFICATIONS GROUP

General Requirements Subgroup

DIVISION 01 - GENERAL REQUIREMENTS

017416	CUTTING AND PATCHING
017419	CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
018113.71	SUSTAINABLE DESIGN REQUIREMENTS - CALGREEN NON-RESIDENTIAL MANDATORY

Facility Construction Subgroup

DIVISION 02 - EXISTING CONDITIONS

024119	SELECTIVE DEMOLITION

DIVISION 03 - CONCRETE

NOT APPLICABLE

DIVISION 04 - MASONRY

NOT APPLICABLE

DIVISION 05 - METALS

055213	PIPE AND TUBE RAILINGS

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

061000	ROUGH CARPENTRY
064116	PLASTIC LAMINATE CLAD ARCHITECTURAL CABINETS

A

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

075423	THERMOPLASTIC POLYOLEFIN (TPO) MEMBRANE ROOFING
076200	SHEET METAL FLASHING AND TRIM
078413	PENETRATION FIRESTOPPING
078443	JOINT FIRESTOPPING
079200	JOINT SEALANTS

DIVISION 08 - OPENINGS

081113	HOLLOW METAL DOORS AND FRAMES
081416	FLUSH WOOD DOORS
083113	ACCESS DOORS AND FRAMES
087111	DOOR HARDWARE (DESCRIPTIVE SPECIFICATION)

DIVISION 09 - FINISHES

092900	GYPSUM BOARD
093013	CERAMIC TILING
095113	ACOUSTICAL PANEL CEILINGS
096513	RESILIENT BASE AND ACCESSORIES
096519	RESILIENT TILE FLOORING
096813	TILE CARPETING
097723	FABRIC WRAPPED PANELS

A

099124 INTERIOR PAINTING (MPI STANDARDS)

DIVISION 10 - SPECIALTIES
101423.16 SIGNAGE
102113.15 SOLID COLOR REINFORCED COMPOSITE (SCRC) SUBSTRATE TOILET COMPARTMENTS
102800 TOILET, BATH, AND LAUNDRY ACCESSORIES
104416 FIRE EXTINGUISHERS

DIVISION 11 - EQUIPMENT
NOT APPLICABLE

DIVISION 12 - FURNISHINGS
123553.19 WOOD LABORATORY CASEWORK
123661.19 QUARTZ AGGLOMERATE COUNTERTOP A

DIVISION 13 - SPECIAL CONSTRUCTION
NOT APPLICABLE

DIVISION 14 - CONVEYING EQUIPMENT
NOT APPLICABLE

Facility Services Subgroup

DIVISION 21 - FIRE SUPPRESSION
NOT APPLICABLE

DIVISION 22 - PLUMBING
221005 PLUMBING PIPING

DIVISION 23 - HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)
23 05 19 METERS AND GAUGES FOR HVAC PIPING
23 05 53 IDENTIFICATION FOR HVAC PIPING EQUIPMENT
23 07 19 HVAC PIPING INSULATIONS A
23 09 23 DIRECT-DIGITAL CONTROL SYSTEM FOR HVAC
23 09 34 VARIABLE-FREQUENCY MOTOR CONTROLLERS
23 21 13 HYDRONIC PIPING
23 21 14 HYDRONIC SPECIALTIES
23 21 23 HYDRONIC PUMPS
23 23 00 REFRIGERANT PIPING
23 31 00 HVAC DUCTS AND CASINGS
23 33 00 DUCTS ACCESSOIRES
23 37 00 AIR OUTLETS AND INLETS
23 81 29 VARIABLE REFRIGERANT FLOW HVAC SYSTEMS A
23 82 16 AIR COILS

DIVISION 24 - RESERVED
NOT APPLICABLE

NOT APPLICABLE

DIVISION 26 - ELECTRICAL
26 05 05 SELECTIVE DEMOLITION FOR ELECTRICAL
26 05 10 ELECTRICAL GENERAL PROVISIONS
26 05 12 BASIC MATERIAL AND METHODS
26 05 13 MEDIUM-VOLTAGE CABLE

DIVISION 27 - COMMUNICATIONS
NOT APPLICABLE

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY
28 31 01 FIRE ALARM AND VOICE EVACUATION SYSTEM

Site and Infrastructure Subgroup

DIVISION 31 - EARTHWORK
NOT APPLICABLE

DIVISION 32 - EXTERIOR IMPROVEMENTS
NOT APPLICABLE

DIVISION 33 - UTILITIES
NOT APPLICABLE

END OF TABLE OF CONTENTS

SECTION 064116 - PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS – **ADDED ADDENDA #2**

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Plastic-laminate-clad architectural cabinets.
2. Cabinet hardware and accessories.
3. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-clad architectural cabinets that are not concealed within other construction.

B. Related Requirements:

1. Section 123661.19 "Quartz Agglomerate Countertop" for engineered stone counters installed with casework.

1.2 COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to support loads imposed by installed and fully loaded cabinets.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: Submit manufacturer's standard specifications for the following:

1. Plastic laminate
2. Cabinet hardware
3. FSC Certified 100% post-industrial recycled particleboard.
4. Greenguard certified adhesives indicating compliance with requirements for low-emitting materials.

B. Sustainable Design Submittals:

1. Laboratory Test Reports: For composite wood products, indicating compliance with requirements for low-emitting materials.

C. Shop Drawings:

1. Indicate casework types, sizes and locations
2. Include plans, elevations, sections, and attachment details.
3. Show large-scale details.
4. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
5. Show tolerances, clearances required and utility connections, if any.
6. Include coordinated information for laboratory equipment specified in another section and/or furnished by Owner.
7. Show locations and sizes of cutouts and holes for items installed in plastic-laminate architectural cabinets.

8. Apply WI Certified Compliance Program label to Shop Drawings.

D. Samples: For each exposed product and for each color and texture specified.

1. Plastic Laminates: 8 by 10 inches (200 by 250 mm), for each type, color, pattern, and surface finish required.

   a. Provide one sample applied to core material with specified edge material applied to one edge.

2. Thermally Fused Laminate (TFL) Panels: 8 by 10 inches (200 by 250 mm), for each color, pattern, and surface finish.

   a. Provide edge banding on one edge.

3. Corner Pieces:

   a. Cabinet-front frame joints between stiles and rails and at exposed end pieces, 18 inches (450 mm) high by 18 inches (450 mm) wide by 6 inches (150 mm) deep.
   b. Miter joints for standing trim.

4. Exposed Cabinet Hardware and Accessories: One full-size unit for each type and finish.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. Product Certificates: Woodwork Institute Certificates. Certificates shall warrant that the cabinets meet all requirements for Woodwork Institute “Custom Grade”. Submit certificates at project close out.

C. Field quality-control reports.

D. Maintenance Data: Manufacturer's recommendations for care and cleaning

E. Finish touch-up kit foreach type and color of materials provided

1.6 CLOSEOUT SUBMITTALS

A. Quality Standard Compliance Certificates: WI Certified Compliance Program certificates.

1.7 QUALITY ASSURANCE

A. Verification of compliance with Cal Green requirements for composite wood products shall include documentation of at least one of the following as requested by the enforcing agency:

1. Product certifications and specifications
2. Chain of custody certifications
3. Product labeled and invoiced as meeting the Composite Wood Products regulation (CCR Title 17, Section 93120)

B. Manufacturer's Qualifications: Employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.

1. Manufacturer's Certification: Licensed participant in WI's Certified Compliance Program.

C. Single Source Responsibility: A single manufacturer shall provide and install the work of this section.

D. Work shall be in accordance with Grade or Grades Specified of the "Architectural Woodwork Standards."

E. Certified Compliance

1. Before delivery to the jobsite the woodwork supplier shall provide a Woodwork Institute Certified Compliance Certificate indicating the millwork products being supplied and Certifying that these products fully meet the requirements of the Grade or Grades specified.
2. Each elevation of casework, each laminated plastic top, and each solid surface top shall bear a Woodwork Institute Certified Compliance Label.
3. At completion of installation the woodwork installer shall provide a Woodwork Institute Certified Compliance Certificate indicating the products installed and Certifying that the installation of these products fully meets the requirements of the Grade or Grades specified.
4. All fees charged by the Woodwork Institute for their Certified Compliance program are the responsibility of the millwork manufacturer and/or installer and shall be included in their bid.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver cabinets until painting and similar finish operations that might damage architectural cabinets have been completed in installation areas. Store cabinets in installation areas or in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.9 FIELD CONDITIONS

A. Environmental Limitations without Humidity Control: Do not deliver or install cabinets until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining temperature and relative humidity at levels planned for building occupants during the remainder of the construction period.

B. Field Measurements - Retrofit: Where casework is indicated to fit to existing construction, verify dimensions of existing construction by field measurements before fabrication and indicate measurements on Shop Drawings. Provide fillers and scribes if necessary.

C. Field Measurements for Countertops: Verify dimensions of countertops by field measurements after base cabinets are installed but before countertop fabrication is complete. Coordinate fabrication schedule with construction progress to avoid delaying the Work

PART 2 - PRODUCTS

2.1 PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

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

B. Cabinets: Woodwork Institute “Custom Grade”

1. Provide Woodwork Institute Certification: Each cabinet shall be Woodwork Institute Certified, bearing the “stamp of certification” affixed in a semi-exposed location on each unit and showing compliance with the above standard, when in the sole opinion of the Architect, the quality of the product provided is in question or does not meet the quality standards of the Woodwork Institute’s Manual of Millwork. This certification shall be provided on all casework in question at no additional cost to the owner.
2. All casework shall comply with 2019 CBC, Section 11B

C. Cabinet Design Requirements

1. Woodwork Institute cabinet design series (CDS):

a. Cabinet design requirements are designated on drawings using Woodwork Institute "Cabinet Design Series (CDS)" numbering system.
b. Where individual cabinet design requirements do not fit within the CDS numbering system, cabinet design requirements are detailed on drawings.

1) Catalog Standards:

a) Manufacturer's catalog numbers may be shown on drawings for convenience in identifying certain cabinet design requirements. Unless modified by notation on drawings or otherwise specified, catalog description for indicated number constitutes requirements for each such cabinet.
b) The use of catalog numbers is not intended to preclude the use of any other acceptable manufacturer's products, which are equivalent, but are given for the purpose of establishing design requirements.

2. Provide labels and certificates from WI certification program indicating that woodwork and installation complies with requirements of grades specified.

D. Type of Construction: Frameless.

E. Door and Drawer-Front Style: Flush overlay.

F. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by quality standard.

1. Products: Subject to compliance with requirements, provide the following:

a. Nevamar Corp: High Pressure Laminate with "Armor Protection Plus"
b. Wilsonart LLC; High Pressure Laminate with "High Wear Laminate"

G. Laminate Cladding for Exposed Surfaces:

1. Horizontal Surfaces: Grade HGS.
2. Postformed Surfaces: Grade HGP.
3. Vertical Surfaces: Grade VGS.
4. Edges: PVC edge banding, 3.0 mm thick, matching laminate in color, pattern, and finish.
5. Pattern Direction: As indicated.

H. Materials for Semiexposed Surfaces:

1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, NEMA LD 3, Grade VGS.

a. Edges of Plastic-Laminate Shelves: PVC edge banding, 3.0 mm thick, matching laminate in color, pattern, and finish.

b. For semiexposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, NEMA LD 3, Grade CLS.

2. Drawer Sides and Backs: Thermally fused laminate panels with PVC or polyester edge banding.
3. Drawer Bottoms: Thermally fused laminate panels.

I. Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces: High-pressure decorative laminate, NEMA LD 3, Grade BKL.

J. Drawer Construction: Fabricate with exposed fronts fastened to subfront with mounting screws from interior of body.

1. Join subfronts, backs, and sides with glued dovetail joints.

K. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:

1. As selected by Architect from laminate manufacturer's full range in the following categories:

a. Solid colors, matte finish.
b. Solid colors with core same color as surface, matte finish.
c. Wood grains, matte finish.
d. Patterns, matte finish.

2.2 WOOD MATERIALS

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

1. Solid Wood or Plywood: Columbia Forest Products, Purebond Classic Core plywood, with no defects affecting strength or utility. Hardwood and softwood lumber kiln dried to 7 and 10 percent moisture content, respectively.

B. Composite Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.

1. Composite Wood Products: Verify products are made using ultra-low-emitting formaldehyde resins, as defined in the California Air Resources Board's "Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products," (ATCM 17 CCR 93120 et. Seq.) or are made with no added formaldehyde.
2. Medium-Density Fiberboard (MDF): ANSI A208.2, Grade 130.
3. Particleboard (Medium Density): ANSI A208.1, Grade M-2. 100% post-industrial recycled particleboard.

4. Thermally Fused Laminate (TFL) Panels: Particleboard or MDF finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for Test Methods 3.3, 3.4, 3.6, 3.8, and 3.10.

2.3 CABINET HARDWARE AND ACCESSORIES

A. General: Color as selected by architect.

B. Butt Hinges: 2-3/4-inch x 3-5/8-inch, five-knuckle steel hinges made from 0.078-inch thick steel with 4 screws each into door, five screws into end panel. Hospital tip, rounded corner knuckles and fixed pins.

1. Semiconcealed Hinges for Flush Doors: ANSI/BHMA A156.9, B01361.

C. Catches: Magnetic catches, ANSI/BHMA A156.9, B03141.

D. Adjustable Shelf Clips: Steel with pins for ¼ inch drilled holes with earthquake pins to hold shelves against lateral movement.

1. Manufacturer: Hettich America, Sekura #6 or approved equal

E. Drawer Slides: ANSI/BHMA A156.9.

1. Manufacturer: Accuride International, or approved equal
2. Heavy-Duty (Grade 1HD-100 and Grade 1HD-200): Side mount.

a. Standard Drawers: Full extension rated at 100 lbs. With positive stops to prevent inadvertent removal.
b. File Drawers: 3 piece full extension rated at 100 lbs. with positive stops to prevent inadvertent removal.
c. Paper Storage Drawers or Drawers over 36” wide: 2 piece roller side guides rated at 150 lbs. With positive stops to prevent inadvertent removal.
d. Motion Feature: Soft close dampener.

F. Drawer Bumper Stops: Adjustable at each side rear to prevent impact on drawer front

G. Pulls: 4” U shaped handles with minimum 2” between face of cabinet and pull for drawers and hinged doors; sliding doors -- Finish as selected by Architect from US32, US32D US28 or from manufacturer’s full list of available colors. U-pulls to comply with 11B-309.4.

H. Locks:

1. Manufacturer: Olympus
2. Multiple cabinet locks in room keyed alike. (Each room to be keyed different). Master key that will open all casework locks on site. 5 pin tumbler. Model #500DR (for doors). Model #600DW (for drawers).
3. Lock location indicated on drawings

I. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with ANSI/BHMA A156.18 for ANSI/BHMA finish number indicated.

1. Satin Stainless Steel: ANSI/BHMA 630.

J. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in ANSI/BHMA A156.9.

2.4 MISCELLANEOUS MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood 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.

2.5 CABINET CONSTRUCTION

A. General: All cabinets factory assembled. All exposed vertical and horizontal surfaces shall be finished with high pressure laminated plastic unless otherwise indicated. Materials not shown or specified, best quality manufacture's standard or as otherwise approved. All parts precision machined to close tolerances, accurately fitted and assembled with appropriate fastenings and adhesives required to produce first quality fixtures, square, true, level and plumb.

B. End Panels and Partitions: ¾ inch thick particleboard with plastic-laminate faces and backs, edges faced with laminated plastic. Provide same grade, pattern, color, and texture of plastic laminate for backs as for faces. Backing sheet on interior or enclosed surfaces. End panels grooved to receive case backs, all parts lock-jointed.

C. Doors: ¾ inch thick particleboard, front surfaced with laminated plastic and edged with 3mm PVC edging, backs surfaced with interior or backing sheet. Overlaid type doors. Where full height doors open.

D. Cabinet Backs: Groove all members to receive ¼" prefinished hardboard on unexposed backs where required or scheduled. Exposed backs and backs on movable cabinets, ½" overlaid plywood or particle board surfaced with laminated plastic. Interior face surfaced with backing sheet.

E. Drawers:

1. Overlaid type fronts, ¾" particle board surfaces with laminated plastic and 3mm PVC edging, backing sheet on inside face; sides and back ½" overlaid particle board, lock-jointed or dovetailed into front and tenoned sides to back; smoothly sanded and coated with varnish drawer sealer.

2. Bottoms: ¼" thick prefinished hardboard. To match interior, housed into front, sides and back, glued and stapled.

F. Shelves: All shelving shall be particle board surfaces with overlay. All shelving shall be adjustable at 1" vertical intervals unless noted otherwise. All shelves drilled both ends for shelf clip retainer pins. All shelves shall be 1" thick. Shelves longer than 36" shall have intermediate supports at 36" maximum spacing. Exposed shelves shall be edge-banded with 3mm PVC edging and plastic laminate finish on horizontal surface.

G. Filler and Service Access Panels: Provide filler and service access panels to conceal all utility piping, conduits and devices with finish to match adjacent surfaces. Provide removable panels secured with screws and grommets at valves, clean outs, devices and connectors that may require adjustment and service.

H. Framing: Complete skeleton frames and head rails of overlaid plywood, securely glue and dowel or other approved method, required under all countertop base cabinets.

I. Bases: Base material shall be from solid wood stock. Continuous bases leveled and squared before units are installed, cabinets leveled and anchored to base.

PART 3 - EXECUTION

3.1 PREPARATION

A. Before installation, condition cabinets to humidity conditions in installation areas for not less than 72 hours.

3.2 INSTALLATION

A. Architectural Woodwork Standards Grade: Install cabinets to comply with quality standard grade of item to be installed.

B. Assemble cabinets and complete fabrication at Project site to extent that it was not completed in the shop.

C. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with wafer-head cabinet installation screws.

D. Install cabinets level, plumb, and true in line to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm) using concealed shims.

1. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
2. Install cabinets without distortion so doors and drawers fit openings and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.

E. Reference Section 123661.19 “Quartz Agglomerate Countertops” for attaching engineered stone countertops to casework.

F. All wall coverings referenced in Division 9 shall be installed prior to installation of this work. Coordination of such with other trade shall be required.

3.3 FIELD QUALITY CONTROL

A. Inspections: Provide inspection of installed Work through WI's Certified Compliance Program certifying that woodwork, including installation, complies with requirements of the Architectural Woodwork Standards for the specified grade.

1. Inspection entity shall prepare and submit report of inspection.

3.4 ADJUSTING AND CLEANING

A. Repair damaged and defective cabinets, where possible, to eliminate functional and visual defects. Where not possible to repair, replace architectural cabinets. Adjust joinery for uniform appearance.

B. Clean, lubricate, and adjust hardware.

C. Clean cabinets on exposed and semiexposed surfaces.

D. Installer shall advise Contractor of final protection and maintained conditions necessary to ensure that work will be without damage or deterioration time of acceptance.

E. Cover completed work with 4 mil polyethylene protective enclosure, applied in a manner to allow easy removal without damaging cabinets or adjoining work. Remove cover immediately before time of final acceptance.

END OF SECTION 064116

SECTION 096519 - RESILIENT TILE FLOORING – **ADDED ADDENDA #2**

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Luxury Vinyl Tile

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Sustainable Design Submittals:

1. Product Data: For adhesives, include printed statement of VOC content and chemical components.

C. Shop Drawings: For each type of resilient floor tile.

1. Include floor tile layouts, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.
2. Show details of special patterns.

D. Samples: Full-size units of each color, texture, and pattern of floor tile required.

E. Product Schedule: For floor tile. Use same designations indicated on Drawings.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Submit Safety Data Sheets (SDS) available for adhesives, moisture mitigation systems, primers, patching/leveling compounds, floor finishes (polishes) and cleaning agents and Material Information Sheets for flooring products.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of floor tile to include in maintenance manuals.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Floor Tile: Furnish one box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are competent in techniques required by manufacturer for floor tile installation and seaming method indicated.

1. Engage an installer who employs workers for this Project who are trained or certified by floor tile manufacturer for installation techniques required.

B. Environmental: Provide resilient tile flooring that is FloorScore Certified.

C. Fire Performance Characteristics: Provide resilient tile flooring with the following fire performance characteristics as determined by testing material in accordance with ASTM test methods indicated below by a certified testing laboratory or other testing agency acceptable to authorities having jurisdiction:

1. ASTM E 648 (NFPA 253) Critical Radiant Flux of 0.45 watts per sq. cm. or greater, Class I
2. ASTM E 662 (NFPA 258) (Smoke Generation) Maximum Specific Optical Density of 450 or less

D. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Coordinate mockups in this Section with mockups specified in other Sections.

a. Size: Minimum 100 sq. ft. (9.3 sq. m) for each type, color, and pattern in locations directed by Architect.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

B. Deliver materials in good condition to the jobsite in the manufacturer's original unopened containers that bear the name and brand of the manufacturer, project identification, and shipping and handling instructions.

C. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 55 deg F (13 deg C) or more than 85 deg F (29deg C). Store floor tiles on flat surfaces.

D. Store tiles on a flat surface and squarely on top of one another.

E. Store away from vents and direct sunlight.

F. When palletizing, first place a 5/8" or thicker plywood on the pallet. Stack 2 rows high side by side with no airspace between. Then quarter turn for 2 rows side by side. Do not exceed 12 boxes high. If you are stacking pallets, use a 1" thick plywood in between pallets.

1.8 FIELD CONDITIONS

A. The permanent HVAC system must be on for 7 days prior to, during and after installation between 65 and 85 degrees Fahrenheit or 18 to 29 degrees Celsius.

B. Material and adhesive must be acclimated to the installation area for a minimum of 48 hours prior to installation.

C. Maintain ambient temperatures within range recommended by manufacturer, but not less than 65 deg F (18 deg C) or more than 85 deg F (29 deg C), in spaces to receive floor tile during the following periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

D. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F (13 deg C) or more than 85 deg F (29deg C).

E. Maintain the ambient relative humidity between 40% and 60% during installation.

F. Close spaces to traffic during floor tile installation.

G. Close spaces to traffic for 48 hours after floor tile installation.

H. Install floor tile after other finishing operations, including painting, have been completed.

I. Protect all materials from the direct flow of heat from hot-air registers, radiators, or other heating fixtures and appliances.

1.9 WARRANTY

A. Resilient Flooring System: Submit a written warranty executed by the manufacturer, agreeing to repair or replace system (subfloor preparation products, adhesive, and floor covering) that fails within the warranty period.

B. Limited Warranty Period: 10 years on top of the Resilient Flooring Limited Warranty

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For resilient floor tile, as determined by testing identical products according to ASTM E648 or NFPA 253 by a qualified testing agency.

1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

B. Flooring along the accessible route shall be stable, firm and slip resistant, per CBC 11B-302.1.

C. Verify flooring products comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers." Version 1.2 January 2017.

2.2 LUXURY VINYL FLOOR TILE - **LVT**

A. Products: Subject to compliance with requirements, provide the following:

1. Tarkett; iD Latitude Abstract
2. Or approved equal

B. Class ASTM F1700: Class III, Type B

C. Construction: Commercial luxury vinyl tile.

1. Wear Layer Thickness: 0.02 inch (.51 mm)
2. Overall Thickness: 0.120inch (3.05 mm)
3. Backing Class: Commercial Grade
4. Installation: Direct Glue

D. Performance:

1. Slip Resistance: ASTM D2047: ADA Compliant
2. Squareness: ASTM F2421 – Passes
3. Size and Tolerance: ASTM F2055 – Passes
4. Thickness: ASTM F386 – Passes

5. Flexibility: ASTM F137 – Passes
6. Dimensional Stability: ASTM F2199 – Passes
7. Static Load: ASTM F970 – Passes
8. Residual Indentation: ASTM F1914- Passes
9. Resistance to Chemicals: ASTM F925- Passes
10. Resistance to Light: ASTM F1515 – Passes
11. Resistance to Heat: ASTM F1514 – Passes
12. Critical Radiant Flux: ASTM E648 – 0.45 W/sq. cm., Class I
13. Smoke Density: ASTM E662 – Passes, <450

E. Size: 6 by 36 inches (152 by 914 mm).

F. Colors and Patterns: As selected by Architect from manufacturer's full range

2.3 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based formulation provided or approved by floor tile manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.

1. Verify adhesive complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.4 ACCESSORIES

A. For sealing joints between the top of wall base or integral cove cap and irregular wall surfaces such as masonry, provide plastic filler applied according to the manufacturer's recommendations.

B. Provide transition/reducing strips tapered to meet abutting materials.

C. Provide threshold of thickness and width as shown on the drawings.

D. Provide resilient edge strips of width shown on the drawings, of equal gauge to the flooring, homogeneous vinyl or rubber composition, tapered or bullnose edge, with color to match or contrast with the flooring, or as selected by the Architect from standard colors available.

E. Provide metal edge strips of width shown on the drawings and of required thickness to protect exposed edges of the flooring. Provide units of maximum available length to minimize the number of joints. Use butt-type metal edge strips for concealed anchorage, or overlap-type metal edge strips for exposed anchorage. Unless otherwise shown, provide strips made of extruded aluminum with a mill finish.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates according to floor tile manufacturer's written instructions to ensure adhesion of resilient products.

B. Concrete Substrates: Prepare according to ASTM F710.

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by floor tile manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by floor tile manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 7 or more than 10 pH.
4. Moisture Testing: Perform tests so that each test area does not exceed 1000 sq. ft. (304.8 sq. m), and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Internal Relative Humidity value must not exceed 90% RH prior to installation.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install floor tiles until materials are the same temperature as space where they are to be installed.

1. At least 48 hours in advance of installation, move resilient floor tile and installation materials into spaces where they will be installed.

E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.

3.3 FLOOR TILE INSTALLATION

A. Comply with manufacturer's written instructions for installing floor tile.

B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.

1. Lay tiles in pattern indicated.
2. Plank products should have a minimum of 8 inch seam stagger.

C. In hallways and small spaces, work lengthwise from one end.

D. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.

1. Lay tiles in pattern of colors and sizes indicated.

E. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.

1. If you cut the product into a fine point, it may delaminate. Use an ethyl cyanoacrylate-based super glue to fuse the points together. Clean all glue from the top surface immediately. Alcohol-based super glues may cause the vinyl to swell.

F. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.

G. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent marking device.

H. Adhere floor tiles to substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

I. Roll the plank or tile with a 3-section 100 lb. roller. Re-roll the floor within the working time of the adhesive. Continue to roll the floor throughout the working day to ensure a proper bond.

3.4 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protecting floor tile.

B. Perform the following operations immediately after completing floor tile installation:

1. Remove adhesive and other blemishes from surfaces.
2. Sweep and vacuum surfaces thoroughly.
3. Damp-mop surfaces to remove marks and soil.

C. Protect floor tile from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

1. Do not use a plastic adhesive-based protection system.

D. Cover floor tile until Substantial Completion.

END OF SECTION 096519

SECTION 096813 - TILE CARPETING – **ADDED ADDENDA #2**

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Modular carpet tile.
2. Walk off carpet tile.

B. Related Requirements:

1. Section 024119 "Selective Demolition" for removing existing floor coverings.
2. Section 096513 "Resilient Base and Accessories" for resilient wall base and accessories installed with carpet tile.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to carpet tile installation including, but not limited to, the following:

a. Review delivery, storage, and handling procedures.
b. Review ambient conditions and ventilation procedures.
c. Review subfloor preparation procedures.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include manufacturer's written data on physical characteristics, durability, and fade resistance.
2. Include manufacturer's written installation recommendations for each type of substrate.

B. Sustainable Design Submittals:

1. Certificate showing compliance with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers." Version 1.2 January 2017.
1. Green Label Plus Certified

2. Cradle to Cradle Certified Gold
3. NSF 140 Gold Certification

C. Shop Drawings: For carpet tile installation, plans showing the following:

1. Columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet tiles.
2. Carpet tile type, color, and dye lot.
3. Type of subfloor.
4. Type of installation.
5. Pattern of installation.
6. Pattern type, location, and direction.
7. Pile direction.
8. Type, color, and location of insets and borders.
9. Type, color, and location of edge, transition, and other accessory strips.
10. Transition details to other flooring materials.

D. Floor schedule using the same room designations indicated on drawings.

E. Product Schedule: For carpet tile. Use same designations indicated on drawings.

F. Samples for Initial Selection: For each type of carpet tile.

1. Include Samples of exposed edge, transition, and other accessory stripping involving color or finish selection.

G. Samples for Verification: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.

1. Carpet Tile: Full-size Sample.
2. Exposed Edge, Transition, and Other Accessory Stripping: 12-inch- (300-mm-) long Samples.

H. Sustainable Product Certification: Provide ANSI/NSF 140 certification for carpet products.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Manufacturer’s Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

C. Verification of reclamation and recycling process.

D. Product Test Reports: For carpet tile, for tests performed by a qualified testing agency.

E. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For carpet tiles to include in maintenance manuals. Include the following:

1. Methods for maintaining carpet tile, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule.
2. Precautions for cleaning materials and methods that could be detrimental to carpet tile.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Carpet Tile: Full-size units equal to 5 percent of amount installed for each type indicated, but not less than 10 sq. yd. (8.3 sq. m).

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications

1. Company specializing in manufacturing specified carpet with minimum 2 years documented experience.
2. Upon request, manufacturer to provide representative to assist in project start-up and to inspect installation while in process and upon completion. Representative will notify designated contact if any installation instructions are not followed.
3. Single Source Responsibility: Obtain each type of product from one source and by a single manufacturer.

B. Installer Qualifications:

1. Flooring installer must be certified by the manufacturer prior to bid.
2. Flooring installer to be a specialty installer normally engaged in this type of work and shall have prior experience in the installation of these types of materials.
3. Certify payment of Prevailing Wage Rates to the installers.
4. Flooring installer possessing Contract for the product installation shall not sub-contract the labor without written approval of the Project Manager.
5. Flooring installer will be responsible for proper product installation, including floor testing and preparation as specified by the manufacturer and job conditions herein.
6. Flooring installer to provide Owner a written installation warranty that guarantees the completed installation to be free from defects in materials and workmanship for a period of one year after job completion.

C. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.

1. Build mockups at locations and in sizes shown on Drawings.
2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Comply with the Carpet and Rug Institute's CRI 104.

B. Deliver materials to the site in manufacturer's original packaging listing manufacturer's name, product name, identification number, and related information.

C. Store in a dry location, between 65 degrees F and 90 degrees F and a relative humidity below 65%. Protect from damage and soiling. Store in pallet form as supplied by Manufacturer. Do not stack pallets.

D. Make stored materials available for inspection by the Owner's representative.

E. Store materials in area of installation for minimum period of 48 hours prior to installation.

1.9 FIELD CONDITIONS

A. Comply with the Carpet and Rug Institute's CRI 104 for temperature, humidity, and ventilation limitations.

B. Environmental Limitations: Do not deliver or install carpet tiles until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at levels planned for building occupants during the remainder of the construction period.

C. Do not install carpet tiles over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive and concrete slabs have pH range recommended by carpet tile manufacturer.

D. Where demountable partitions or other items are indicated for installation on top of carpet tiles, install carpet tiles before installing these items.

E. Maintain minimum 65 degrees F ambient temperature and 65% Relative Humidity for 72 hours prior to, during, and 48 hours after installation.

F. Sub-floor preparation is to include all required work to prepare the existing floor for installation of the product as specified in this document and Manufacturer's installation instructions.

1.10 WARRANTY

A. Warranty to be sole source responsibility of the Manufacturer. Second source warranties and warranties that involve parties other than the carpet manufacturer are unacceptable.

B. If the product fails to perform as warranted when properly installed and maintained, the affected area will be repaired or replaced at the discretion of the Manufacturer.

C. Chair pads are not required, but are recommended for optimum textural performance. Absent the use of chair pads, more intensive maintenance will be required for areas in direct contact with chair caster traffic, and some degree of appearance change is to be expected.

D. The non-prorated lifetime limited warranty shall specifically warrant against:

1. Excessive Surface Wear: More than 15% loss of pile fiber weight
2. Excessive Static Electricity: More than 3.0 kV per AATCC 134
3. Resiliency Loss of the Backing: More than 10% loss of backing resiliency
4. Delamination
5. Edge Ravel
6. Zippering

E. Tuft Bind warranty in lieu of edge ravel and zippering is not acceptable.

PART 2 - PRODUCTS

2.1 NSF 140-2007 CERTIFICATION

A. Product must be certified at the Platinum level to ANSI standard NSF 140, the Sustainable Carpet Assessment Standard (SCAS). Product certification must be conducted by an independent, third party organization such as Scientific Certification Systems. Provide documentation.

B. Product must be Silver level Cradle to Cradle Certified™ v3.1. Cradle to Cradle Certified is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.

2.2 RECYCLED PERFORMANCE REQUIREMENTS

A. Recycled content

1. Product must contain a minimum of 45% recycled content by weight. This percentage is calculated by dividing the weight of recycled content in one square yard of finished product by the total weight of one square yard of finished product, and multiplying by 100. [(Recycle Content Weight) / (Total Product Weight) x 100].
2. Product must contain 28% post-consumer recycled content by weight from recycled post consumer carpet. This ensures that carpet is diverted from landfills for the production of the product and that virgin resource use in the product is reduced.

3. Recycled content must be certified by a neutral, independent, third party organization such as Scientific Certification Systems. Product must carry product label certifying overall recycled content (including post-industrial and post-consumer content). Report percentage of post-industrial and post-consumer recycled content as a percentage of total product weight.
4. Product must be available inclusive of 50% recycled content secondary backing.

    a. Recycled content and post consumer content must not be subject to availability. Post industrial and post consumer recycled content of product installed must be the same as those required by Project requirements.
    b. Also, Recycled content must be expressed as an exact percentage or a range. Statements such as "up to 60%" recycled content are not acceptable.
    c. Manufacturer must fully comply with FTC Part 260 "Guides for the Use of Environmental Marketing Claims," with respect to advertising, labeling, product inserts, catalogs and sales presentations of all its flooring products submitted and sold.

B. Product recyclability

1. Product must meet FTC guides for recyclability and must be one hundred percent (100%) closed-loop recyclable back into flooring. A manufacturer cannot claim that a product or any portion of a product is recyclable if it is incinerated even if incineration is used to produce heat and power (i.e. waste-to-energy) per FTC guides 16 CFR section 260.7 (d) example 3.
2. Recyclability of product installed must be the same as those required by Project requirements.

C. Recycling program

1. Manufacturer must have a collection and recovery system for product and a fully established, currently operational recycling program at time of bid per FTC guides Section 260.7 (d).

    a. Manufacturer must be able to reclaim and recycle 100% of installed carpet. Like material as installed must be 100% recycled.
    b. Manufacturer must have written guarantee that 100% of the recovered vinyl backed carpet will be recycled and that no portion of the product will be landfilled or incinerated (including waste-to-energy).

2.3 PERFORMANCE REQUIREMENTS

A. Test reports for the following performance assurance testing to be submitted upon request. Submitted results shall represent average results for production goods of the referenced style.

B. Requirements listed below must be met by all products.

1. Flooring Radiant Panel: ASTM E-648 / NFPA 253: Class 1 (CRF: 0.45 watts/sq cm or greater)

2. Federal Flammability: CPSC FF 1-70: Passes
3. Smoke Density: ASTM E-662 / NFPA 258: < 450 Flaming Mode
4. Electrostatic Propensity: AATCC 134 (Step & Scuff): 3.0 kV or less
5. Static Coefficient of Friction: ASTM C-1028: Passes ADA Requirements for Accessible Routes (minimum 0.60)
6. Delamination of Secondary Backing of Pile Floor Coverings: ASTM D-3936: No Delamination
7. Lightfastness: AATCC 16E: > 4 @ 100 hours if solution dyed
8. TARR Severe Traffic: 3.5 minimum
9. Dimensional Stability: Aachen / ISO 2551: Maximum Change +/- 0.149%
10. Moisture Barrier: Moisture Penetration by Impact @ 10 psi: No Penetration of backing after 10,000 impacts
11. Acoustic Requirements: Noise Reduction Coefficient (NRC): 0.15 Minimum

2.4 CARPET TILE CT-1 and CT-2

A. Products: Subject to compliance with requirements, provide the following:

1. Tarkett; ethos modular with Flex-Aire Cushion Backing
2. District Standard – No Substitutions

B. Color: As selected by Architect from manufacturer's full range.

C. Construction: Stratatec Patterned Loop

1. Gauge: 5/64”
2. Stitches per inch: 8.5/in
3. Tuft Density: tufts/sq inch
4. Pile Height Average: 0.185 in
5. Pile Thickness: 0.080 in
6. Dye Method: Solution Dyed/Yarn Dyed

D. Fiber Type: BCF Nylon with Statis Control & Soil Protection

1. Nylon Fiber: Bulked Continuous Filament (BCF) Nylon in a loop pile construction
2. For yarn containing recycled content, report post consumer and post industrial recycled content of the pile face yarn based on total yarn weight i.e. (Recycle Content in Pile Face Yarn) / (Total Weight of Pile Face Yarn) x 100
3. Fiber to contain carbon-core filament for permanent static control. Topical treatments are not allowed.
4. Durable soil protection should be applied to the fiber during product manufacturing to resist fiber soiling.
5. Application Rate: 2% of Face Weight

E. Backing Characteristics

1. Primary Backing: Synthetic Non-Woven.
2. Secondary Backing: Flex-Aire Modular Cushion

    a. Density (ASTM D-1667): 65 Min. lbs/cu ft +/- 5%
    b. Standard Size: 24" x 24"
    c. Recycled Content: 21-40% Recycled Content Secondary Backing
    d. Fiberglass Reinforced
    e. Face yarn fully fused to secondary backing system that will not delaminate.
    f. Delamination: No delamination per ASTM D3936
    g. Product must not contain pesticides (US EPA Registered Antimicrobials). Installation adhesives are exempt from this section.

F. Environmental Impact: No pesticides added to product (US EPA Registered Antimicrobials)

G. Size: 24 by 24 inches (610 by 610 mm).

H. Performance Characteristics:

1. Dry Breaking Strength: Not less than 100 lbf (445 N) according to ASTM D2646.
2. Tuft Bind: Not less than 6.2 lbf (28 N) according to ASTM D1335.
3. Noise Reduction Coefficient (NRC): 0.15 minimum according to ASTM C423.

2.5 WALK OFF CARPET TILE **CT-3**

A. Products: Subject to compliance with requirements, provide the following:

1. Tarkett; ethos modular with Flex-Aire Cushion Backing
2. Or approved equal

B. Color: As selected by Architect from manufacturer's full range.

C. Construction: Accuweave Patterned Loop

1. Gauge: 1/12
2. Stitches per inch: 8.0
3. Tuft Density: 96 tufts/sq inch
4. Pile Height Average: 0.187 inch
5. Pile Thickness: 0.115 inch
6. Density Factor (UM44D): 7,513 oz/cu yd
7. Dye Method: 100% Solution Dyed
8. Pattern Match: Not Required

D. Fiber Type: BCF Nylon with Statis Control & Soil Protection

1. Nylon Fiber: Bulked Continuous Filament (BCF) Nylon in a loop pile construction

2. For yarn containing recycled content, report post consumer and post industrial recycled content of the pile face yarn based on total yarn weight i.e. (Recycle Content in Pile Face Yarn) / (Total Weight of Pile Face Yarn) x 100
3. Fiber to contain carbon-core filament for permanent static control. Topical treatments are not allowed.
4. Durable soil protection should be applied to the fiber during product manufacturing to resist fiber soiling.
5. Application Rate: 2% of Face Weight

E. Backing Characteristics

1. Primary Backing: Synthetic Non-Woven.
2. Secondary Backing: Flex-Aire Modular Cushion

   a. Density (ASTM D-1667): 65 Min. lbs/cu ft +/- 5%
   b. Standard Size: 24" x 24"
   c. Recycled Content: 21-40% Recycled Content Secondary Backing
   d. Fiberglass Reinforced
   e. Face yarn fully fused to secondary backing system that will not delaminate.
   f. Delamination: No delamination per ASTM D3936
   g. Product must not contain pesticides (US EPA Registered Antimicrobials). Installation adhesives are exempt from this section.

F. Environmental Impact: No pesticides added to product (US EPA Registered Antimicrobials)

G. Size: 24 by 24 inches (610 by 610 mm).

H. Performance Characteristics:

1. Dry Breaking Strength: Not less than 100 lbf (445 N) according to ASTM D2646.
2. Tuft Bind: Not less than 6.2 lbf (28 N) according to ASTM D1335.
3. Noise Reduction Coefficient (NRC): 0.15 minimum according to ASTM C423.

2.6 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided or recommended by carpet tile manufacturer.

B. Adhesives: Water-resistant, mildew-resistant, nonstaining, pressure-sensitive type to suit products and subfloor conditions indicated, that comply with flammability requirements for installed carpet tile, and are recommended by carpet tile manufacturer for releasable installation.

C. Metal Edge/Transition Strips: Extruded aluminum with mill finish of profile and width shown, of height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints.

PART 3 - EXECUTION

3.1 EXAMINATION/PREPARATION

A. General: Comply with the Carpet and Rug Institute's CRI 104 and with carpet tile manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile.

B. Prepare sub-floor to comply with criteria established in Manufacturer's installation instructions. Use only preparation materials that are acceptable to the Manufacturer.

1. Remove all deleterious substances from substrate(s) that would interfere with or be harmful to the installation.
2. Remove sub-floor ridges and bumps. Fill cracks, joints, holes, and other defects.

C. Verify that sub-floor is smooth and flat within specified tolerances and ready to receive carpet.

D. Verify that substrate surface is dust-free and free of substances that would impair bonding of product to the floor.

3.2 INSTALLATION

A. General: Comply with the Carpet and Rug Institute's CRI 104, Section 10, "Carpet Tile," and with carpet tile manufacturer's written installation instructions.

B. Product must meet the requirements of CRI's Green Label Plus (GLP) program for carpet. Provide documentation.

C. Adhesive must meet the requirements of CRI's Green Label Plus program for adhesive. Provide documentation.

D. Adhesives must be below the VOC content limits specified by the South Coast Air Quality Management District Rule #1168. Provide documentation.

E. No US EPA registered pesticides (antimicrobials) are to be added to the product. Antimicrobial treatments are registered with the EPA as preservatives of the products only, and no health benefit should be claimed or expected. If antimicrobials are added then third party documentation with a seal is required stating that the pesticides used will cause NO HARM to the occupants. Installation adhesives are exempt from this section.

F. Product as installed to be securely attached to the floor in compliance with Americans with Disabilities Act (ADA), Section 4.5.3.

G. Installation Method: As recommended in writing by carpet tile manufacturer.

H. Maintain dye-lot integrity. Do not mix dye lots in same area.

I. Maintain pile-direction patterns recommended in writing by carpet tile manufacturer.

J. Where demountable partitions or other items are indicated for installation on top of finished carpet tile floor, install carpet tile before installation of these items.

K. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet tile manufacturer.

L. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.

M. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on carpet tile as marked on subfloor. Use nonpermanent, nonstaining marking device.

N. Install pattern parallel to walls and borders.

O. Roll with appropriate roller for complete contact of product with adhesive to sub-floor.

P. Trim carpet neatly at walls and around interruptions.

Q. Completed product is to be smooth and free of bubbles, puckers, and other defects.

3.3 CLEANING AND PROTECTION

A. Perform the following operations immediately after installing carpet tile:

1. Remove excess adhesive and other surface blemishes using cleaner recommended by carpet tile manufacturer.
2. Remove yarns that protrude from carpet tile surface.
3. Vacuum carpet tile using commercial machine with face-beater element.

B. Protect installed carpet tile to comply with the Carpet and Rug Institute's CRI 104, Section 13.7.

C. Protect carpet tile against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer.

END OF SECTION 096813

SECTION 097723 - FABRIC-WRAPPED PANELS – **ADDED ADDENDA #2**

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Vinyl-covered tackboard panels

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include fabric facing, panel edge, core material, and mounting indicated.

B. Sustainable Design Submittals:
1. Laboratory Test Reports: For wall materials, indicating compliance with requirements for low-emitting materials.

C. Shop Drawings: For panel assembly and installation.

1. Include plans, elevations, sections, and mounting devices and details.
2. Include details at panel head, base, joints, and corners; and details at ceiling, floor base, and wall intersections. Indicate panel edge profile and core materials.
3. Include details at cutouts and penetrations for other work.
4. Include direction of fabric weave and pattern matching.

D. Submit samples for verification: 8-inch square units displaying the substrate material and fabric backed vinyl coating and demonstrating quality, weight, color range and pattern variation.

E. Submit manufacturer's written product certification that all furnished core materials and fabric- backed vinyl covering meets or exceeds the specification requirements. Include certified copies of tests specified.

F. Submit manufacturer's written instructions for recommended maintenance of vinyl covered tackboard panel specified. Include acceptable methods and materials recommended to maintain products in anticipated areas of use.

1.4 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Elevations and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

1. Electrical outlets, switches, and thermostats.
2. Items penetrating or covered by panels including the following:

a. Lighting fixtures.
b. Air outlets and inlets.
c. Speakers.
d. Alarms.
e. Access panels.

3. Show operation of hinged and sliding components covered by or adjacent to panels.

B. Product Certificates: For each type of panel.

C. Sample Warranty: For manufacturer's special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of panel to include in maintenance manuals. Include fabric manufacturers' written cleaning and stain-removal instructions.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials from same production run that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Fabric: For each fabric, color, and pattern installed, provide length equal to 10 percent of amount installed, but no fewer than 10 sq. yd. (9 sq. m), full width of bolt.

1.7 QUALITY ASSURANCE

A. Manufacturer: Provide each type of vinyl tack panel from a single source with ability to provide products of consistent quality in appearance and physical properties.

B. Tack panels must be machine laminated (no hand wrapped panels) the machine process insures against the material delaminating from the panel.

C. Installation by skilled and experienced installers with no less than three years of documented experience installing tack panels of this type as specified.

D. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials, fabrication, and installation.

1. Build mockup of typical wall area 48 inches (1200 mm) wide by full height.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Comply with fabric and panel manufacturers' written instructions for minimum and maximum temperature and humidity requirements for shipment, storage, and handling.

B. Deliver vinyl wallcoverings to the project site in unbroken and undamaged original factory wrappings and clearly labeled with the manufacturer's identification label, quality or grade and lot number.

C. Deliver materials and panels in unopened bundles and store in a temperature-controlled dry place with adequate air circulation.

1.9 FIELD CONDITIONS

A. Environmental Limitations: Do not install panels until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, work at and above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

B. Lighting: Do not install panels until a permanent level of lighting is provided on surfaces to receive the panels.

C. Air-Quality Limitations: Protect panels from exposure to airborne odors such as tobacco smoke, and install panels under conditions free from odor contamination of ambient air.

D. Field Measurements: Verify panel locations and actual dimensions of openings and penetrations by field measurements before fabrication, and indicate them on Shop Drawings.

1.10 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace panels and components that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Fabric sagging, distorting, or releasing from panel edge.
b. Warping of core.

2. Warranty Period: 5 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain fabric-wrapped wall panels from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Verify wall materials comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

B. Fire-Test-Response Characteristics: Panels shall comply with "Surface-Burning Characteristics" or "Fire Growth Contribution" Subparagraph below, or both, as determined by testing identical products by UL or another testing and inspecting agency acceptable to authorities having jurisdiction:

1. Surface-Burning Characteristics: Comply with ASTM E84 or UL 723; 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. Fire Growth Contribution: Comply with acceptance criteria of local code and authorities having jurisdiction when tested according to NFPA 265 Method B Protocol or NFPA 286.

2.3 VINYL COVERED TACKBOARD PANELS

A. Vinyl Covered Tackboard Panel: Manufacturer's standard panel construction consisting of facing material laminated to front face, edges, and back edge border of core.

1. Manufacturers: Subject to compliance with requirements, provide products by the following:

a. Lamvin, Inc.
b. Chatfield Clarke Co.
c. ABC School Equipment
d. Claridge Products West

2. Panel Shape: Flat.
3. Mounting: Back mounted with manufacturer's standard adhesive, secured to substrate.
4. Class 1/A Panel Substrate

    a. Core: Compressed industrial insulation wood fiberboard
    b. Manufacturer: Emco Fire Rated Fiberboard or approved equal
    c. Thickness: ½”
    d. Density: 16 pcf
    e. Weight: .64 pounds per square foot
    f. Fire Rating: UL Label

        1) Flame Spread: 20
        2) Smoke Developed: 30

5. Edge Construction: Manufacturer's standard chemically hardened core with no frame.
6. Edge Profile: Square.
7. Facing Material: As indicated on Drawings.
8. Nominal Core Thickness: 1/2 inch
9. Panel Width: 48” wide
10. Panel Height: Height required to achieve seamless installation

B. Fabric Backed Vinyl Covering

1. Manufacturer: Koroseal Wallcoverings, a Division of RJF International Corporation.
2. Pattern and Color: Selected from Koroseal Wallcovering School Collection or select
3. Width: 54 inches.
4. Fabric Backing: Select

    a. Type II: Osnaburg

5. Fire Rating: Class 1 or A

    a. Type II: 21 ounces per linear yard

6. Formulation:

    a. Mildew inhibitorized
    b. Stain resistant coating: Delustered acrylic resin topcoating applied as and integral part of the fabric backed vinyl covering manufacturing process.
    c. Early Warning Effect formulation:

2.4 ACCESSORIES

A. Adhesives: Install panels with #317 Adhesive by W.W. Henry or approved equal

B. Moldings: Wrap to match the vinyl specified.

2.5 FABRICATION

A. Apply specified primer to selected core material as recommended by core manufacturer.

B. Apply recommended adhesive to exposed face of core.

C. Laminate fabric-backed vinyl covering in numbered sequence from vinyl rolls to insure minimum color variation between tackable panels.

D. Attach vinyl covering to cores to produce installed panels with visible surfaces fully covered and free from bubbles, sags, wrinkles, distortion of vinyl covering, adhesive or foreign material.

E. Wrap panel substrate with fabric-backed vinyl, covering vertical edges and returning vinyl approximately 2 inches on back of panel.

F. Provide sizes wall to ceiling heights and widths as indicated on the drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine fabric, fabricated panels, substrates, areas, and conditions for compliance with requirements, installation tolerances, and other conditions affecting panel performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install panels in locations indicated. Unless otherwise indicated, install panels with vertical surfaces and edges plumb, top edges level and in alignment with other panels, faces flush, and scribed to fit adjoining work accurately at borders and at penetrations.

B. Install panels in one piece beginning at center point of the wall and working to room corners.

C. Install adhesive to walls and tack board panels in accordance with adhesive manufacturer's installation instructions, using recommended adhesive and concealed fasteners.

D. Align fabric pattern and grain with adjacent panels.

3.3 INSTALLATION TOLERANCES

A. Variation from Plumb and Level: Plus or minus 1/16 inch (1.6 mm) in 48 inches (1200 mm), noncumulative.

B. Variation of Joint Width: Not more than 1/32 inch (0.79 mm) wide from hairline in 48 inches (1200 mm), noncumulative.

3.4 CLEANING

A. Clean panels on completion of installation to remove dust and other foreign materials according to manufacturer's written instructions.

END OF SECTION 097723

SECTION 123661.19 - QUARTZ AGGLOMERATE COUNTERTOPS – **ADDED ADDENDA #2**

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Quartz agglomerate countertops.
2. Quartz agglomerate backsplashes.

1.2 ACTION SUBMITTALS

A. Product Data: For countertop materials.

B. Sustainable Design Submittals:

1. Product Data: For adhesives, indicating VOC content.
2. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.
3. Laboratory Test Reports: For composite wood products, indicating compliance with requirements for low-emitting materials.

C. Shop Drawings: For countertops. Show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures.

1. Show locations and details of joints.
2. Show direction of directional pattern, if any.

D. Samples for Initial Selection: For each type of material exposed to view.

E. Samples for Verification: For the following products:

1. Countertop material, 6 inches (150 mm) square.
2. One full-size quartz agglomerate countertop, with front edge and backsplash, 8 by 10 inches (200 by 250 mm), of construction and in configuration specified.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For quartz agglomerate countertops to include in maintenance manuals. Include Product Data for care products used or recommended by Installer and names, addresses, and telephone numbers of local sources for products.

1.5 QUALITY ASSURANCE

A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate countertops similar to that required for this Project, and whose products have a record of successful in-service performance.

B. Installer Qualifications: Fabricator of countertops.

C. Mockups: Build mockups to demonstrate aesthetic effects and to set quality standards for fabrication and execution.

1. Build mockup of typical countertop as shown on Drawings.
2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 FIELD CONDITIONS

A. Field Measurements: Verify dimensions of countertops by field measurements after base cabinets are installed but before countertop fabrication is complete.

1.7 COORDINATION

A. Coordinate locations of utilities that will penetrate countertops or backsplashes.

PART 2 - PRODUCTS

2.1 QUARTZ AGGLOMERATE COUNTERTOP MATERIALS

A. Quartz Agglomerate: Solid sheets consisting of quartz aggregates bound together with a matrix of filled plastic resin and complying with ICPA SS-1, except for composition.

1. Manufacturers: Subject to compliance with requirements, provide products by the following:

a. Cambria.
b. Cesarstone
c. Or approved equal

2. Colors and Patterns: As selected by Architect from manufacturer's full range.

B. Composite Wood Products: Verify products are made using ultra-low-emitting formaldehyde resins, as defined in the California Air Resources Board's "Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products," or are made with no added formaldehyde.

C. Particleboard: ANSI A208.1, Grade M-2.

D. Plywood: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.

2.2 COUNTERTOP FABRICATION

A. Fabricate countertops according to quartz agglomerate manufacturer's written instructions and the AWI/AWMAC/WI's "Architectural Woodwork Standards."

1. Grade: Custom.

B. Countertops: 3/4-inch- (19-mm-) thick, quartz agglomerate with front edge built up with same material.

C. Backsplashes: 3/4-inch- (19-mm-) thick, quartz agglomerate.

D. Fabricate tops with shop-applied edges and backsplashes unless otherwise indicated. Comply with quartz agglomerate manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.

E. Joints: Fabricate countertops without joints.

F. Cutouts and Holes:

1. Undercounter Plumbing Fixtures: Make cutouts for fixtures in shop using template or pattern furnished by fixture manufacturer. Form cutouts to smooth, even curves.

a. Provide vertical edges, slightly eased at juncture of cutout edges with top and bottom surfaces of countertop and projecting 3/16 inch (5 mm) into fixture opening.

2. Fittings: Drill countertops in shop for plumbing fittings, undercounter soap dispensers, and similar items.

2.3 INSTALLATION MATERIALS

A. Adhesive: Product recommended by quartz agglomerate manufacturer.

1. Verify adhesives have a VOC content of 70 g/L or less.

2. Verify adhesive complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

B. Sealant for Countertops: Comply with applicable requirements in Section 079200 "Joint Sealants."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates to receive quartz agglomerate countertops and conditions under which countertops will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of countertops.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install countertops level to a tolerance of 1/8 inch in 8 feet (3 mm in 2.4 m), 1/4 inch (6 mm) maximum. Do not exceed 1/64-inch (0.4-mm) difference between planes of adjacent units.

B. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Predrill holes for screws as recommended by manufacturer. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with quartz agglomerate manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.

C. Bond joints with adhesive and draw tight as countertops are set. Mask areas of countertops adjacent to joints to prevent adhesive smears.

1. Clamp units to temporary bracing, supports, or each other to ensure that countertops are properly aligned and joints are of specified width.

D. Install backsplashes and end splashes by adhering to wall and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears.

E. Install aprons to backing and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears. Fasten by screwing through backing. Predrill holes for screws as recommended by manufacturer.

F. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.

G. Apply sealant to gaps at walls; comply with Section 079200 "Joint Sealants."

END OF SECTION 123661.19

SECTION 23 05 19 - METERS AND GAUGES FOR HVAC PIPING *(ADDENDUM 2)*

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. BTU Meters.

B. Flow Meters.

1.02 REFERENCE STANDARDS

A. ASTM E77 - Standard Test Method for Inspection and Verification of Thermometers; 2014.

B. UL 393 - Indicating Pressure Gauges for Fire-Protection Service; Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. See Division 1 for submittal procedures.

B. Product Data: Provide list that indicates use, operating range, total range and location for manufactured components. Indicate scale range, figure interval and minor graduation markings for all pressure and compound ranges.

PART 2 - PRODUCTS

2.01 BTU METERS

A. Provide an ONICON System-10 BTU Meter. The BTU meter shall provide the following points both at the integral LCD and as outputs to the building control system: Energy Total, Energy Rate, Flow Rate, Supply Temperature and Return Temperature. Output signals shall be either serial network (protocol conforming to BACnet® MS/TP, BACnet/IP, LONWORKS®, JCI-N2, MODBUS RTU RS485, MODBUS RTU TCP/IP, or Siemens-P1) and/or via individual analog and pulse outputs. Each BTU meter shall be factory programmed for its specific application, and shall be re-programmable using the front panel keypad (no special interface device or computer required). NEMA 3R enclosure, suitable for wall mounting.

B. Temperature Sensors: Temperature sensors shall be loop-powered current based (mA) sensors and shall be bath-calibrated and matched (NIST* traceable) for the specific temperature range for each application. The calculated differential temperature used in the energy calculation shall be accurate

to within +0.15°F (including the error from individual temperature sensors, sensor matching, input offsets, and calculations). Suitable for outdoors use (NEMA 3R).

2.02 FLOW METERS

A. Insertion Turbine Type: Provide an ONICON Model F-1200 Dual Turbine Flow Meter. The flow meter shall have two contra-rotating axial turbines, with electronic impedance-based sensing and an averaging circuit to reduce measurement errors due to swirl and flow profile distortion. Each flow meter shall be individually wet-calibrated against a primary volumetric standard that is accurate to within 0.1% and traceable to NIST*. A certificate of calibration shall be provided with each flow meter. Accuracy shall be within ± 0.5% of rate at the calibrated velocity, within ± 1% of rate over a 10:1 turndown (3.0 to 30 ft/s) and within ± 2% of rate over a 50:1 turndown (from 0.4 to 20 ft/s). Output signal shall be a 0-15 V square wave pulse. Bi-directional meters shall be FB-1200 Series and shall include an isolated contact closure output for direction.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

END OF SECTION

SECTION 23 05 53 - IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT (*ADDENDUM 2)*

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Nameplates.

B. Pipe markers.

1.02 REFERENCE STANDARDS

A. ASME A13.1 - Scheme for the Identification of Piping Systems; 2007.

B. ASTM D709 - Standard Specification for Laminated Thermosetting Materials; 2013.

1.03 SUBMITTALS

A. See Division 1 for submittal procedures.

B. List: Submit list of wording, symbols, letter size, and color coding for mechanical identification.

C. Product Data: Provide manufacturers catalog literature for each product required.

PART 2 - PRODUCTS

2.01 IDENTIFICATION APPLICATIONS

A. Air Terminal Units: Nameplates.

B. Piping: Pipe markers.

2.02 NAMEPLATES

A. Manufacturers:

1. Kolbi Pipe Marker Co: www.kolbipipemarkers.com/#sle.

2. Seton Identification Products, a Tricor Direct Company: www.seton.com/#sle.

B. Nameplates:

1. Letter Color: White.
2. Letter Height: 1/4 inch.
3. Background Color: Black.
4. Plastic: Comply with ASTM D709.

2.03 PIPE MARKERS

A. Manufacturers:

1. Brady Corporation: www.bradycorp.com/#sle.
2. Kolbi Pipe Marker Co: www.kolbipipemarkers.com/#sle.
3. Seton Identification Products, a Tricor Company: www.seton.com/#sle.

B. Color: Comply with ASME A13.1.

C. Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure-sensitive adhesive backing and printed markings.

D. Color code as follows:

1. Toxic and Corrosive Fluids: Orange with black letters.

PART 3 - EXECUTION

3.01 PREPARATION

A. Degrease and clean surfaces to receive adhesive for identification materials.

3.02 INSTALLATION

A. Install nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.

B. Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.

END OF SECTION

SECTION 23 07 19 - HVAC PIPING INSULATIONS *(ADDENDUM 2)*

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Piping insulation.

1.02 REFERENCE STANDARDS

A. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2014.

B. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric]; 2014.

C. ASTM C534/C534M - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form; 2014.

D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

E. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials; National Fire Protection Association; 2006.

F. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. See Division 1 for submittal procedures.

B. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

C. Manufacturer's Instructions: Indicate installation procedures that ensure acceptable workmanship and installation standards will be achieved.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than three years of documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified in this section with minimum three years of experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Accept materials on site, labeled with manufacturer's identification, product density, and thickness.

1.06 FIELD CONDITIONS

A. Maintain ambient conditions required by manufacturers of each product.

B. Maintain temperature before, during, and after installation for minimum of 24 hours.

PART 2 - PRODUCTS

2.01 REGULATORY REQUIREMENTS

A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.02 FLEXIBLE ELASTOMERIC CELLULAR INSULATION

A. Manufacturers:

1. Armacell LLC; ArmaFlex Ultra with FlameDefense: www.armacell.us/#sle.

B. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 1; use molded tubular material wherever possible.

1. 'K' value: ASTM C 177; 0.27 at 75 degrees F.

2. Minimum Service Temperature: Minus 40 degrees F.

3. Maximum Service Temperature: 180 degrees F.

4. Water Vapor Permeability: 0.17 perm-inches, when tested in accordance with ASTM E 96.

5. Connection: Waterproof vapor barrier adhesive.

C. Elastomeric Foam Adhesive: Air dried, contact adhesive, compatible with insulation.

1. Manufacturers:

a. Armstrong 520 Adhesive.

2.03 JACKETING AND ACCESSORIES

A. Aluminum Jacket: ASTM B209 (ASTM B209M) formed aluminum sheet.

1. Thickness: 0.016 inch sheet.

2. Finish: Smooth.

3. Joining: Longitudinal slip joints and 2 inch laps.

4. Fittings: 0.016 inch thick die shaped fitting covers with factory attached protective liner.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Test piping for design pressure, liquid tightness, and continuity prior to applying insulation materials.

B. Verify that surfaces are clean and dry, with foreign material removed.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install in accordance with NAIMA National Insulation Standards.

C. Exposed Piping: Locate insulation and cover seams in least visible locations.

D. Exterior Applications:

1. Cover with aluminum jacket with seams located on bottom side of horizontal piping. Install with straps. The use of sheetmetal screws to attach jacketing is not allowed.

2. Provide two coats of UV resistant finish for flexible elastomeric cellular insulation without jacketing.

END OF SECTION

SECTION 23 23 00 - REFRIGERANT PIPING *(ADDENDUM 2)*

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Piping.

1.02 REFERENCE STANDARDS

A. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2013.

B. ASME B16.26 - Cast Copper Alloy Fittings for Flared Copper Tubes; 2013.

C. ASME B31.9 - Building Services Piping; 2014.

D. ASTM B88 - Standard Specification for Seamless Copper Water Tube; 2014.

E. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric); 2013.

F. ASTM B280 - Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service; 2013.

G. AWS A5.8M/A5.8 - Specification for Filler Metals for Brazing and Braze Welding; 2011-AMD 1.

H. ICC (IMC)-2018 - International Mechanical Code; 2018.

I. UL 207 - Standard for Refrigerant-Containing Components and Accessories, Nonelectrical; Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. Product Data: Provide general assembly of specialties, including manufacturers catalogue information. Provide manufacturers catalog data including load capacity.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing the type of work specified in this section, with minimum three years of documented experience.

1.05 REGULATORY REQUIREMENTS

A. Conform to ASME B31.9 for installation of piping system.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store piping and specialties in shipping containers with labeling in place.

B. Protect piping and specialties from entry of contaminating material by leaving end caps and plugs in place until installation.

C. Dehydrate and charge components such as piping and receivers, seal prior to shipment, until connected into system.

PART 2 - PRODUCTS

2.01 PIPING

A. Copper Tube: ASTM B280, H58 hard drawn.

1. Fittings: ASME B16.22 wrought copper.

2. Joints: Braze, AWS A5.8M/A5.8 BCuP silver/phosphorus/copper alloy.

3. Mechanical Press Sealed Fittings: Double pressed type complying with UL 207 and ICC (IMC)-2018.

B. Copper Tube to 7/8 inch OD: ASTM B88 (ASTM B88M), Type K (A), annealed.

1. Fittings: ASME B16.26 cast copper.

2. Joints: Flared.

3. Mechanical Press Sealed Fittings: Double pressed type complying with UL 207 and ICC (IMC)-2018.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install refrigeration specialties in accordance with manufacturer's instructions.

B. Route piping in orderly manner, with plumbing parallel to building structure, and maintain gradient.

C. Install piping to conserve building space and avoid interference with use of space.

D. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.

END OF SECTION

SECTION 23 31 00 - HVAC DUCTS AND CASINGS *(ADDENDUM 2)*

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Flexible ducts.

B. Metal ductwork.

1.02 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.

B. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; 2015.

C. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible; 2005.

D. UL 181 - Standard for Factory-Made Air Ducts and Air Connectors; current edition, including all revisions.

1.03 SUBMITTALS

A. See Division 1 for submittal procedures.

B. Product Data: Provide data for duct materials.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience, and approved by manufacturer.

B. Installer Qualifications: Company specializing in performing the type of work specified in this section, with minimum three years of documented experience.

1.05 FIELD CONDITIONS

A. Do not install duct sealants when temperatures are less than those recommended by sealant manufacturers.

B. Maintain temperatures within acceptable range during and after installation of duct sealants.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Provide UL Class 1 ductwork, fittings, hangers, supports, and appurtenances in accordance with NFPA 90A and SMACNA (DCS) guidelines unless stated otherwise.

B. Provide metal duct unless otherwise indicated. Fibrous glass duct can be substituted at the Contractor's option.

C. Acoustical Treatment: Provide sound-absorbing liners and sectional silencers for metal-based ducts in compliance with Section 23 33 19.

D. Duct Shape and Material in accordance with Allowed Static Pressure Range:

E. Duct Sealing and Leakage in accordance with Static Pressure Class:

F. Duct Fabrication Requirements:

1. Duct and Fitting Fabrication and Support: SMACNA (DCS) including specifics for continuously welded round and oval duct fittings.

2. Use reinforced and sealed sheet-metal materials at recommended gauges for indicated operating pressures or pressure class.

3. Construct tee's, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline. Where not possible and where rectangular elbows must be used, provide air foil turning vanes of perforated metal with glass fiber insulation.

4. Provide turning vanes of perforated metal with glass fiber insulation when acoustical lining is indicated.

5. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.

6. Provide turning vanes of perforated metal with glass fiber insulation when an acoustical lining is required.

7. Where ducts are connected to exterior wall louvers and duct outlet is smaller than louver frame, provide blank-out panels sealing louver area around duct. Use same material as duct, painted black on exterior side; seal to louver frame and duct.

G. Regulatory Requirements: Construct ductwork to comply with 1 standards.

2.02 DUCTWORK FABRICATION

A. Fabricate and support in accordance with SMACNA (DCS) and as indicated.

B. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.

C. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.

2.03 METAL DUCTS

A. Material Requirements:

1. Galvanized Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M FS Type B, with G60/Z180 coating.

2.04 FLEXIBLE DUCTS

A. Flexible Air Ducts:

1. UL 181, Class 1, multiple layers of aluminum laminate supported by helically wound spring steel wire.

2. Pressure Rating: From 10 in-wc positive to 1 in-wc negative.

3. Maximum Velocity: 4,000 fpm.

4. Temperature Range: Minus 20 to 210 degrees F.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install, support, and seal ducts in accordance with SMACNA (DCS).

B. During construction, provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering the ductwork system.

C. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.

D. Duct sizes indicated are inside precise dimensions. For lined ducts, maintain sizes inside lining.

E. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.

F. Install ductwork in accordance with SMACNA Guidelines for Seismic Restraints of Mechanical Systems.

END OF SECTION

SECTION 23 33 00 - DUCT ACCESSORIES *(ADDENDUM 2)*

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Volume control dampers.

1.02 REFERENCE STANDARDS

A. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; 2015.

B. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible; 2005.

1.03 SUBMITTALS

A. See Division 1 for submittal procedures.

B. Product Data: Provide for shop fabricated assemblies including volume control dampers. Include electrical characteristics and connection requirements.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

PART 2 - PRODUCTS

2.01 VOLUME CONTROL DAMPERS

A. Manufacturers:

1. AireTechnologies, Inc, a DMI Company: www.airetechnologies.com/#sle.
2. Nailor Industries, Inc: www.nailor.com/#sle.
3. Ruskin Company: www.ruskin.com/#sle.

B. Fabricate in accordance with 1 and as indicated.

C. Multi-Blade Damper: Fabricate of opposed blade pattern with maximum blade sizes 8 by 72 inch. Assemble center and edge crimped blades in prime coated or galvanized channel frame with suitable hardware.

1. Blade: 18 gage, 0.0478 inch, minimum.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install accessories in accordance with manufacturer's instructions.

B. Provide balancing dampers at points on supply, return, and exhaust systems where branches are taken from larger ducts as required for air balancing. Install minimum 2 duct widths from duct take-off.

C. Provide balancing dampers on duct take-off to diffusers, grilles, and registers, regardless of whether dampers are specified as part of the diffuser, grille, or register assembly.

END OF SECTION

SECTION 23 37 00 - AIR OUTLETS AND INLETS *(ADDENDUM 2)*

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Registers/grilles:

1. Ceiling-mounted, egg crate exhaust and return register/grilles.
2. Wall-mounted, supply register/grilles.

1.02 REFERENCE STANDARDS

A. AMCA 500-L - Laboratory Methods of Testing Louvers for Rating; 2012.

B. ASHRAE Std 70 - Method of Testing the Performance of Air Outlets and Inlets; 2006 (R2011).

1.03 SUBMITTALS

A. See Division 1 for submittal procedures.

B. Product Data: Provide data for equipment required for this project. Review outlets and inlets as to size, finish, and type of mounting prior to submission. Submit schedule of outlets and inlets showing type, size, location, application, and noise level.

C. Project Record Documents: Record actual locations of air outlets and inlets.

1.04 QUALITY ASSURANCE

A. Test and rate air outlet and inlet performance in accordance with ASHRAE Std 70.

B. Test and rate louver performance in accordance with AMCA 500-L.

C. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. American Louver Company; ALC Grilles and Registers: www.americanlouver.com/#sle.

B. Krueger-HVAC: www.krueger-hvac.com/#sle.

C. Ruskin Company: www.ruskin.com/#sle.

D. Titus, a brand of Air Distribution Technologies: www.titus-hvac.com/#sle.

2.02 CEILING EGG CRATE EXHAUST AND RETURN GRILLES

A. Type: Egg crate style face consisting of 1/2 by 1/2 by 1/2 inch grid core.

B. Fabrication: Grid core consists of aluminum with mill aluminum finish.

C. Frame: Channel lay-in frame for suspended grid ceilings.

2.03 WALL SUPPLY REGISTERS/GRILLES

A. Type: Streamlined and individually adjustable blades, 3/4 inch minimum depth, 3/4 inch maximum spacing with spring or other device to set blades, vertical face, single deflection.

B. Fabrication: Steel with 20 gauge, 0.0359 inch minimum frames and 22 gauge, 0.0299 inch minimum blades, steel and aluminum with 20 gauge, 0.0359 inch minimum frame, or aluminum extrusions, with factory baked enamel finish.

C. Damper: Integral, gang-operated opposed blade type with removable key operator, operable from face.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Check location of outlets and inlets and make necessary adjustments in position to comply with architectural features, symmetry, and lighting arrangement.

C. Install diffusers to ductwork with air tight connection.

D. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, despite whether dampers are specified as part of the diffuser, or grille and register assembly.

END OF SECTION

SECTION 23 81 29 - VARIABLE REFRIGERANT FLOW HVAC SYSTEMS *(ADDENDUM 2)*

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Refrigerant piping.

B. Indoor units.

C. Variable refrigerant volume HVAC system includes:

1. Outdoor/condensing unit(s).

2. Indoor/evaporator units.

1.02 REFERENCE STANDARDS

A. AHRI 210/240 - Standard for Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment; 2008.

B. AHRI 1230 - Performance Rating of Variable Refrigerant Flow (VRF) Multi-split Air-conditioning and Heat Pump Equipment; 2014, with Addendum 1.

C. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2010, with 2013 Supplements and Errata.

D. ITS (DIR) - Directory of Listed Products; current edition.

E. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

F. UL 1995 - Heating and Cooling Equipment; Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. See Division 1 for submittal procedures.

B. Product Data: Submit manufacturer's standard data sheets showing the following for each item of equipment, marked to correlate to equipment item markings indicated in Contract Documents:

1. Outdoor Units:

a. Refrigerant Type and Size of Charge.

b. Output and Input Cooling Capacity: Btu/h.

c. Output and Input Heating Capacity: Btu/h.

d. Cooling Input Power: Btu/h.

e. Heating Input Power: Btu/h.

f. Operating Temperature Range, Cooling and Heating.

g. Fan Capacity: Flow in cfm with respective fan curves.

h. Fan Curves.

i. External Static Pressure (ESP): In-wc.

j. Sound Pressure Level: dB(A).

k. Electrical Data: Complete including motor size.

1) Maximum Circuit Amps (MCA).

2) Maximum Fuse Amps (MFA).

3) Maximum Starting Current (MSC).

4) Full Load Amps (FLA).

5) Total Over Current Amps (TOCA).

6) Fan Motor: HP.

l. Weight and Dimensions.

m. Maximum number of indoor units that can be served.

n. Maximum refrigerant piping run from outdoor unit to indoor unit(s).

o. Maximum height difference between outdoor unit to Indoor unit(s), both above and below.

p. Control Options.

2. Indoor Units:

a. Output and Input Cooling Capacity: Btu/h.

b. Output and Input Heating Capacity: Btu/h.

c. Cooling Input Power: Btu/h.

d. Heating Input Power: Btu/h.

e. Fan Capacity: Flow in cfm with respective fan curves.

f. Fan Curves.

g. External Static Pressure (ESP): In-wc.

h. Sound Pressure level: dB(A).

i. Electrical Data: Complete including motor size.

1) Maximum Circuit Amps (MCA).

2) Maximum Fuse Amps (MFA).

3) Maximum Starting Current (MSC).

4) Full Load Amps (FLA).

5) Total Over Current Amps (TOCA).

6) Fan Motor: HP.

j. Maximum Lift of Built-in Condensate Pump.

k. Weight and Dimensions.

l. Control Options.

3. Control Panels: Complete data of controllers, input-output points, and zones.

C. Operating and Maintenance Data:

1. Manufacturer's complete standard instructions for each unit of equipment and control panel.

2. Custom-prepared system operation, troubleshooting, and maintenance instructions and recommendations.

3. Identification of replaceable parts and local source of supply.

D. Warranty: Executed warranty, made out in Owner's name.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Company that has been manufacturing variable refrigerant volume heat pump equipment for at least 5 years.

2. Company that provides system design software to installers.

B. Installer Qualifications: Trained and approved by manufacturer of equipment.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, and handle equipment and refrigerant piping according to manufacturer's recommendations.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Mitsubishi Electric Trane HVAC US, LLC: www.metahvac.com/#sle.

2.02 HVAC SYSTEM DESIGN

A. System Operation: Heating or cooling, selected at system level.

1. Zoning: Provide capability for temperature control for each individual indoor/evaporator unit independently of all other units.

2. Provide a complete functional system that achieves the specified performance based on the specified design conditions and that is designed and constructed according to the equipment manufacturer's requirements.

3. Conditioned spaces are indicated on drawings.

4. Required equipment unit capacities are indicated on drawings.

5. Refrigerant piping sizes are not indicated on drawings.

6. Connect equipment to condensate piping provided by others; condensate piping is indicated on drawings.

B. Cooling Mode Interior Performance:

1. Daytime Setpoint: 68 degrees F, plus or minus 2 degrees F.

2. Setpoint Range: 57 degrees F to 77 degrees F.

3. Night Setback: 78 degrees F.

4. Interior Relative Humidity: 20 percent, maximum.

C. Heating Mode Interior Performance:

1. Daytime Setpoint: 68 degrees F, plus or minus 2 degrees F.

2. Setpoint Range: 59 degrees F to 80 degrees F.

3. Night Setback: 60 degrees F.

4. Interior Relative Humidity: 10 percent, minimum.

D. Outside Air Design Conditions:

E. Energy Design Wind Speed: 25 mph.

F. Operating Temperature Ranges:

1. Simultaneous Heating and Cooling Operating Range: minus 4 degrees F to 60 degrees F dry bulb.

2. Cooling Mode Operating Range: minus 4 degrees F to 110 degrees F dry bulb.

3. Heating Mode Operating Range: 0 degrees F to 77 degrees F dry bulb; minus 4 degrees F to 60 degrees F wet bulb; without low ambient controls or auxiliary heat source.

G. Refrigerant Piping Lengths: Provide equipment capable of serving system with following piping lengths without any oil traps:

1. Minimum Piping Length from Outdoor/Central Unit(s) to Furthest Terminal Unit: 540 feet, actual; 620 feet, equivalent.

2. Total Combined Liquid Line Length: 3280 feet, minimum.

3. Minimum Piping Length Between Indoor Units: 49 feet.

H. Control Wiring Lengths:

1. Between Outdoor/Condenser Unit and Indoor/Evaporator Unit: 6,665 feet, minimum.

2. Between Outdoor/Condenser Unit and Central Controller: 3,330 feet, minimum.

3. Between Indoor/Evaporator Unit and Remote Controller: 1,665 feet.

I. Controls: Provide the following control interfaces:

1. BACNet gateways sufficient to connect all units to building automation system by others; include wiring to gateways.

2.03 VARIABLE REFRIGERANT FLOW SYSTEM

A. Minimum System Requirements:

1. System Testing, Capacity Rating, and Performance:

   a. AHRI 1230 when cooling capacity is equal or greater than 65,000 Btu/h.

   b. AHRI 210/240 when cooling capacity is below 65,000 Btu/h.

2. Safety Certification: Bear UL 1995 tested and ITS (DIR) listed certification label.

3. Outdoor Units: Furnish installation and surface support hardware products in accordance with ASCE 7 for wind restraint.

4. Cooling Mode Interior Performance:

   a. Daytime Setpoint: 68 degrees F, plus or minus 2 degrees F.

   b. Setpoint Range: 57 degrees F to 77 degrees F.

   c. Night Setback: 78 degrees F.

   d. Interior Relative Humidity: 20 percent, maximum.

B. All Units: Factory assembled, wired, and piped and factory tested for function and safety.

1. Performance Certification: AHRI Certified; www.ahrinet.org.

2. Safety Certification: Tested to UL 1995 by UL or Intertek-ETL, listed in ITS (DIR), and bearing the certification label.

3. Provide outdoor/condensing units capable of serving indoor unit capacity up to 200 percent of the capacity of the outdoor/condensing unit.

4. Provide units capable of serving the zones indicated.

5. Thermal Performance: Provide heating and cooling capacity as indicated, based on the following nominal operating conditions:

6. Energy Efficiency: Report EER and COP based on tests conducted at “full load” in accordance with AHRI 210/240 or alternate test method approved by U.S. Department of Energy.

C. Electrical Characteristics:

1. Power - Indoor Units: 208 to 230 Volts, single phase, 60 Hz.

2. 208-230 Voltage Range: 187 to 253 volts.

D. Refrigerant Piping:

1. Insulate each refrigerant line individually between the condensing and indoor units.

2.04 REFRIGERANT PIPING

A. Two-Pipe Run: Provide low-pressure vapor and high-pressure vapor gas pipes for each indoor unit selected for seasonal heating or cooling service.

B. Refrigerant Flow Balancing: Provide refrigerant piping joints and headers specifically designed to ensure proper refrigerant balance and flow for optimum system capacity and performance; T-style joints are prohibited.

2.05 OUTDOOR/CONDENSING UNITS

A. Outdoor/Condensing Units: Air-cooled DX refrigeration units, designed specifically for use with indoor/evaporator units; factory assembled and wired with all necessary electronic and refrigerant controls; modular design for ganging multiple units.

1. Refrigeration Circuit: Scroll compressors, motors, fans, condenser coil, electronic expansion valves, solenoid valves, 4-way valve, distribution headers, capillaries, filters, shut off valves, oil separators, service ports and refrigerant regulator.

2. Refrigerant: Factory charged.

3. Variable Volume Control: Modulate compressor capacity automatically to maintain constant suction and condensing pressures while varying refrigerant volume to suit heating/cooling loads.

4. Capable of being installed with wiring and piping to the left, right, rear or bottom.

5. Capable of heating operation at low end of operating range as specified, without additional low ambient controls or auxiliary heat source; during heating operation, reverse cycle (cooling mode) oil return or defrost is not permitted, due to potential reduction in space temperature.

6. Sound Pressure Level: As specified, measured at 3 feet from front of unit; provide night setback sound control as a standard feature; three selectable sound level steps of 55 dB, 50 dB, and 45 dB, maximum.

7. Power Failure Mode: Automatically restart operation after power failure without loss of programmed settings.

8. Safety Devices: High pressure sensor and switch, low pressure sensor/switch, control circuit fuses, crankcase heaters, fusible plug, overload relay, inverter overload protector, thermal protectors for compressor and fan motors, over current protection for the inverter and anti-recycling timers.

9. Provide refrigerant sub-cooling to ensure the liquid refrigerant does not flash when supplying to us indoor units.

10. Oil Recovery Cycle: Automatic, occurring 2 hours after start of operation and then every 8 hours of operation; maintain continuous heating during oil return operation.

11. Controls: Provide contacts for electrical demand shedding.

B. Unit Cabinet: Weatherproof and corrosion resistant; rust-proofed mild steel panels coated with baked enamel finish.

1. Designed to allow side-by-side installation with minimum spacing.

C. Fans: One or more direct-drive propeller type, vertical discharge, with multiple speed operation via DC (digitally commutating) inverter.

1. Provide minimum of 2 fans for each condensing unit.

2. External Static Pressure: Factory set at 0.12 in WG, minimum.

3. Indoor Mounted Air-Cooled Units: External static pressure field set at 0.32 in WG, minimum; provide for mounting of field-installed ducts.

4. Fan Airflow: As indicated for specific equipment.

5. Fan Motors: Factory installed; permanently lubricated bearings; inherent protection; fan guard; output as indicated for specific equipment.

D. Condenser Coils: Copper tubes expanded into aluminum fins to form mechanical bond; waffle louver fin and rifled bore tube design to ensure high efficiency performance.

E. Compressors: Scroll type, hermetically sealed, variable speed inverter-driven and fixed speed in combination to suit total capacity; minimum of one variable speed, inverter driven compressor per condenser unit; minimum of two compressors per condenser unit; capable of controlling capacity within range of 6 percent to 100 percent of total capacity.

1. Multiple Condenser Modules: Balance total operation hours of compressors by means of duty cycling function, providing for sequential starting of each module at each start/stop cycle, completion of oil return, and completion of defrost, or every 8 hours.

2. Failure Mode: In the event of compressor failure, operate remaining compressor(s) at proportionally reduced capacity; provide microprocessor and associated controls specifically designed to address this condition.

3. Provide each compressor with crankcase heater, high pressure safety switch, and internal thermal overload protector.

4. Provide oil separators and intelligent oil management system.

5. Provide spring mounted vibration isolators.

2.06 INDOOR UNITS

A. Manufacturers:

1. 3 by 3 ft, 4-way, Ceiling-Recessed Cassette, Indoor Units:

   a. Mitsubishi Electric Trane HVAC US, LLC; _____: www.metahvac.com/#sle.

B. Minimum Unit Requirements:

1. DX Evaporator Coil:

   a. Copper tubes expanded into aluminum fins to form a mechanical bond; waffle louver fin and high heat exchange, rifled bore tube design; factory tested.

   b. 2-, 3-, or 4-row cross fin design with 14 to 17 fins per inch and flare end-connections.

   c. Provide thermistor on liquid and gas lines wired into local controller.

   d. Refrigerant circuits factory-charged with dehydrated air for field charging.

2. Fan Section:

   a. Variable or three-speed ECM fan with automatic airflow adjustment; external static pressure selectable during commissioning.

   b. Thermally protected, direct-drive motor with statically and dynamically balanced fan blades.

   c. Minimum-adjustable external static pressure 0.32 in-wc; provide for mounting of field-installed ducts.

3. Local Unit Controls:

   a. Temperature Control: Return air control using thermistor tied to computerized Proportional-Integral-Derivative (PID) control of superheat.

   b. Temperature Zones:

      1) Single Indoor Unit: Set served space(s) as the local temperature zone.

      2) Multiple Indoor Units: For large zones, group and coordinate related indoor units with served spaces as the local temperature zone with each indoor unit as sub-zone.

4. Return Air Filter:

   a. High efficiency, MERV 13, monitored with adjustable static pressure switch.

5. Condensate:

a. Built-in condensate drain pan with PVC drain connection for drainage.

b. Units With Built-In Condensate Pumps: Provide condensate safety shutoff and alarm.

c. Units Without Built-In Condensate Pump: Provide built-in condensate float switch and wiring connections.

6. Cabinet Insulation: Sound absorbing foamed polystyrene and polyethylene insulation.

C. All Indoor/Evaporator Units: Factory assembled and tested DX fan-coil units, with electronic proportional expansion valve, control circuit board, factory wiring and piping, self-diagnostics, auto-restart function, 3-minute fused time delay, and test run switch.

1. Refrigerant: Refrigerant circuits factory-charged with dehydrated air, for field charging.

2. Temperature Control Mechanism: Return air thermistor and computerized Proportional-Integral-Derivative (PID) control of superheat.

3. Coils: Direct expansion type constructed from copper tubes expanded into aluminum fins to form a mechanical bond; waffle louver fin and high heat exchange, rifled bore tube design; factory tested.

a. Provide thermistor on liquid and gas lines.

4. Fans: Direct-drive, with statically and dynamically balanced impellers; high and low speeds unless otherwise indicated; motor thermally protected.

5. Return Air Filter: Washable long-life net filter with mildew proof resin, unless otherwise indicated.

6. Condensate Drainage: Built-in condensate drain pan with PVC drain connection.

7. Cabinet Insulation: Sound absorbing foamed polystyrene and polyethylene insulation.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that required electrical services have been installed and are in the proper locations prior to starting installation.

B. Verify that condensate piping has been installed and is in the proper location prior to starting installation.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install refrigerant piping in accordance with equipment manufacturer's instructions.

C. Perform wiring in accordance with NFPA 70, National Electric Code (NEC).

D. Coordinate with installers of systems and equipment connecting to this system.

3.03 SYSTEM STARTUP

A. Prepare and start equipment and system in accordance with manufacturer's instructions and recommendations.

B. Adjust equipment for proper operation within manufacturer's published tolerances.

END OF SECTION

Solano CCD BLDG 300 Modernization

4000 SUISUN VALLEY RD, FAIRFIELD, CA 94534

SOLANO COMMUNITY COLLEGE DISTRICT

CONSTRUCTION DOCUMENTS

DSA FILE NUMBER	48-C1
DSA APP. NUMBER	02-120607

ABBREVIATIONS

&	AND	LAB.	LABORATORY
@	AT	LAM.	LAMINATE
A.B.	ANCHOR BOLT	LAV.	LAVATORY
ABV.	ABOVE	LKR.	LOCKER
A.C.	ASPHALTIC CONCRETE	LT.	LIGHT
ACT	ACOUSTIC TILE		
ADJ.	ADJUSTABLE	MAX.	MAXIMUM
A.F.F.	ABOVE FINISHED FLOOR	M.B.	MACHINE BOLT
ALUM.	ALUMINUM	MECH.	MECHANICAL
A.P.	ACCESS PANEL	MFR.	MANUFACTURER
APPROX.	APPROXIMATELY	M.H.	MANHOLE
ARCH.	ARCHITECT	MIN.	MINIMUM
		MIR.	MIRROR
BD.	BOARD	MISC.	MISCELLANEOUS
BLDG.	BUILDING	M.O.	MASONRY OPENING
BLKG.	BLOCKING	M.S.	MACHINE SCREW
BM	BEAM	MTD.	MOUNTED
B.M.	BENCH MARK	MTL.	METAL
BOT.	BOTTOM	MUL.	MULLION
BTWN.	BETWEEN		
B.W.	BOTH WAYS	(N)	NEW
		N.	NORTH
CAB.	CABINET	N.I.C.	NOT IN CONTRACT
C.B.	CATCH BASIN	NO. or #	NUMBER
C.C or O.C.	CENTER TO CENTER	NOM.	NOMINAL
CEM.	CEMENT	N.T.S.	NOT TO SCALE
CER. TILE	CERAMIC TILE		
C.G.	CORNER GUARD	OBS.	OBSCURE
C.I.	CAST IRON	O.C.	ON CENTER
C.J.	CONTROL JOINT	OCC.	OCCUPANT(CY)
CLG.	CEILING	O.D.	OVERFLOW DRAIN and/or OUTSIDE DIAMETER
CLKG.	CAULKING	O.F.O.S.	OUTSIDE FACE OF STUD
CLR.	CLEAR	O.F.C.I.	OWNER FURNISHED and CONTRACTOR INSTALLED
CMU	CONCRETE MASONRY UNIT	O.H.	OPPOSITE HAND
CNTR.	COUNTER	OPNG.	OPENING
C.O.	CLEANOUT	OPP.	OPPOSITE
COL.	COLUMN		
CONC.	CONCRETE		
CONST.	CONSTRUCTION	P.A.F.	POWDER ACTUATED FASTENER
CONT.	CONTINUOUS	PL.	PLATE
CONTR.	CONTRACTOR	P.L.	PROPERTY LINE
C.P.	CONCRETE PIPE	P. LAM	PLASTIC LAMINATE
CTR.	CENTER	PLAS.	PLASTER
CTSK.	COUNTER SUNK	PLYWD.	PLYWOOD
C.W.	COLD WATER	PR.	PAIR
		PTD.	PAINTED
D.A.	DISABLED ACCESS	PTN.	PARTITION
DBL	DOUBLE		
D.F.	DRINKING FOUNTAIN	Q.T.	QUARRY TILE
D.FIR	DOUGLAS FIR		
DTL.	DETAIL	R. or RAD.	RADIUS
DIA. or Ø	DIAMETER	R.C.P.	REINFORCED CONCRETE PIPE
DIM.	DIMENSION	R.D.	ROOF DRAIN
DISP.	DISPOSAL	R.E.	RIM ELEVATION
DN	DOWN	REF.	REFERENCE
DO	DITTO	REINF.	REINFORCING
DR.	DOOR	REQ'D	REQUIRED
DS.	DOWNSPOUT	R.H.M.S.	ROUND HEAD METAL SCREW
DWG.	DRAWING	R.H.W.S.	ROUND HEAD WOOD SCREW
		RM.	ROOM
(E)	EXISTING	R.O.	ROUGH OPENING
E.	EAST	RWD.	REDWOOD
EA.	EACH	R.W.L.	RAIN WATER LEADER
E.J.	EXPANSION JOINT		
ELEC.	ELECTRIC or ELECTRICAL	S	SOUTH
EL.	ELEVATION	S.A.D.	SEE ARCHITECTURAL DRAWINGS
ELEV.	ELEVATOR	S.C.	SOLID CORE
ENCL.	ENCLOSE and/or ENCLOSURE	S.C.D.	SEE CIVIL DRAWINGS
EQ.	EQUAL	SCHED.	SCHEDULE
EQUIP.	EQUIPMENT	S.E.D.	SEE ELECTRICAL DRAWINGS
E.W.	EACH WAY	S.F.	SQUARE FEET
E.W.C.	ELECTRIC WATER COOLER	SHEATH.	SHEATHING
EX.	EXPANSION	SHT.	SHEET
EXP	EXPOSED	SIM.	SIMILAR
EXT.	EXTERIOR	S.L.D.	SEE LANDSCAPE DRAWINGS
		S.M.	SHEET METAL
F.A.	FIRE ALARM	S.M.D.	SEE MECHANICAL DRAWINGS
F.D.	FLOOR DRAIN	S.M.S.	SHEET METAL SCREW
FDN.	FOUNDATION	S.O.V.	SHUT OFF VALVE
F.E.	FIRE EXTINGUISHER	S.P.D.	SEE PLUMBING DRAWINGS
F.E.C.	FIRE EXTINGUISHER CABINET	SPEC.	SPECIFICATIONS
F.H.	FIRE HYDRANT	SQ. or Ø	SQUARE
F.H.C.	FIRE HOSE CABINET	S.S.	STAINLESS STEEL
F.H.S.M.S.	FLAT HEAD SHEET METAL SCREW	S.S.D.	SEE STRUCTURAL DRAWINGS
F.H.W.S.	FLAT HEAD WOOD SCREW	STAG.	STAGGERED
FIN.	FINISH	STD.	STANDARD
FL. or FLR.	FLOOR	STL.	STEEL
F.O.C.	FACE OF CONCRETE	STOR.	STORAGE
F.O.F.	FACE OF FINISH	STRUCT.	STRUCTURAL
F.O.M.	FACE OF MASONRY	S.T.S.M.S.	SELF TAPPING SHEET METAL SCREW
F.O.S.	FACE OF STUD	SUSP.	SUSPENDED
F.S.	FINISH SLAB		
FT.	FOOT OR FEET	T & G.	TONGUE & GROOVE
FTG.	FOOTING	TEL.	TELEPHONE
FURR.	FURRING	TERR.	TERRAZZO
		THRES.	THRESHOLD
GA.	GAUGE	T.J.	TOOLED JOINT
GALV.	GALVANIZED	T.O.B.	TOP OF BEAM
G.B.	GRAB BAR	T.O.C.	TOP OF CURB or CONCRETE
G.I.	GALVANIZED IRON	T.O.S.	TOP OF STEEL or SLAB
GL.	GLASS	T.O.W.	TOP OF WALL
GLU-LAM	GLUE-LAMINATED	TYP.	TYPICAL
GND.	GROUND		
GR.	GRADE	U.O.N.	UNLESS OTHERWISE NOTED
GYP.	GYPSUM		
		VERT.	VERTICAL
H.B.	HOSE BIBB	V.C.P.	VITRIFIED CLAY PIPE
H.C.	HOLLOW CORE	V.C.T.	VINYL COMPOSITION TILE
HDWD.	HARDWOOD	V.G.	VERTICAL GRAIN
HDWR.	HARDWARE	V.I.F.	VERIFY IN FIELD
H.M.	HOLLOW METAL	V.T.R.	VENT THROUGH ROOF
HORIZ.	HORIZONTAL	V.W.C.	VINYL WALL COVERING
HR.	HOUR		
HT.	HEIGHT	W	WEST
		W/	WITH
I.D.	INSIDE DIAMETER	W.C.	WATER CLOSET
INSUL.	INSULATION	WD.	WOOD
INT.	INTERIOR	W.H.	WATER HEATER
INV.	INVERT	W/O	WITHOUT
		W.O.	WHERE OCCURS
JAN.	JANITOR	WP.	WATERPROOF / WEATHERPROOF
JT	JOINT	W. PT.	WORKING POINT
		W.R.	WATER RESISTANT
K.D.	KILN DRIED	WT.	WEIGHT

BOARD OF TRUSTEES

SARAH E. CHAPMAN PH.D.	(PRESIDENT)
KARIMAH KARAH, J.D.	(VICE PRESIDENT)
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ASHLEY TIGUE (STUDENT TRUSTEE)

SUPERINTENDANT/ PRESIDENT
DR. CELIA ESPOSITO-NOY

CONSULTANTS

MECHANICAL-ELECTRICAL-PLUMBING

SALAS O'BRIEN
305 S 11TH STREET
SAN JOSE, CA 95112
(408) 282-1500

STRUCTURAL

RESPONSE STRUCTURAL ENGINEERS
5441 FAIR OAKS BLVD, SUITE G2
CARMICHAEL, CA 95608
(916) 680-9922

ADMINISTRATIVE REQUIREMENTS

1. A COPY OF PART 1 AND 2 CCR SHALL BE KEPT ON SITE AT ALL TIMES.
2. ALL CONSTRUCTION CHANGE DOCUMENTS AND ADDENDA TO BE SIGNED BY THE ARCHITECT, THE OWNER, AND APPROVED BY DSA. CONSTRUCTION CHANGE DOCUMENTS ARE NOT VALID UNTIL APPROVED BY DSA PER SECTION 4-338.
3. ALL TESTS TO CONFORM TO THE REQUIREMENTS OF SECTION 4-335.
4. ALL WORK SHALL CONFORM TO 2019 TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).
5. TESTS OF MATERIALS AND TESTING LABORATORY SHALL BE IN ACCORDANCE WITH SECTION 4-335.
6. DSA SHALL BE NOTIFIED AT THE START OF CONSTRUCTION AND PRIOR TO PLACEMENT OF CONCRETE PER SECTION 4-331.
7. A "DSA CERTIFIED" PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE DSA SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR.
8. SUPERVISION OF CONSTRUCTION BY DSA SHALL BE IN ACCORDANCE WITH 4-334.
9. CONTRACTOR, INSPECTOR, ARCHITECT, AND ENGINEERS SHALL SUBMIT VERIFIED REPORTS (FORM 6) IN ACCORDANCE WITH SECTION 4-336 AND 4-343.
10. THE ARCHITECT AND THE STRUCTURAL ENGINEERS SHALL PERFORM THEIR DUTIES IN ACCORDANCE WITH SECTIONS 4-333(a) AND 4-341.
11. FABRICATION AND INSTALLATION OF DEFERRED SUBMITTAL ITEMS SHALL NOT BE STARTED UNTIL CONTRACTOR'S DRAWINGS, SPECIFICATIONS, AND ENGINEERING CALCULATIONS FOR THE ACTUAL SYSTEMS TO BE INSTALLED HAVE BEEN ACCEPTED AND SIGNED BY THE ARCHITECT OR STRUCTURAL ENGINEER AND APPROVED BY THE DSA. LIST DEFERRED SUBMITTAL ITEMS FOR THIS PROJECT.
12. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, CCR.
13. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
14. SUBSTITUTIONS THAT AFFECT ACCESSIBILITY, FIRE-LIFE SAFETY, AND STRUCTURAL SAFETY PORTIONS OF THE WORK SHALL BE SUBMITTED TO DSA FOR REVIEW AND APPROVAL.
15. THE CONTRACTOR SHALL PERFORM HIS DUTIES IN ACCORDANCE WITH SECTION 4-343.
16. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CCR. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR, A CONSTRUCTION CHANGE DOCUMENT (CCD), OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK. (SECTION 4-317(C), PART 1, TITLE 24, CCR).
17. DSA IS NOT SUBJECT TO ARBITRATION.

GENERAL NOTES

1. ITEMS OF A CIVIL, LANDSCAPE, STRUCTURAL, MECHANICAL, OR ELECTRICAL NATURE MAY NOT APPEAR ON THE ARCHITECTURAL DRAWINGS. SEE APPROPRIATE DRAWINGS FOR THESE ITEMS.
2. DIVISION OF THE STATE ARCHITECT (DSA) APPROVAL OF THIS APPLICATION DOES NOT INCLUDE FUTURE OR N.I.C. ITEMS.
3. ALL DEFERRED APPROVAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT AND THE APPROPRIATE CONSULTING ENGINEER FOR REVIEW & APPROVAL PRIOR TO SUBMITTING TO DSA FOR CHECKING & APPROVAL.
4. THE FIRE SUPPRESSION SYSTEM, I.E. AUTOMATIC SPRINKLERS, HOOD-DUCT SYSTEM, WET STANDPIPES, AND HYDRANTS SHALL NOT BE INSTALLED UNTIL SHOP DRAWINGS HAVE BEEN APPROVED BY THE FIRE & LIFE SAFETY SECTION AT DSA.
5. THE FIRE PROTECTION SIGNALING SYSTEM SHALL NOT BE INSTALLED UNTIL SHOP DRAWINGS, INCLUDING FIRE MARSHAL LISTING NUMBER FOR EACH COMPONENT OF THE SYSTEM, HAS BEEN SUBMITTED AND APPROVED BY THE STATE FIRE MARSHAL AT DSA.
6. FOOD HANDLING FACILITIES SHALL COMPLY WITH ALL LOCAL HEALTH DEPARTMENT REQUIREMENTS & CALIFORNIA UNIFORM RETAIL FOOD FACILITIES LAW.
7. PRIOR TO BIDDING, THE GENERAL CONTRACTOR SHALL VISIT & INSPECT THE SITE TO FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AFFECTING THE NEW WORK. THE GENERAL CONTRACTOR SHALL NOT DISPUTE, COMPLAIN, OR ASSERT THAT THERE IS ANY MISUNDERSTANDING IN REGARDS TO LOCATION, EXTENT, NATURE, OR AMOUNT OF WORK TO BE PERFORMED UNDER THIS CONTRACT DUE TO THE CONTRACTOR'S FAILURE TO INSPECT THE SITE AND/OR FAILURE TO INSPECT THE CONTRACT DOCUMENTS.
8. THE GENERAL CONTRACTOR & SUBCONTRACTORS ARE RESPONSIBLE FOR LOCATING & VERIFYING ALL EXISTING UNDERGROUND UTILITIES IN ALL AREAS OF THE NEW WORK PRIOR TO COMMENCEMENT OF EXCAVATION. EXISTING UTILITIES SHOWN ON THE DRAWINGS ARE APPROXIMATE ROUTING LOCATIONS AS BEST DETERMINED FROM EXISTING DRAWINGS & BY THE SCHOOL DISTRICT, BUT SHOULD NOT BE CONSTRUED TO REPRESENT ALL EXISTING UTILITIES.
9. ANY ALTERATIONS OF EXISTING FACILITIES TO ACCOMMODATE THE INSTALLATION OF NEW WORK SHALL BE REVIEWED BY THE ARCHITECT PRIOR TO COMMENCEMENT OF WORK.
10. ALL EXISTING FINISHES OR MATERIALS DAMAGED OR DEMOLISHED DUE TO NEW CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL STATE OR REPLACED WITH NEW MATERIALS FINISHED TO MATCH EXISTING.
11. CONTRACTOR SHALL COORDINATE ALL WORK TO AVOID DISRUPTION OF STUDENTS OR TEACHERS DURING SCHOOL HOURS. ANY DISRUPTION OF POWER, TELEPHONE, OR HVAC SYSTEMS MUST BE COORDINATED AND APPROVED BY THE DISTRICT REPRESENTATIVE PRIOR TO ANY WORK COMMENCING.
12. COMPLIANCE WITH CFC CHAPTER 33 (FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION) AND CBC CHAPTER 33 (SAFEGUARDS DURING CONSTRUCTION) WILL BE ENFORCED.
13. A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT.

APPLICABLE CODES

1. 2022 BUILDING STANDARDS ADMINISTRATION CODE (PART 1, TITLE 24, CCR)
2. 2019 CALIFORNIA BUILDING CODE (PART 2, VOLUMES 1 AND 2, TITLE 24, CCR)
3. 2019 CALIFORNIA ELECTRICAL CODE (PART 3, TITLE 24, CCR)
4. 2019 CALIFORNIA MECHANICAL CODE (PART 4, TITLE 24, CCR)
5. 2019 CALIFORNIA PLUMBING CODE (PART 5, TITLE 24, CCR)
6. 2019 CALIFORNIA ENERGY CODE (PART 6, TITLE 24, CCR)
7. 2019 CALIFORNIA FIRE CODE (PART 9, TITLE 24, CCR)
8. 2019 CALIFORNIA EXISTING BUILDING CODE (PART 10, TITLE 24, CCR)
9. 2019 CALGREEN BUILDING STANDARDS CODE (PART 11, TITLE 24, CCR)
10. 2019 CALIFORNIA REFERENCED STANDARDS CODE (PART 12, TITLE 24, CCR)
11. TITLE 19, CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

REFERENCE STANDARDS

PARTIAL LIST OF APPLICABLE STANDARDS (AS REFERENCED IN 2019 CBC - CHAPTER 35 & CFC):

PARTIAL LIST OF APPLICABLE STANDARDS (AS REFERENCED IN 2019 CBC - CHAPTER 35 & CFC):

ADA STANDARDS FOR ACCESSIBLE DESIGN (APPENDIX A OF 28 CFR PART 36)		2010 EDITION
ASME 17.1	2016 SAFETY CODE FOR ELEVATORS AND ESCALATORS (ASME A17.1-2016/CSA B44-16)	2019 EDITION
NFPA 13	STANDARD FOR INSTALLATION OF SPRINKLER SYSTEMS	2016 EDITION
NFPA 14	STANDARD FOR THE INSTALLATION OF STANDPIPE AND HOSE SYSTEMS	2016 EDITION
NFPA 17	STANDARD FOR DRY CHEMICAL EXTINGUISHING SYSTEMS	2017 EDITION
NFPA 17-A	STANDARD FOR WET CHEMICAL EXTINGUISHING SYSTEMS	2017 EDITION
NFPA 20	STANDARD FOR THE INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION	2016 EDITION
NFPA 22	STANDARD FOR WATER TANKS FOR PRIVATE FIRE PROTECTION	2018 EDITION
NFPA 24	STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES	2016 EDITION
NFPA 72	NATIONAL FIRE ALARM AND SIGNALING CODE	2016 EDITION
NFPA 80	STANDARD FOR FIRE DOOR AND OTHER OPENING PROTECTIVES	2016 EDITION
NFPA 110	STANDARD FOR EMERGENCY AND STANDBY POWER SYSTEMS	2016 EDITION
NFPA 2001	STANDARD ON CLEAN AGENT FIRE EXTINGUISHER SYSTEMS	2015 EDITION
ICC 300	BLEACHERS, FOLDING AND TELESCOPIC SEATING AND GRANDSTANDS	2017 EDITION

SYMBOL LEGEND

REFER TO ARCHITECTURAL FLOR PLAN SHEETS AND CONSULTANT DRAWINGS FOR ADDITIONAL SYMBOLS AND REFERENCE DESIGNATIONS

DIMENSION REFERENCE

10" — FACE OF OBJECT

10" — CENTER LINE OF OBJECT

TAGS AND MARKERS

0 — PLAN REFERECE GRID

STRUCTURAL GRID LINE

1 — REVISION MARKER

Room name / 101 — ROOM LABEL; ROOM NAME; ROOM NUMBER

1 — WALL TYPE MARKER

101a — DOOR ID; DOOR DESIGNATION; ROOM NUMBER

℄ — CENTER LINE

XX-1 — FINISH TAG

XX-1 — FLOOR FINISH TAG

XX.XXX — KEYNOTE; ITEMS TO BE PROVIDED NEW, UON.

MATERIALS REFERENCE

EARTH
GRAVEL / ROCK
CONCRETE
CONCRETE BLOCK (CMU)
SAND, GROUT, OR PLASTER
STEEL
PLYWOOD
WOOD, CONTINUOUS MEMBER
WOOD, BLOCKING
WOOD, FINISH GRADE

CABINET TYPES

PC - PREFINISHED CABINETS
PM - PREFINISHED MOBILE CABINETS
PR - PREFINISHED MOVEABLE CABINETS
PU - PREFINISHED UTILITY CABINETS
PS - SCIENCE CABINETS

NOTE: REFER TO SPECIFICATIONS FOR SPECIFIC CABINET TYPE REQUIREMENTS.

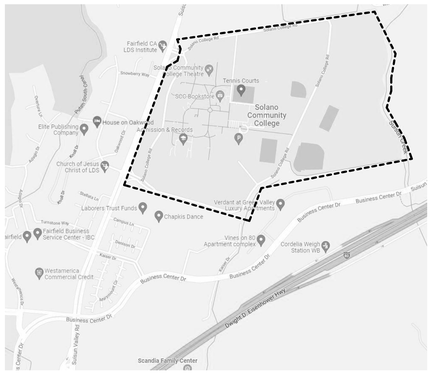
SECTION REFERENCE

1 / A12.08 / SIM — SECTION NUMBER; REFERENCE LABEL WHERE OCCURES; SHEET NUMBER

DETAIL REFERENCE

1 / A12.08 / SIM — DETAIL NUMBER; REFERENCE LABEL WHERE OCCURES; SHEET NUMBER

LOCATION MAP



SCOPE OF WORK

THE SCOPE OF WORK INCLUDES, BUT IS NOT LIMITED TO; HVAC UPGRADES TO THE CONTROLS AND VALVES AS WELL AS MOTORS AND COMPONENTS WITHOUT REMOVAL OF EXISTING EQUIPEMENT.REMOVAL AND REPLACEMENT OF EXISTING ROOFING, REMOVAL AND REPLACEMENT OF CEILING TILES, RESTROOMS AND ADA UPGRADES ON PATH OF TRAVEL.

THE SCOPE OF WORK ALSO INCLUDES THE CONVERSION OF A LAB CLASSROOM TO ADJUNCT FACULTY OFFICES.

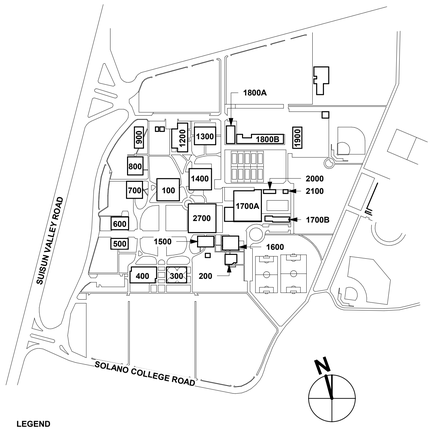
ADD ALTERNATE #1

FIRE-SPRINKLER REMOVAL: REMOVE (E) ABANDONED FIRE SPRINKLERS SYSTEM IN ROOM 326, CENTRAL SUPPLY.

DEFERRED SCOPE

NONE

BUILDING KEY



LEGEND

BUILDINGS IN SCOPE

DRAWING INDEX

ARCHITECTURAL

AD2 - T1	TITLE SHEET
A0.01	FIRE DEPARTMENT ACCESS PLAN
AD2 - A0.04	EXIT ANALYSIS AND BUILDING CODE ANALYSIS
A0.07	40SA FORM
A1.01	DEMOLITION SITE PLAN
A1.02	NEW SITE PLAN
A1.03	ENLARGED SITE PLAN
A1.05	SITE DETAILS
AD2 - A2.01	DEMOLITION FLOOR PLAN
AD2 - A3.01	NEW FLOOR PLAN
AD2 - A3.02	ENLARGED DEMO & FLOOR PLAN - ROOM 303 ADJUNCT FACULTY OFFICES
AD2 - A3.10	ENLARGED RESTROOM PLANS & ELEVATIONS
AD2 - A4.00	DEMO REFLECTED CEILING PLAN
AD2 - A4.01	PROPOSED REFLECTED CEILING PLAN
AD2 - A4.02	ENLARGED DEMO & NEW RCP - ROOM 303 ADJUNCT FACULTY OFFICES
AD2 - A5.01	DEMO AND NEW ROOF PLAN
AD2 - A8.10	EXTERIOR DETAILS
A8.11	EXTERIOR DETAILS
AD2 - A9.01	WALL TYPES AND DETAILS
AD2 - A9.10	INTERIOR DETAILS
A10.01	OPENING SCHEDULE & TYPES
AD2 - A11.01	FINISH SCHEDULE, LEGEND & DETAILS
AD2 - A11.10	CASEWORK SCHEDULE & DETAILS
AD2 - A11.11	PAINT PLAN
AD2 - A12.01	INTERIOR ELEVATIONS

MECHANICAL

AD2 - M0.00	MECHANICAL GENERAL NOTES, SYMBOLS, & ABBREVIATIONS
AD2 - M0.01	MECHANICAL TITLE 24
AD2 - MD2.01	MECHANICAL FLOOR PLAN LEVEL 1 - DEMO
AD2 - M2.01	MECHANICAL FLOOR PLAN LEVEL 1 - NEW
AD2 - M2.02	MECHANICAL ROOF PLAN - NEW
AD2 - M4.01	MECHANICAL ENLARGED FLOOR PLANS
AD2 - M5.01	MECHANICAL DETAILS
AD2 - M6.01	MECHANICAL SCHEDULES
AD2 - M11.01	MECHANICAL CONTROLS
M11.02	MECHANICAL CONTROLS

PLUMBING — MECHANICAL CONTROLS

AD2 - P0.00	PLUMBING GENERAL NOTES, SYMBOLS, & ABBREVIATIONS
PD2.01	PLUMBING PARTIAL FLOOR PLANS LEVEL 1 - DEMO
P2.01	PLUMBING PARTIAL FLOOR PLAN LEVEL 1 - NEW
AD2 - P4.01	PLUMBING ENLARGED FLOOR PLANS

ELECTRICAL

AD2 - E0.00	ELECTRICAL GENERAL NOTES, SYMBOLS, & ABBREVIATIONS
AD2 - E0.01	ELECTRICAL TITLE 24
AD2 - ED2.01	ELECTRICAL FLOOR PLAN LEVEL 1 - DEMO
AD2 - E2.01	ELECTRICAL FLOOR PLAN - LEVEL 1 -NEW
AD2 - ED2.02	ELECTRICAL ROOF PLAN - DEMO
AD2 - E2.02	ELECTRICAL ROOF PLAN - NEW
AD2 - E4.01	ELECTRICAL ENLARGED FLOOR PLAN - POWER
AD2 - E4.02	ELECTRICAL ENLARGED FLOOR PLANS - LIGHTING
E5.01	ELECTRICAL DETAILS
AD2 - ED2.01	ELECTRICAL ROOF PLAN - DEMO
AD2 - E6.01	ELECTRICAL SCHEDULES

FIRE ALARM

AD2 - FA0.00	FIRE ALARM GENERAL NOTES, SYMBOLS, & ABBREVIATIONS
AD2 - FA0.01	FIRE ALARM LEGEND & NOTES
FA1.01	FIRE ALARM SITE PLAN
AD2 - FAD2.01	FIRE ALARM FLOOR PLAN LEVELS 1 & 2 - DEMO
AD2 - FA2.01	FIRE ALARM FLOOR PLAN LEVEL 1 & 2 - NEW
FAD2.02	FIRE ALARM ROOF PLAN - DEMO
FA2.02	FIRE ALARM ROOF PLAN - NEW
AD2 - FA4.01	FIRE ALARM ENLARGED FLOOR PLAN
FA5.01	FIRE ALARM DETAILS
FA6.01	FIRE ALARM CALCULATIONS
AD2 - FA7.01	FIRE ALARM RISER DIAGRAM

* These drawings, and/or specifications, and/or calculations for the items listed above have been prepared by other design professionals or consultants who are licensed and/or authorized to prepare such drawings in this state. It has been examined by me for:

1. design intent and appears to meet the appropriate requirements of Title 24, California Code of Regulations and the project specifications prepared by me.
2. coordination with my plans and specifications and is acceptable for incorporation into the construction of this project.

The Statement of General Conformance "shall not be construed as relieving me of my rights, duties, and responsibilities under Sections 17302 and 81138 of the Education Code and Sections 4-336, 4-341 and 4-344" of Title 24, Part 1. (Title 24, Part 1, Section 4-317(b))

JOE VELA	10-28-22
PRINCIPAL IN CHARGE	**DATE -**
C-27833	11-30-23
CALIFORNIA LICENSE NUMBER	**EXPIRATION DATE**

aedis architects
www.aedisarchitects.com
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San Jose, CA 95113
tel: (408)-300-5160
fax: (408)-300-5121

PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

STAMP
LICENSED ARCHITECT — JOSEPH A. VELA — NO. C27833 — EXP. 11-30-23 — STATE OF CALIFORNIA

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET
TITLE SHEET

DATE	04.12.2023
JOB #	2022012
SHEET #	AD2 - T1

4/18/2023 5:21:36 PM

BUILDING CODE ANALYSIS (PER 2019 C.B.C.)

BUILDING CONSTRUCTION TYPE

TYPE IIB	REQ. FIRE RESISTANCE RATING (PER CBC TABLE 601)
PRIMARY STRUCTURAL FRAME	0 HR
EXTERIOR BEARING WALLS	2 HR
INTERIOR BEARING WALLS	0 HR
EXTERIOR NON-BEARING WALLS	0 HR
INTERIOR NON-BEARING WALLS	0 HR
FLOORS & FLOOR CEILINGS	0 HR
ROOFS & ROOF CEILINGS	0 HR

SPRINKLER SYSTEM

NOT SPRINKLERED

REQUIRED OCCUPANCY SEPARATION

(E) 1H SEPARATION TO BE MAINTAINED AT SCIENCE LECTURE HALL AND CENTRAL SUPPLY; SEE PLANS FOR WALL LOCATIONS.

BUILDING HEIGHT ANALYSIS

PER SEC. 506.5.2, EACH STORY SHALL INDIVIDUALLY COMPLY WITH THE REQUIREMENTS.

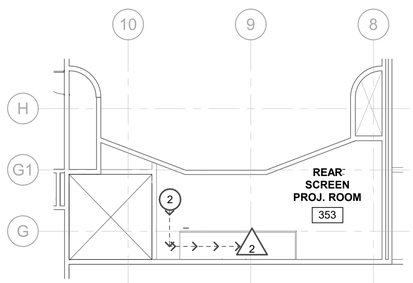
BUILDING OCCUPANCY	A-3, B, S-1
TOTAL HEIGHT:	19'-6", 1 STORY
ALLOWABLE HEIGHT:	55'-0", 1 STORY

= 19'-6" < 55'-0" THEREFORE OK

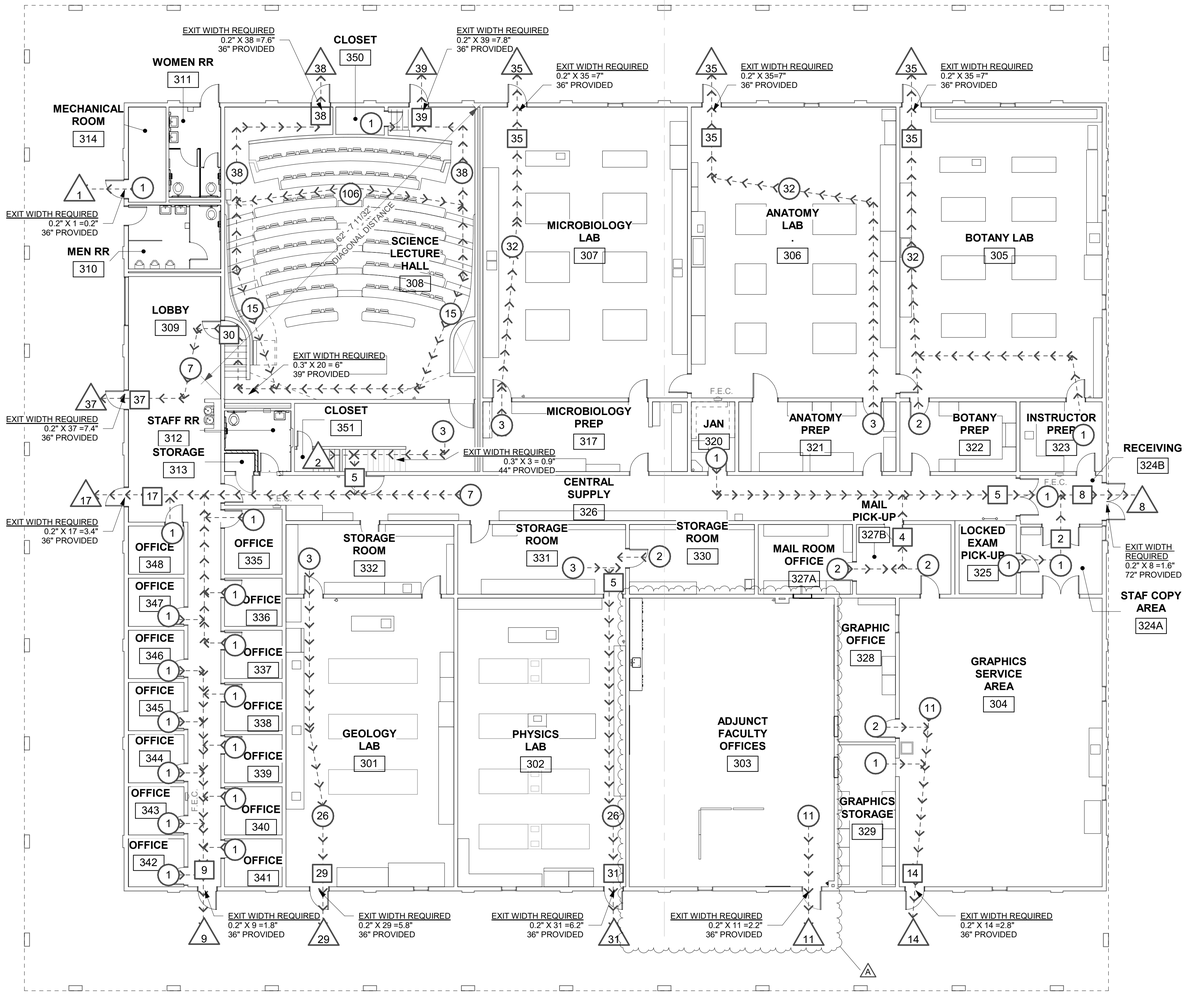
BUILDING AREA ANALYSIS

STORIES	OCCUPANCY	ACTUAL FLOOR AREA
LEVEL 0 FLOOR	A-3 LECTURE HALL	1,859 SF
	B LECTURE PREP	334 SF
FIRST FLOOR	B OFFICES, CLASSROOMS & PREP	18,062 SF
	S-1 STORAGE	347 SF
MEZZANINE	B MECHANICAL EQUIPMENT ROOM	372 SF
TOTAL OCCUPANCY AREA =		20,974 SF

*NOTE: 'W' VALUE IS CALCULATED PER C.B.C. 506.3



2 SECOND FLOOR FLOOR PLAN EXIT PLAN
SCALE: 1/8" = 1'-0"



1 FIRST FLOOR PLAN EXIT ANALYSIS
SCALE: 1" = 10'-0"

EXITING ANALYSIS

FIRST FLOOR

NUMBER	NAME	AREA	OCCUPANCY GROUP	OCCUPANCY LOAD FACTOR, SF/OCC.	OCCUPANT LOAD	EXIT WIDTH REQUIRED, (INCHES)	REQ. # OF EXITS	EXIT WIDTH PROVIDED, (INCHES)
002	SMALL CONFERENCE ROOM	Not Placed						
301	GEOLOGY LAB	1289 SF	B	50	26	5.2	1	36
302	PHYSICS LAB	1290 SF	B	50	26	5.2	1	36
303	ADJUNCT FACULTY OFFICES	1571 SF	B	150	11	2.2	1	36
304	GRAPHICS SERVICE AREA	1559 SF	B	150	11	2.2	1	36
305	BOTANY LAB	1565 SF	B	50	32	6.4	1	36
306	ANATOMY LAB .	1583 SF	B	86 SEATS+ 1 INSTRUCTOR + 370SF @20 OCC. LOAD	106	6.4	1	36
307	MICROBIOLOGY LAB	1582 SF	B	50	32	6.4	1	36
308	SCIENCE LECTURE HALL	1846 SF	A	0		21.2	2	36
309	LOBBY	597 SF	B	150	4	1.4	1	36
313	STORAGE	15 SF	S-1	300	1	0.2	1	32
314	MECHANICAL ROOM	95 SF	B	150	1	0.2	1	36
315	LECTURE PREP	293 SF	B	150	2	0.4	1	36
317	MICROBIOLOGY PREP	377 SF	B	150	3	0.6	1	36
320	JAN	81 SF	S-1	300	1	0.2	1	36
321	ANATOMY PREP	292 SF	B	150	2	0.4	1	36
322	BOTANY PREP	216 SF	B	150	2	0.4	1	36
323	INSTRUCTOR PREP	152 SF	B	150	2	0.4	1	36
324A	STAF COPY AREA	146 SF	B	150	1	0.2	1	36
324B	RECEIVING	107 SF	B	150	1	0.2	1	72

NUMBER	NAME	AREA	OCCUPANCY GROUP	OCCUPANCY LOAD FACTOR, SF/OCC.	OCCUPANT LOAD	EXIT WIDTH REQUIRED, (INCHES)	REQ. # OF EXITS	EXIT WIDTH PROVIDED, (INCHES)
325	LOCKED EXAM PICK-UP	105 SF	B	150	1	0.2	1	36
326	CENTRAL SUPPLY	927 SF	B	150	7	1.4	1	72
327A	MAIL ROOM OFFICE	175 SF	B	150	2	0.4	1	36
327B	MAIL PICK-UP	175 SF	B	150	2	0.4	1	36
328	GRAPHIC OFFICE	220 SF	B	150	2	0.4	1	36
329	GRAPHICS STORAGE	217 SF	S-1	300	1	0.2	1	36
330	STORAGE ROOM	232 SF	S-1	300	1	0.2	1	36
331	STORAGE ROOM	311 SF	S-1	300	2	0.4	1	36
332	STORAGE ROOM	311 SF	S-1	300	2	0.4	1	36
335	OFFICE	100 SF	B	150	1	0.2	1	36
336	OFFICE	74 SF	B	150	1	0.2	1	36
337	OFFICE	74 SF	B	150	1	0.2	1	36
338	OFFICE	74 SF	B	150	1	0.2	1	36
339	OFFICE	74 SF	B	150	1	0.2	1	36
340	OFFICE	74 SF	B	150	1	0.2	1	36
341	OFFICE	74 SF	B	150	1	0.2	1	36
342	OFFICE	71 SF	B	150	1	0.2	1	36
343	OFFICE	71 SF	B	150	1	0.2	1	36
344	OFFICE	71 SF	B	150	1	0.2	1	36
345	OFFICE	71 SF	B	150	1	0.2	1	36
346	OFFICE	71 SF	B	150	1	0.2	1	36
347	OFFICE	71 SF	B	150	1	0.2	1	36
348	OFFICE	71 SF	B	150	1	0.2	1	36
349	HALLWAY	321 SF	B	300	2	0.4	1	36
350	CLOSET	35 SF	S-1	300	1	0.2	1	36
351	CLOSET	26 SF	S-1	300	1	0.2	1	36
353	REAR SCREEN PROJ. ROOM	370 SF	S-1	300	2	0.2	1	36

NOTE:
*EGRESS WIDTH CALCULATED AS OCCUPANT LOAD x 0.2" FOR ALL ROOMS EXCEPT STAIRS, WHICH ARE CALCULATED AS OCCUPANT LOAD x 0.3", PER C.B.C. 1005.3.1, OR 48" CLEAR BETWEEN HANDRAILS PER C.B.C. 1007.3, WHICHEVER IS MORE STRINGENT.

PERMANENT ASSISTIVE LISTENING SYSTEM

ROOM NUMBER	ROOM NAME	OCCUPANT LOAD
308	LECTURE HALL	106

NOTE:
1. MINIMUM RECEIVERS TO BE PROVIDED SHALL BE NO LESS THAN TWO, PER CBC 2019 11B-219
2. PROVIDE ADQUATE ELECTRICAL OUTLETS AND OTHER SUPPLEMENTAL WIRING NECESSARRY TO SUPPORT A PORTABLE ASSISTIVE LISTENING SYSTEM PER CBC 2019-706

TOTAL OCCUPANT LOAD:	106
NO. OF RECEIVERS:	4%
CALCULATION:	106 * 0.04 = 4.24
RECEIVERS REQUIRED:	5
RECEIVERS PROVIDED:	5, 2 OF THE 5 RECEIVERS TO BE HEARING AID COMPATIBLE

GRAPHIC KEY

WALL TYPES:

EXISTING WOOD STUD WALL TO REMAIN

EXISTING CONCRETE WALL TO REMAIN

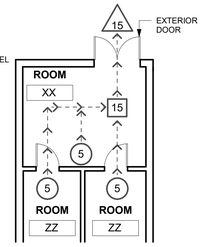
NEW STUD WALL

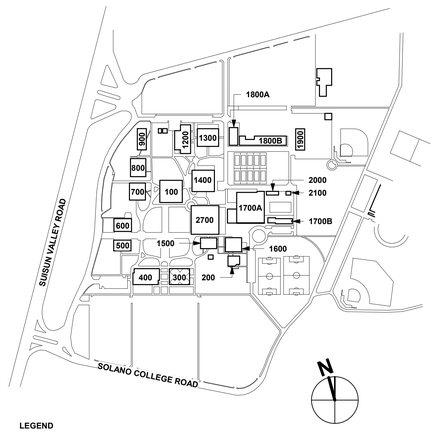
EXIT ANALYSIS PATH OF TRAVEL

XX ROOM OCCUPANT LOAD

XX COMBINED OCCUPANT LOAD

XX TOTAL FLOOR OCCUPANT LOAD





LEGEND

BUILDINGS IN SCOPE

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PROJECT

Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

STAMP

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET

EXIT ANALYSIS AND BUILDING CODE ANALYSIS

DATE 04.12.2023

JOB # 2022012

SHEET # AD2 - A0.04

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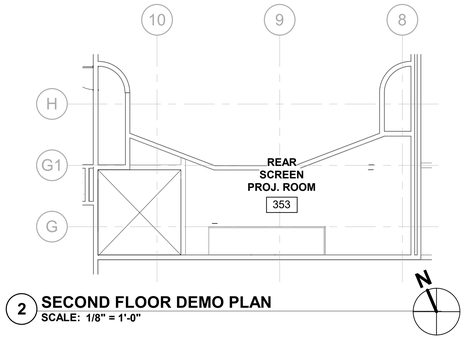
ASBESTOS NOTE:
ASBESTOS CONTAINING PRODUCT ARE PRESENT IN THE EXISTING BUILDING CONSTRUCTION. REFER TO ASBESTOS AND LEAD BASED PAINT SURVEY REPORT PREPARED BY PMP ENVIRONMENTAL CONSULTING ON NOVEMBER 18, 2019 AS WELL AS THE REVISED REPORT AND SPECIFICATION ISSUED ON APRIL 12, 2023 FOR SOLANO COMMUNITY COLLEGE.

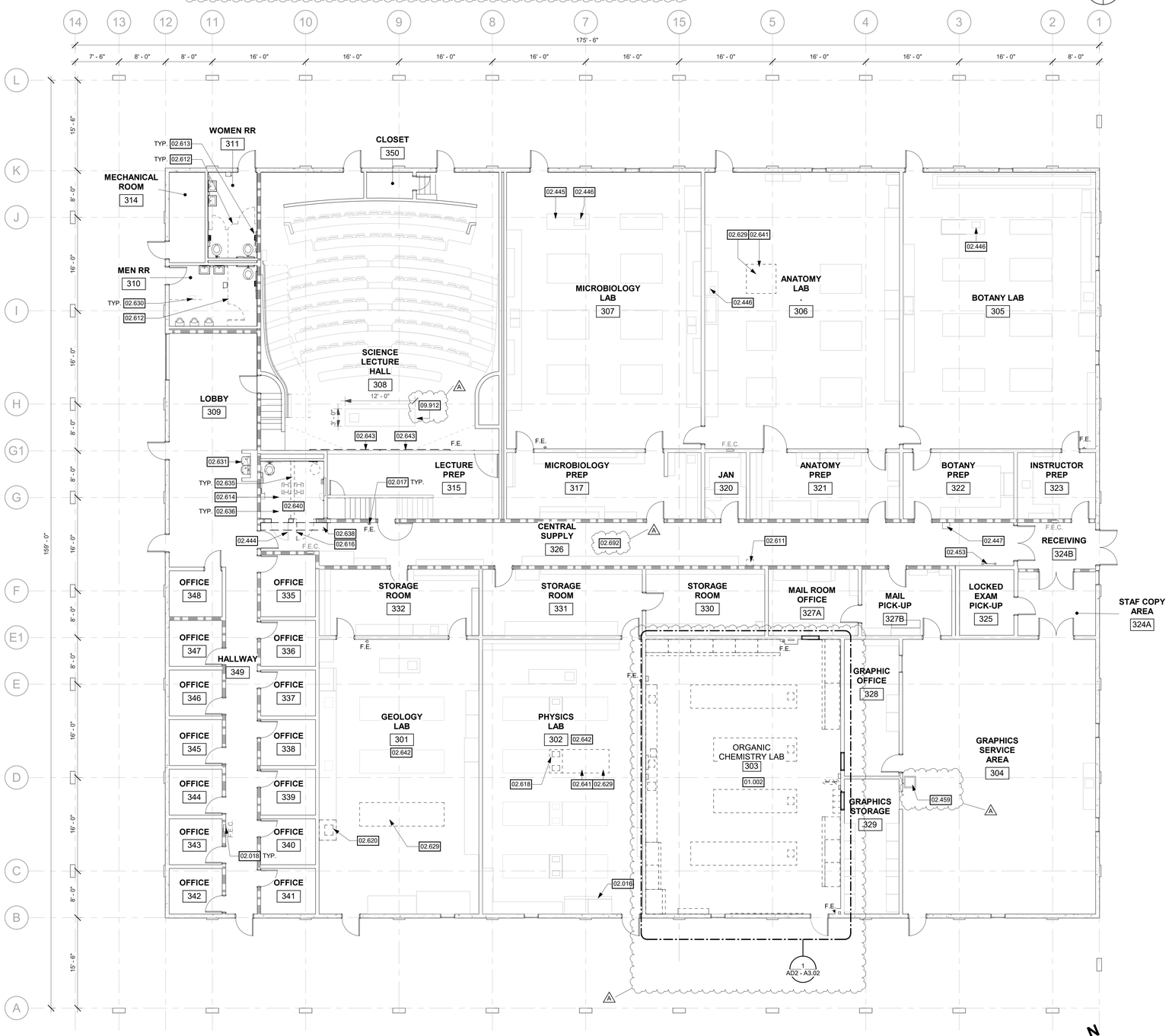
MATERIALS WHICH CONTAIN ASBESTOS INCLUDE GRAY PUTTY ASSOCIATED WITH BLACK SINKS, CEMENT RESIN COUNTERTOPS, TRANSITE PANELS WITHIN FUME HOODS, BEIGE HVAC TAPING LOCATED IN PLENUM AREA, ALL VINYL FLOOR TILE AND MASTIC.

IF ADDITIONAL SUSPECT MATERIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER' S REPRESENTATIVE FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH ADDITIONAL WORK. THE CONTRACTOR SHALL IMMEDIATLY POST NOTICES AND TAKE PRECAUTIONS NECESSARY TO ENSURE THE HEALTH AND SAFETY OF ALL WORKERS, THE STAFF AND THE PUBLIC.

ADD ALTERNATE #1
FIRE-SPRINKLER REMOVAL
LOCATION: ROOM 326, CENTRAL SUPPLY
REMOVE (E) ABANDONED AND DRAINED SPRINKLERS SYSTEM, SPRINKLER HEADS, ATTACHMENTS AND ALL ASSOCIATED COMPONENTS BACK TO THE MAIN POINT OF CONNECTION. CAP AND SECURE. SEAL ALL PENETRATION AS NEEDED



2 **SECOND FLOOR DEMO PLAN**
SCALE: 1/8" = 1'-0"



1 **FLOOR PLAN - LEVEL 1**
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

A ROOM NAMES OR NUMBERS MAY NOT BE CONSISTENT BETWEEN DEMOLITION AND NEW FLOOR PLANS.

B REFER TO MECHANICAL, PLUMBING, ELECTRICAL AND FIRE ALARM DRAWINGS FOR EXTENT OF MECHANICAL, PLUMBING, ELECTRICAL AND FIRE ALARM DEMOLITION WORK.

C VERIFY LIMITS OF DEMOLITION WITH SCOPE OF NEW WORK PRIOR TO COMMENCING WORK.

D ALL ITEMS SHOWN DASHED ARE TO BE DEMOLISHED UNLESS OTHERWISE NOTED ON PLANS.

E REMOVE ALL MISCELLANEOUS TRIM, CASEWORK, EQUIPMENT, CONDUIT, BASES, AND OTHER SURFACE MOUNTED ITEMS WHETHER SHOWN OR NOT ON PARTITIONS TO BE DEMOLISHED. REMOVE AND CAP ALL OUTLETS, SWITCHES, WIRES, THERMOSTATS, ETC. TO THEIR SOURCE AS REQUIRED. SEE CONSULTANTS' DRAWINGS FOR ADDITIONAL INFORMATION AND SCOPE OF WORK.

F AT CEILINGS TO BE REMOVED, REMOVE ALL CEILINGS, SOFFITS, RELATED SUPPORT SYSTEMS AND ACCESSORIES, AND CEILING MOUNTED ITEMS. COORDINATE WITH MECHANICAL, PLUMBING, FIRE PROTECTION, AND ELECTRICAL DRAWINGS.

G REMOVE WALL FINISHES AND GYP. BOARD DOWN TO STUDS. PREPARE FOR NEW SUBSTRATE AND WALL FINISHES PER NEW WALL TYPES.

H ALL FLOORING MATERIALS ARE TO BE REMOVED TO TOP OF EXISTING SLAB BY MECHANICAL MEANS U.O.N. REVIEW SECTION 024113 AS APPLICABLE. TOP OF EXISTING SLAB TO BE LEFT SMOOTH, CLEAN, AND FREE OF ALL ADHESIVE AND READY FOR INSTALLATION OF NEW FLOORING.

I EXISTING EQUIPMENT INDICATED TO BE RELOCATED PER NEW PLAN IS TO BE STORED AND PROTECTED DURING CONSTRUCTION.

DEMOLITION FLOOR PLAN KEYNOTES

01.002	SEE ENLARGED FLOOR PLAN FOR KEYNOTES
02.016	ABANDONED (E) FUME HOOD - NOT IN USE
02.017	(E) WALL MOUNTED FIRE EXTINGUISHER
02.018	(E) FIRE EXTINGUISHER CABINET
02.444	(E) DOOR AND FRAME TO REMAIN
02.445	(E) ACCESSIBLE CABINET SURFACE W/INTEGRATED POWER
02.446	(E) ACCESSIBLE CABINET SURFACE W/SINK
02.447	(E) RESPIRATOR CABINET, RELOCATE PER NEW FLOOR PLAN
02.453	(E) ROOF ACCESS LADDER TO REMAIN
02.459	(E) UTILITY SINK TO REMAIN
02.611	RELOCATE (E) RESPIRATOR STORAGE CABINET
02.612	REMOVE AND REPLACE (E) TOILET PARTITION, TYP.
02.613	REMOVE GRAB BARS AND TOILET ACCESSOIRES. REPLACE PER PROPOSED PLAN
02.614	DEMO (E) RESTROOM PLUMBING FIXTURES, ACCESSOIRIES AND FINISHES, S.P.D.
02.616	DEMO DOOR AND ASSOCIATED FRAME
02.618	DEMO (E) CABINET/ COUNTER WITH SINK AND INTEGRATED POWER AND REPLACE WITH NEW CABINET/ COUNTER WITH SINK AND INTEGRATED POWER. SEE PLUMBING /ELECTRICAL DRAWINGS AND PROPOSED FLOOR PLAN.
02.620	DEMO (E) 48" CABINET AND SINK. CUT (E)COUNTER AND BACKSPLASH TO ALLOW JOINT WITH NEW COUNTER. REPLACE WITH NEW ADA ACCESSIBLE CABINET W/SINK. S.P.D., PROPOSED FLOOR PLAN AND ELEVATIONS ON
02.629	REMOVE AND REPLACE (E) LAB TABLE. SEE PROPOSED FLOOR PLAN AND ELEVATIONS
02.630	REMOVE (E) PAPER TOWEL DISPENSER AND RETURN TO THE DISTRICT
02.631	REMOVE AND REPLACE (E) HI-LO DRINKING FOUTAIN, S.P.D AND PROPOSED FLOOR PLAN AND DETAIL 7 / AD2 - A9.10
02.635	DEMO (E) WALL AND CURB PER PLAN
02.636	DEMO (E) FLOOR AND WALL TILE
02.638	REMOVE (E) VCT TILE IN AREA OF CONSTRUCTION AS REQUIRED. SEE PROPOSED FLOOR PLAN
02.640	SAWCUT (E) CONCRETE SLAB AS REQUIRED FOR NEW PLUMBING WORK, S.P.D. AND DETAIL 20 / AD2 - A9.10
02.641	REMOVE CONDUIT AT POWERED TABLE, PROTECT WIRES DURING CONSTRUCTION; PREPARE AREA FOR NEW WORK, S.E.D.
02.642	PROTECT (E) STENCIL PAINTING DURING CONSTRUCTION
02.643	REMOVE (E) CHALKBOARD; PREPARE AREA FOR NEW WORK
02.692	ADD ALTERNATE #1: REMOVE (E) ABANDONED AND DRAINED SPRINKLERS SYSTEM, SPRINKLER HEADS, ATTACHEMENTS AND ALL ASSCOCIATED COMPONENTS BACK TO THE MAIN POINT OF CONNECTION. CAP AND SECURE. SEAL ALL PENETRATION AS NEEDED
09.912	INSTALL BLACK RUBBER WALL BASE AROUND THE (E) INSTRUCTOR TABLE

GRAPHIC KEY

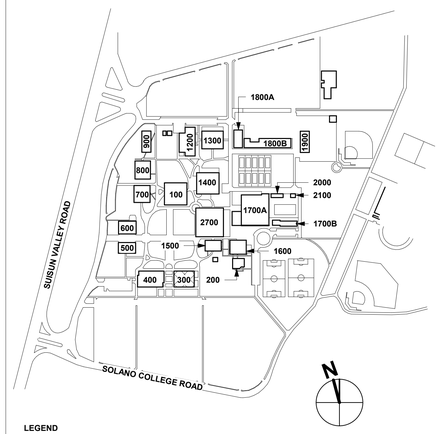
WALL TYPES

EXISTING WOOD FRAME WALL TO REMAIN
EXISTING CONCRETE WALL TO REMAIN
EXISTING WALL TO BE DEMOLISHED
EXISTING CASEWORK TO BE DEMO
EXISTING DOOR TO BE DEMO
EXISTING DOOR TO BE REMAIN
(E) SEMI-RECESSED FIRE EXTINGUISHER CABINET
(E) WALLMOUNTED FIRE EXTINGUISHER

F.E.C. F.E.

FIRE EXTINGUISHER AND FIRE EXTINGUISHER CABINETS

BUILDING KEY



LEGEND
BUILDINGS IN SCOPE

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PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

STAMP

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET
DEMOLITION FLOOR PLAN

DATE 04.12.2023
JOB # 2022012
SHEET # AD2 - A2.01

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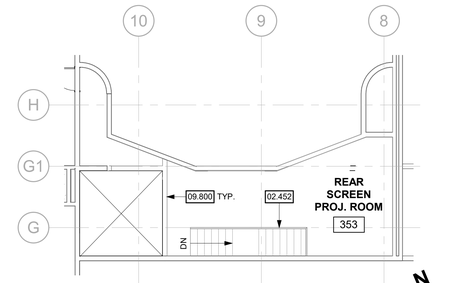
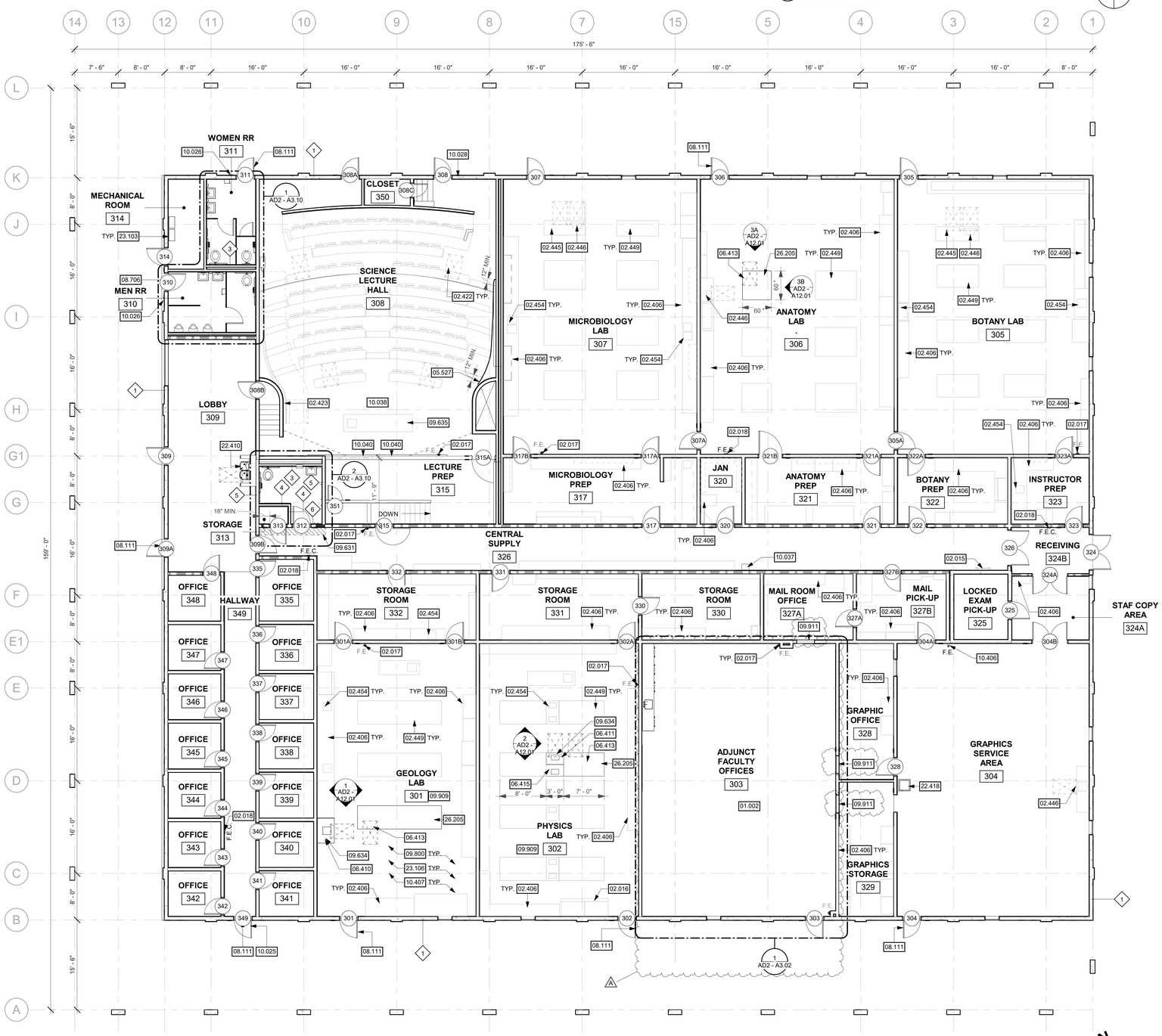


2 **SECOND FLOOR FLOOR PLAN**
SCALE: 1/8" = 1'-0"



1 **FLOOR PLAN - LEVEL 1**
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

A ROOM NAMES OR NUMBERS MAY NOT BE CONSISTENT BETWEEN DEMOLITION AND NEW FLOOR PLANS.

B REFER TO MECHANICAL, PLUMBING, ELECTRICAL AND FIRE ALARM DRAWINGS FOR EXTENT OF MECHANICAL, PLUMBING,ELECTRICAL AND FIRE ALARM WORK.

F ALL TOILET ROOM STUD WALLS SHALL HAVE NEW SOUND ATTENUATION INSULATION.

G PROVIDE WALL BLOCKING AT ALL TOILET FIXTURE AND ACCESSORY MOUNTING LOCATIONS. SEE TYPICAL BACKING AND BLOCKING DETAILS.

H FOR TOILET ROOM FIXTURE MOUNTING HEIGHTS, SEE TYPICAL FIXTURE MOUNTING HEIGHTS DETAIL

I WATER SUPPLY AND DRAIN PIPES ACCESSIBLE UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE OBJECTS OR SURFACES UNDER LAVATORIES, TYP.

J REFER TO WALL TYPE PLANS AND WALL TYPE DETAILS FOR IDENTIFICATION OF ALL WALL TYPES.

K REFER TO FINISH PLAN AND SCHEDULE FOR IDENTIFICATION OF ALL FINISHES.

L DIMENSIONS FOR EXISTING BUILDING ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY PRIOR TO START OF CONSTRUCTION.

M ALL ITEMS REFERENCED IN KEYNOTES ARE TO BE PROVIDED NEW, U.O.N.

N WALL FINISHES PER PAINT PLAN, U.O.N., SEE SHEET A11.11.

O FIRE ALARM UPGRADES THROUGHOUT, U.O.N., S.F.A.D.

P NEW HVAC CONTROLS THROUGHOUT, U.O.N., S.M.D.

KEYNOTES

01.002 SEE ENLARGED FLOOR PLAN FOR KEYNOTES
02.015 (E) METAL LADDER FOR ROOF ACCESS
02.016 ABANDONED (E) FUME HOOD - NOT IN USE
02.017 (E) WALL MOUNTED FIRE EXTINGUISHER
02.018 (E) FIRE EXTINGUISHER CABINET
02.406 (E) CASEWORK TO REMAIN, TYP.
02.422 (E) WHEEL CHAIR ACCESSIBLE SEATING
02.423 (E) ACCESSIBLE LIFT
02.445 (E) ACCESSIBLE CABINET SURFACE W/INTEGRATED POWER
02.446 (E) ACCESSIBLE CABINET SURFACE W/SINK
02.449 (E) LAB TABLE TO REMAIN, TYP.
02.452 (E) RAILING
02.454 (E) CABINET SURFACE W/SINK TO REMAIN
05.527 1 1/4" DIAMETER STANDARD STEEL PIPE HANDRAIL, PAINTED FINISH TO MATCH CHAIRLIFT RAILING. SEE DETAIL 9 / AD2 - A9.10
06.410 ACCESSIBLE HEIGHT CABINET/ COUNTER WITH SINK, S.P.D. AND DETAIL 4 / AD2 - A11.10&6 / AD2 - A1
06.411 ACCESSIBLE HEIGHT CABINET/ COUNTER WITH SINK AND INTEGRATED POWER. SEE ELECTRICAL, PLUMBING DRAWINGS AND DETAIL 3 / AD2 - A11.10
06.413 ACCESSIBLE HEIGHT BUILT-IN LAB SURFACE W/INTEGRATED POWER, S.E.D. AND DETAIL 2 / AD2 - A11.10 & 6 / AD2 - A11.10
06.415 SINK CABINET W/ INTEGRATED POWER AND DATA. S.E.D., S.P.D. DRAWINGS AND DETAIL 6 / AD2 - A11.10
08.111 PROVIDE 10" MIN. KICK PLATE COVERING WIDTH OF DOOR ON THE PUSH SIDE
08.706 PROVIDE ACCESSIBLE LEVER DOOR HANDLE, SEE DOOR SCHEDULE FOR THE HARDWARE CHANGES
09.631 REPLACE VCT TILE IN AREA OF CONSTRUCTION PER FINISH FLOOR PLAN 2/A.11.01
09.634 NEW ADA CABINET TO EXPOSE FLOOR FINISH, INSTALL NEW VCT TILE AS NEEDED IF THERE ARE NO TILE UNDER (E) CABINET REMOVED. INSTALL VCT TILE FINISH PER FINISH SCHEDULE.
09.635 INSTALL NEW RUBBER BASE AT THE TEACHER'S DEMONSTRATION CABINET PER FINISH SCHEDULE
09.800 WALL FINISHES PER PAINT PLAN, SEE SHEET A11.11, TYP.
09.909 DO NOT PAINT ABOVE MAP RAIL; PROTECT STENCIL PAINTING DURING CONSTRUCTION
09.911 REPLACE WALL BASE ON THE ENTIRE SECTION OF THE WALL WHERE DOOR IS INFILL. PAINT WALL PER PAINT PLAN.
10.025 ADJUST REGULAR DOOR CLOSER TO ACCESSIBLE STANDARDS (5LBS. MAX)
10.026 REPLACE (E) RESTROOM SIGNAGE SYMBOLS PER DETAIL 20 / A10.01. SEE DOOR SCHEDULE ON A10.01
10.028 ASSISTIVE LISTENING DEVICE SIGNAGE
10.037 RELOCATE (E) RESPIRATOR STORAGE CABINET
10.038 INSTALL PERMANENT ASSISTIVE LISTENING DEVICE, O.F.C.I., SEE ELECTRICAL DRAWINGS
10.040 APPROX. 4' x 12' MARKERBOARD; VERIFY SIZE IN FIELD PRIOR TO INSTALLATION; INSTALL IN SAME LOCATION AS PREVIOUS CHALKBOARDS
10.406 WALL MOUNTED FIRE EXTINGUISHER
10.407 FIRE ALARM UPGRADES THROUGHOUT, S.F.A.D.
22.410 D.A. DRINKING FOUNTAIN WITH BOTTLE WATER DISPENSER, S.P.D. AND DETAIL 7 / AD2 - A9.10
22.418 UTILITY SINK; FOR FIXTURE ATTACHMENT BLOCKING SEE DETAIL 8 / AD2 - A9.10
23.103 MECHANICAL UNIT, S.M.D. 14 / AD2 - A9.10
23.106 NEW HVAC CONTROLS THROUGHOUT, S.M.D.
26.205 PROVIDE CONDUIT AT POWERED TABLES; PAINT, S.E.D.

WHEELCHAIR SEATING SPACES

LECTURE HALL

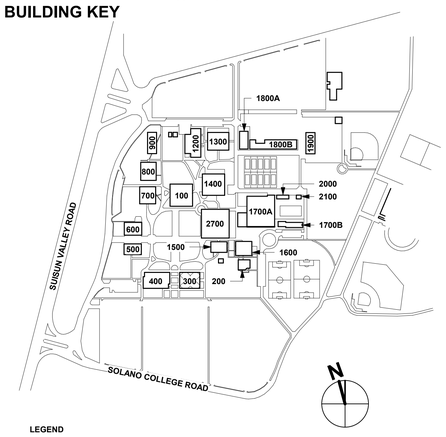
SEATING CAPACITY	WHEELCHAIR SEATING SPACES REQUIRED PER CBC 11B-221.2	WHEELCHAIR SEATING SPACES PROVIDED
106	4	4

GRAPHIC KEY

WALL TYPES

(E) WOOD FRAME WALL TO REMAIN
(E) CONCRETE WALL TO REMAIN
(E) 1-HOUR RATED WALL TO REMAIN
1-HOUR RATED WALL
WALL TYPE; REFER TO SHEET A9.01 FOR WALL TYPE DESCRIPTION, FIRE RATING LISTING, AND SOUND RATING WHERE APPLICABLE, TYP.
STUD WALL; REFER TO WALL TYPES ON SHEET A9.01
30" X 48" CLEAR FLOOR SPACE
DOOR SIGNAGE. SEE DOOR SCHEDULE ON SHEET A10.01
(E) SEMI-RECESSED FIRE EXTINGUISHER CABINET
(E) WALL-MOUNTED FIRE EXTINGUISHER
(N) WALL-MOUNTED FIRE EXTINGUISHER
FIRE EXTINGUISHER AND FIRE EXTINGUISHER CABINETS

BUILDING KEY



LEGEND
BUILDINGS IN SCOPE

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PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

STAMP

STATE
DSA FILE NUMBER 48-C1
APPL # 02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

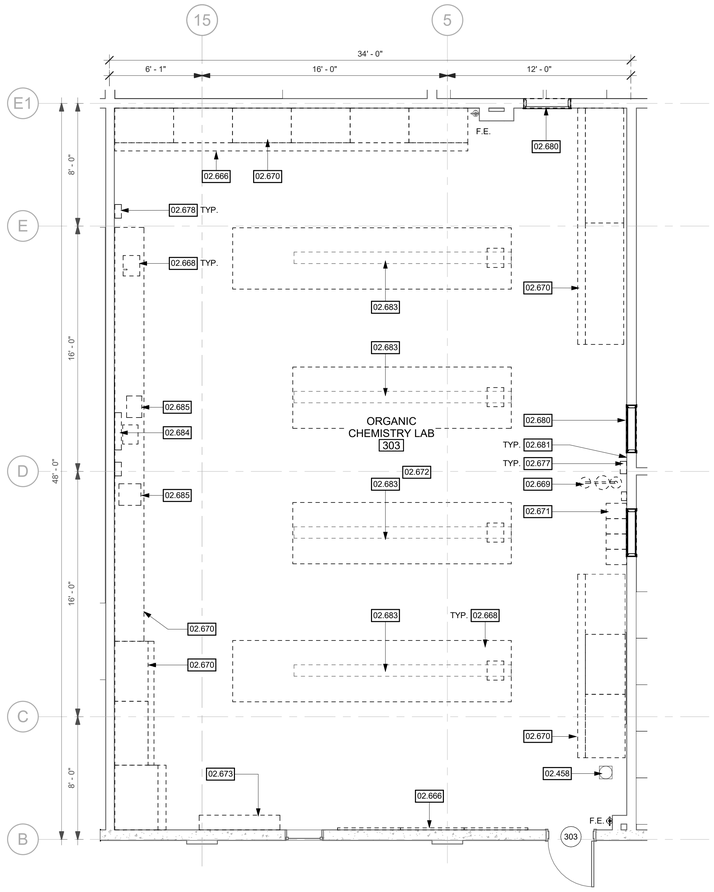
MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET
NEW FLOOR PLAN

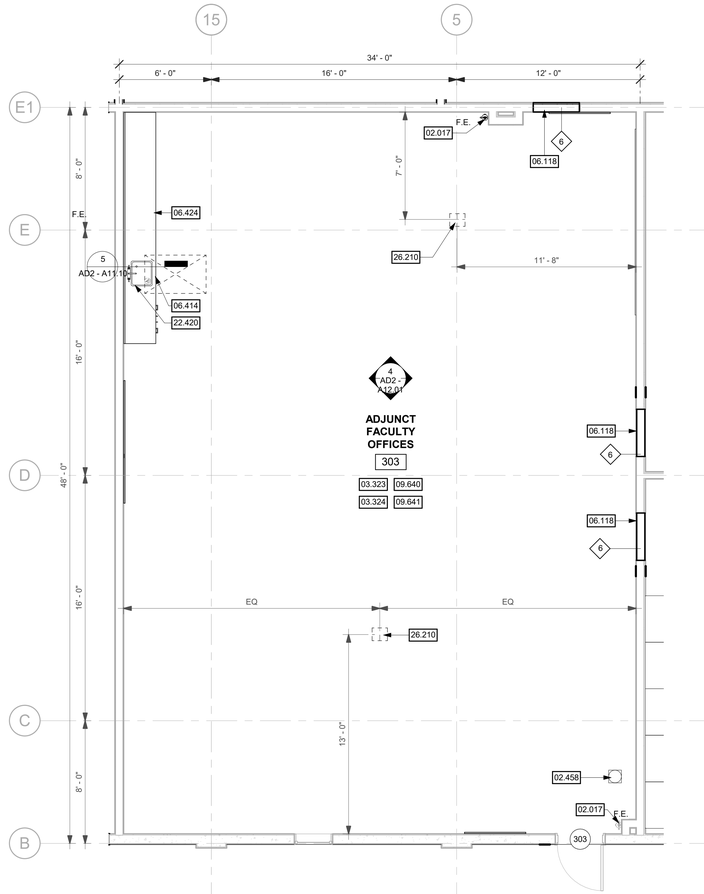
DATE 04.12.2023
JOB # 2022012
SHEET # AD2 - A3.01

4/18/2023 5:20:25 PM



2 DEMO FLOOR PLAN - RM 303 ORGANIC CHEMISTRY LAB

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



1 FLOOR PLAN - RM 303 ADJUNCTS FACULTY OFFICES

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

ASBESTOS NOTE:
ASBESTOS CONTAINING PRODUCT ARE PRESENT IN THE EXISTING BUILDING CONSTRUCTION. REFER TO ASBESTOS AND LEAD BASED PAINT SURVEY REPORT PREPARED BY PMP ENVIRONMENTAL CONSULTING ON NOVEMBER 18, 2019 AS WELL AS THE REVISED REPORT AND SPECIFICATION ISSUED ON APRIL 12, 2023 FOR SOLANO COMMUNITY COLLEGE.

MATERIALS WHICH CONTAIN ASBESTOS INCLUDE GRAY PUTTY ASSOCIATED WITH BLACK SINKS, CEMENT RESIN COUNTERTOPS, TRANSITE PANELS WITHIN FUME HOODS, BEIGE HVAC TAPING LOCATED IN PLENUM AREA, ALL VINYL FLOOR TILE AND MASTIC.

IF ADDITIONAL SUSPECT MATERIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER' S REPRESENTATIVE FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH ADDITIONAL WORK. THE CONTRACTOR SHALL IMMEDIATLY POST NOTICES AND TAKE PRECAUTIONS NECESSARY TO ENSURE THE HEALTH AND SAFETY OF ALL WORKERS, THE STAFF AND THE PUBLIC.

GENERAL SHEET NOTES

A VERIFY LIMITS OF DEMOLITION WITH SCOPE OF NEW WORK PRIOR TO COMMENCING WORK.

B ALL ITEMS SHOWN DASHED ARE TO BE DEMOLISHED UNLESS OTHERWISE NOTED ON PLANS.

C REMOVE ALL MISCELLANEOUS TRIM, CASEWORK, EQUIPMENT, CONDUIT, BASES, AND OTHER SURFACE MOUNTED ITEMS WHETHER SHOWN OR NOT ON PARTITIONS TO BE DEMOLISHED. REMOVE AND CAP ALL OUTLETS, SWITCHES, WIRES, THERMOSTATS, ETC. TO THEIR SOURCE AS REQUIRED. SEE CONSULTANTS' DRAWINGS FOR ADDITIONAL INFORMATION AND SCOPE OF WORK.

D REMOVE WALL FINISHES AND GYP. BOARD DOWN TO STUDS. PREPARE FOR NEW SUBSTRATE AND WALL FINISHES PER NEW WALL TYPES.

E ALL FLOORING MATERIALS ARE TO BE REMOVED TO TOP OF EXISTING SLAB BY MECHANICAL MEANS U.O.N. REVIEW SECTION 024113 AS APPLICABLE. TOP OF EXISTING SLAB TO BE LEFT SMOOTH, CLEAN, AND FREE OF ALL ADHESIVE AND READY FOR INSTALLATION OF NEW FLOORING.

F EXISTING EQUIPMENT INDICATED TO BE RELOCATED PER NEW PLAN IS TO BE STORED AND PROTECTED DURING CONSTRUCTION.

G REFER TO MECHANICAL, PLUMBING, ELECTRICAL AND FIRE ALARM DRAWINGS FOR EXTENT OF MECHANICAL, PLUMBING,ELECTRICAL AND FIRE ALARM WORK.

H ROOM NAMES OR NUMBERS MAY NOT BE CONSISTENT BETWEEN DEMOLITION AND NEW FLOOR PLANS.

I DIMENSIONS FOR EXISTING BUILDING ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY PRIOR TO START OF CONSTRUCTION.

J REFER TO WALL TYPE PLANS AND WALL TYPE DETAILS FOR IDENTIFICATION OF ALL WALL TYPES.

K PROVIDE WALL BLOCKING AT ALL ACCESSORY MOUNTING LOCATIONS. SEE TYPICAL BACKING AND BLOCKING DETAILS.

L ALL ITEMS REFERENCED IN KEYNOTES ARE TO BE PROVIDED NEW, U.O.N.

M NEW HVAC CONTROLS THROUGHOUT, U.O.N., S.M.D.

N FIRE ALARM UPGRADES THROUGHOUT, U.O.N., S.F.A.D.

O REFER TO FINISH PLAN AND SCHEDULE FOR IDENTIFICATION OF ALL FINISHES.

P WALL FINISHES PER ELEVATIONS

KEYNOTES

02.017	(E) WALL MOUNTED FIRE EXTINGUISHER
02.406	(E) CASEWORK TO REMAIN, TYP.
02.458	(E) UTILITY ACCESS PANEL.
02.666	DEMO (E) CHALKBOARD
02.668	DEMO (E) LAB CASEWORK INCLUDING COUNTERTOP, SINK,POWER AND DATA, S.E.D. AND S.P.D.
02.669	DEMO (E) EMERGENCY SHOWER AND EYEWASH , S.P.D.
02.670	DEMO (E) FUMEHOOD, ABATEMENT PER SPECIFICATION. CAP UTILITIES PER MECHANICAL DRAWINGS AND PLUMBING.
02.671	REMOVE (E) LOCKERS AND TURN TO THE DISTRICT
02.672	DEMO (E) VCT FLOORING, PREP FOR NEW FLOORING.
02.673	DEMO (E) CASEWORK.
02.677	REMOVE (E) SAFETY BLANKET CABINET AND FIRST AID KIT AND RETURN TO DISTRICT
02.678	DEMO (E) WALLMOUNT PAPER TOWEL AND SOAP DISPENSER
02.680	REMOVE DOOR AND ASSOCIATED FRAME
02.681	DEMO FRL, AND TACKABLE PANELS.
02.683	TRENCH AS NEEDED TO CAP (E) UTILITY CONDUITS NON LONGER NEEDED. S.E.D AND S.P.D. AND DETAIL 20 / AD2 - A9.10
02.684	DEMO BEAKER DRYING RACK
02.685	REMOVE COUNTER REFRIGERATOR AND MICROWAVE , RETURN TO THE DISTRICT
03.323	INFILL TRENCHED AREA WITH CONCRETE PER DETAIL 20 / AD2 - A9.10
03.324	INSTALL NEW FLOORING PER FINISH FLOOR PLAN ON AD2-A11.01
06.118	INFILL (E) DOOR OPENING. SEE WALL TYPE AND DETAILS 9 / AD2 - A9.01 10 / AD2 - A9.01
06.414	ACCESSIBLE SINK CABINET,S.P.D. , SEE CASEWORK SCHEDULE AND DETAIL 5 / AD2 - A11.10
06.424	CASEWORK AND COUNTERTOP, SEE CASEWORK SCHEDULE AND ELEVATIONS
09.640	INSTALL GYPBOARD WHERE GYPBOARD WAS REMOVED . PATCH WALLS WHERE EQUIPMENT AND CASWORK HAS BEEN REMOVED. PAINT PER PAINT PLAN.
09.641	INSTALL 4" RUBBER BASE AT WALLS PER FINISH SCHEDULE.
22.420	D.A. SINK AND FAUCET. S.P.D.
26.210	PROVIDE POWER AND DATA FLOOR OUTLETS, S.E.D.

GRAPHIC KEY

WALL TYPES

(E) WOOD FRAME WALL TO REMAIN

(E) CONCRETE WALL TO REMAIN

(E) CASEWORK, VENT HOOD AND FIXTURES TO BE DEMO

WALL TYPE, REFER TO SHEET A9.01 FOR WALL TYPE DESCRIPTION, FIRE RATING LISTING, AND SOUND RATING WHERE APPLICABLE, TYP.

STUD WALL; REFER TO WALL TYPES ON SHEET A9.01

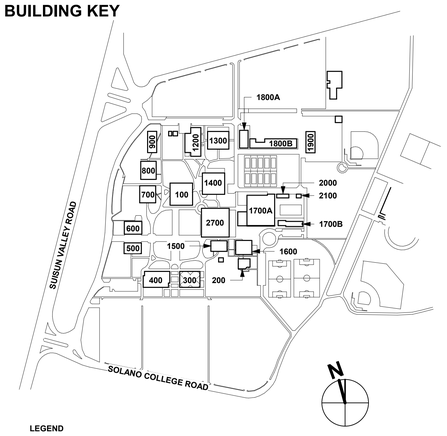
30" X 48" CLEAR FLOOR SPACE

DOOR SIGNAGE. SEE DOOR SCHEDULE ON SHEET A10.01

F.E. (E) WALL-MOUNTED FIRE EXTINGUISHER

FIRE EXTINGUISHER

BUILDING KEY



LEGEND

BUILDINGS IN SCOPE

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PROJECT

Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

STAMP

LICENSED ARCHITECT
JOSEPH A. ESTRADA
NO. C-29382
EXP. 11/30/24
STATE OF CALIFORNIA

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

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DSA SUB	10.28.2022

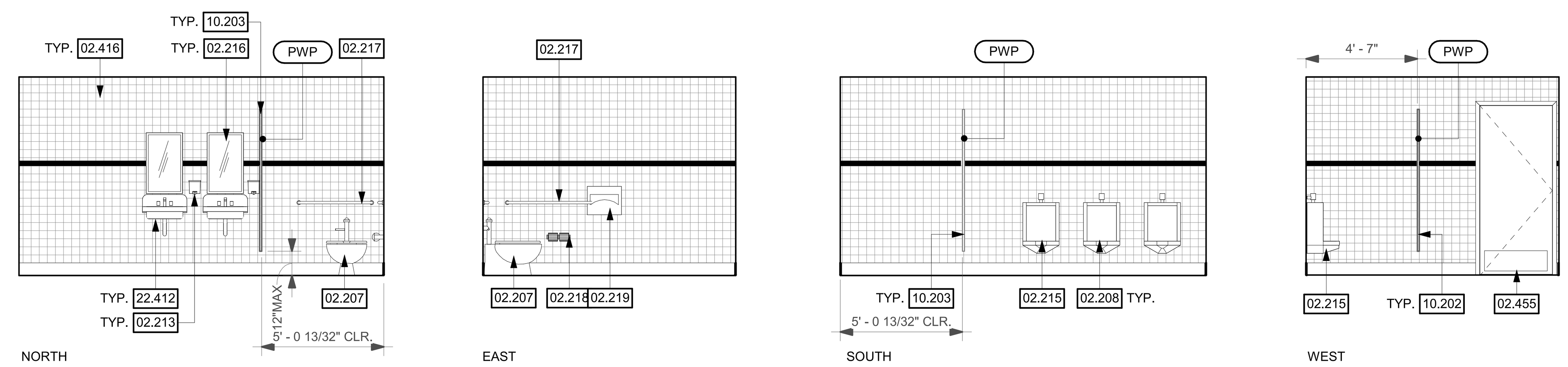
SHEET

ENLARGED DEMO & FLOOR PLAN - ROOM 303 ADJUNCT FACULTY OFFICES

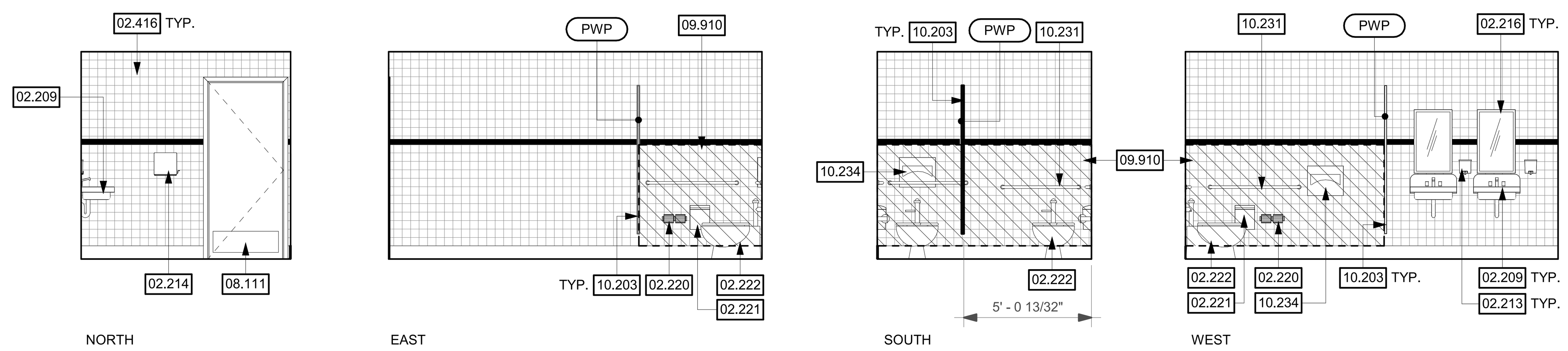
DATE 04.12.2023

JOB # 2022012

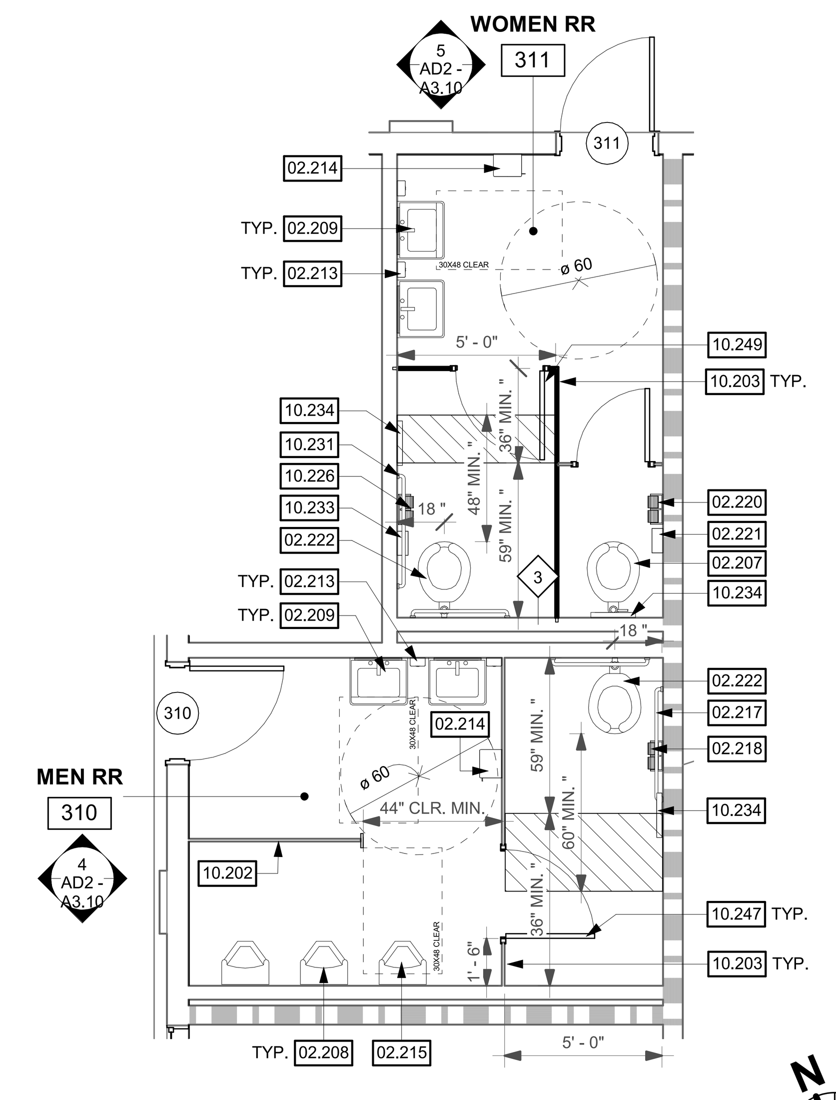
SHEET # AD2 - A3.02



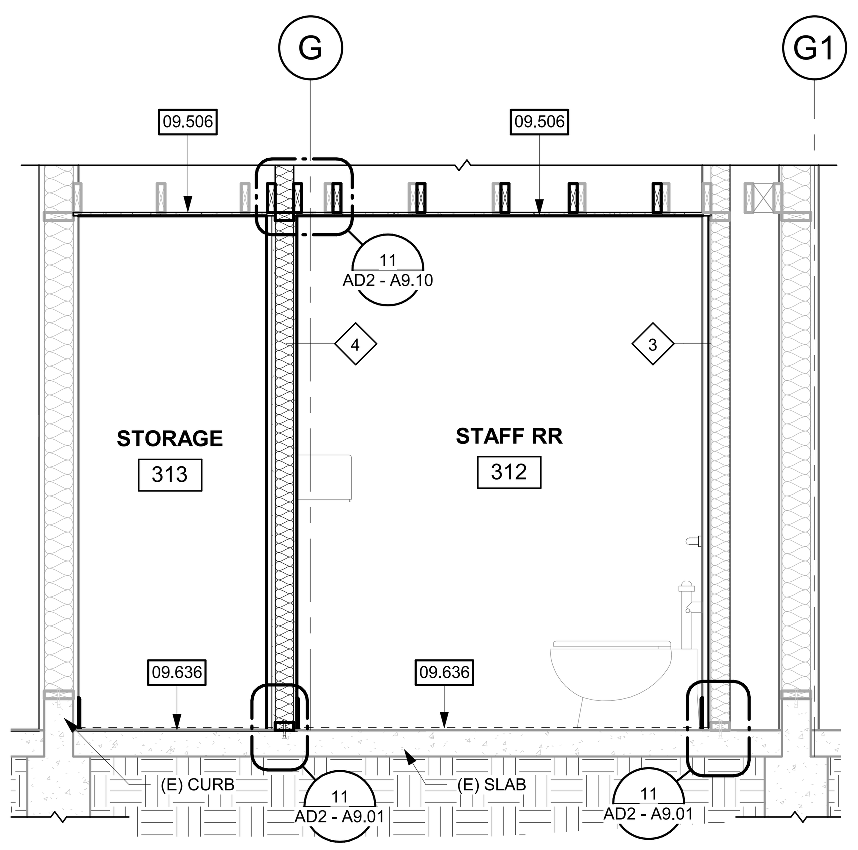
4 INTERIOR ELEVATIONS - MEN 310
SCALE: 1/4" = 1'-0"



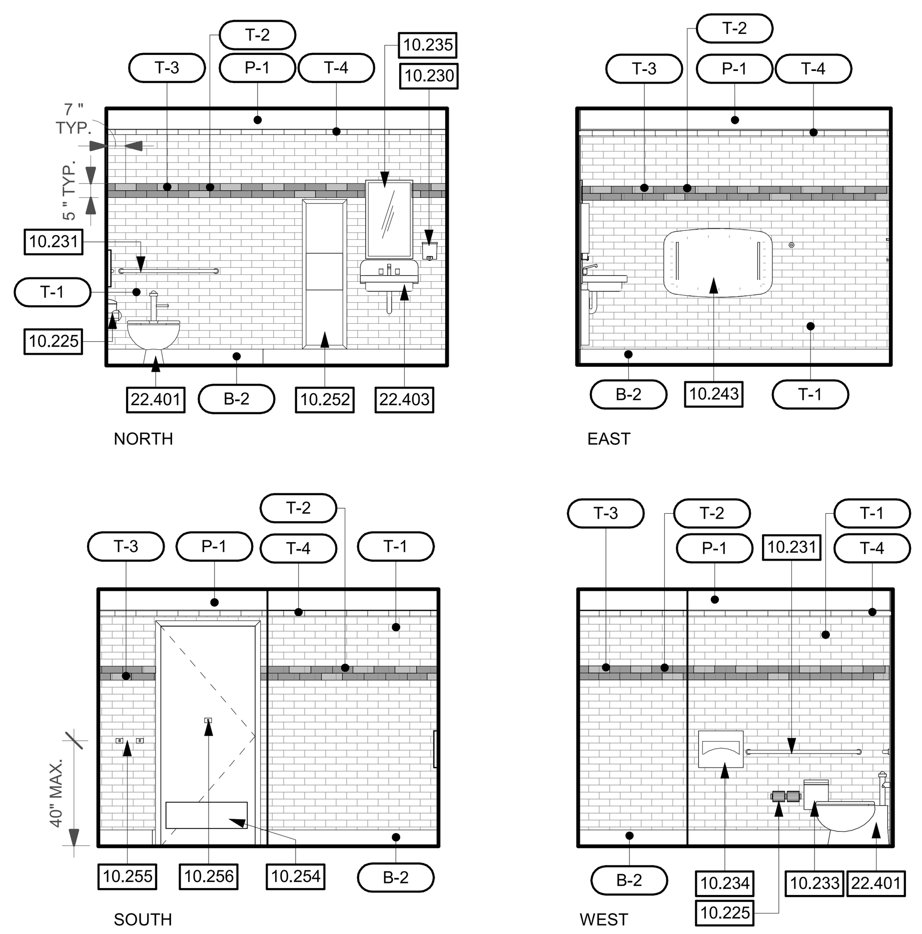
5 INTERIOR ELEVATIONS - WOMEN 311
SCALE: 1/4" = 1'-0"



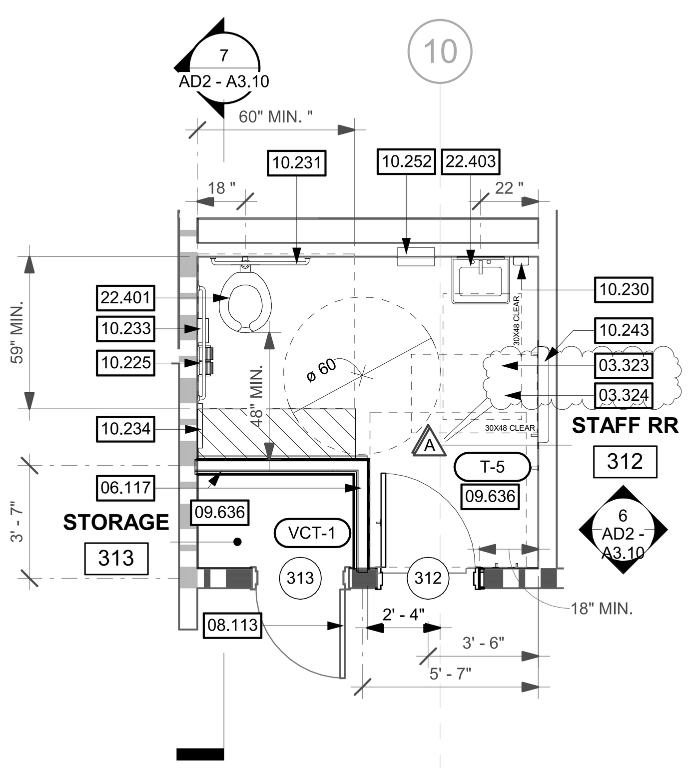
1 ENLARGED RESTROOM PLANS - 310, 311
SCALE: 1/4" = 1'-0"



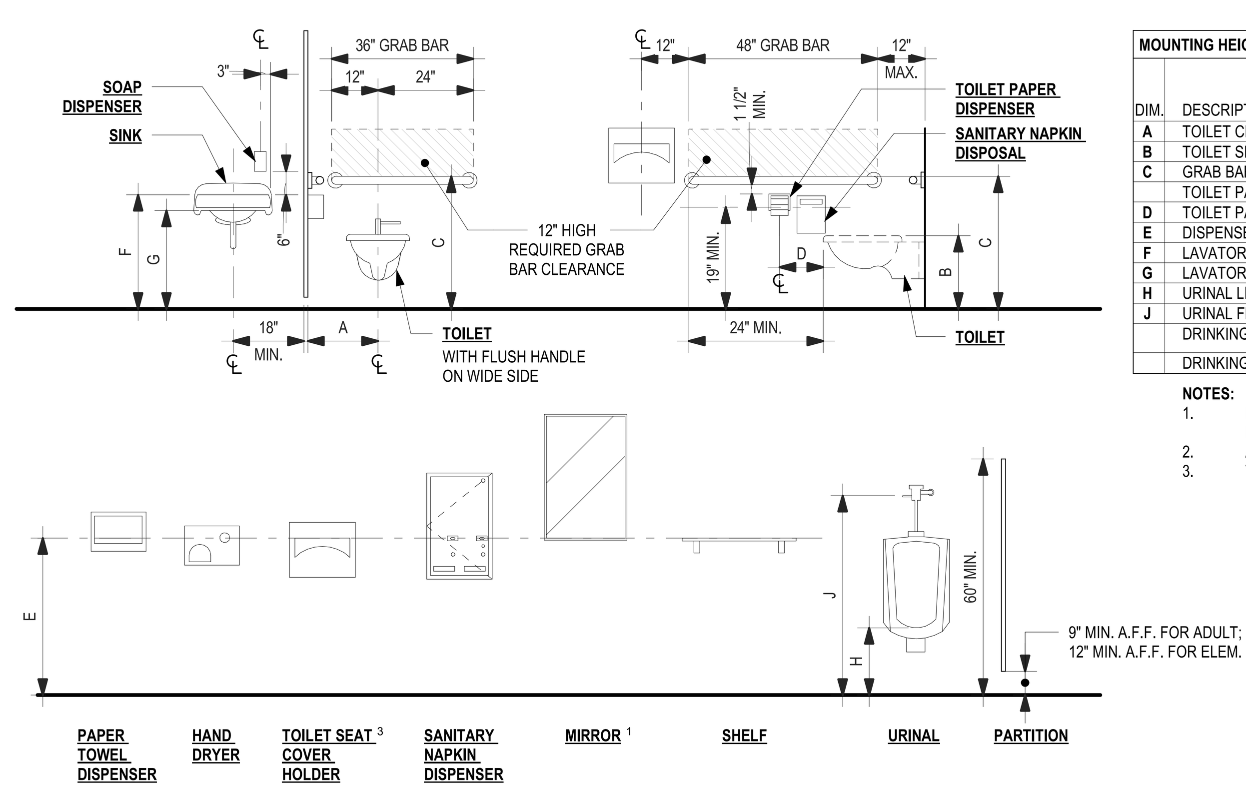
7 SECTION A - ACC. STAFF RESTROOM 312
SCALE: 1/2" = 1'-0"



6 INTERIOR ELEVATIONS - UNISEX ACCESSIBLE STAFF RESTROOMS 312
SCALE: 1/4" = 1'-0"



2 ENLARGED PLAN - ACC. STAFF RESTROOM 312
SCALE: 1/4" = 1'-0"

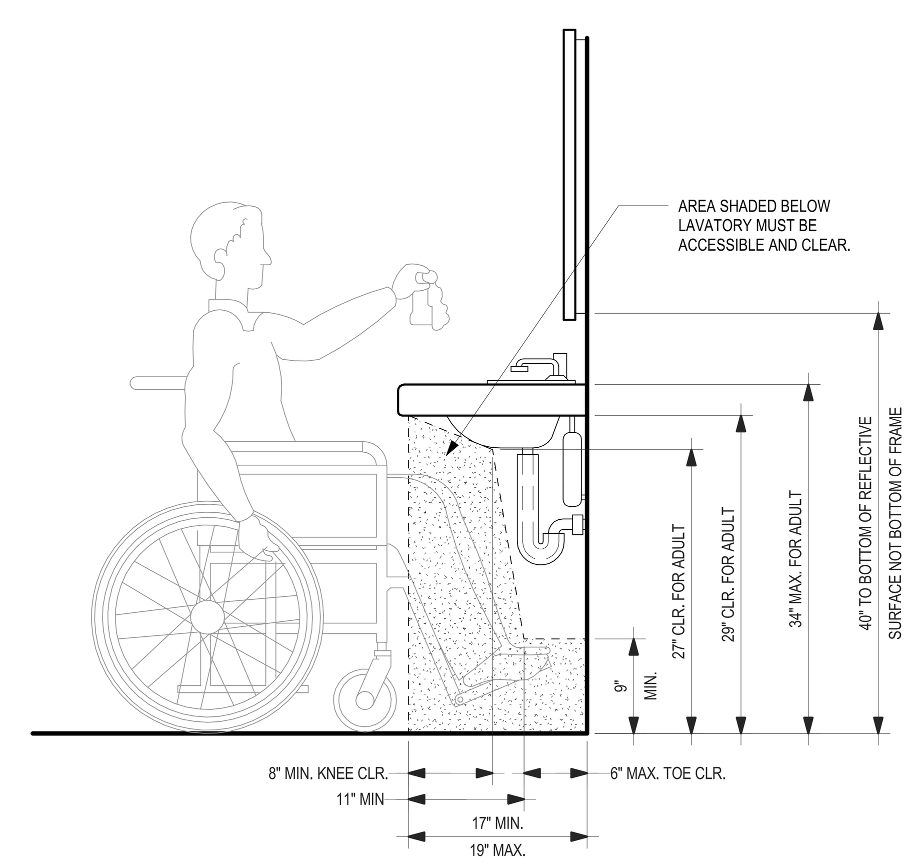


MOUNTING HEIGHTS

DIM.	DESCRIPTION	ADULT[2] (INCHES)	ELEM. (INCHES)	D.A. ADULT[2] (INCHES)	D.A. ELEM. (INCHES)	D.A. KINDER. (INCHES)
A	TOILET CENTERING FROM WALL	17-18	15	17-18	15-18	15
B	TOILET SEAT HEIGHT	15	15	17-19	15-17	12-15
C	GRAB BAR HEIGHT	-	-	33-36	22-27	20-25
	TOILET PAPER OUTLET HEIGHT AFF	19	19	19	17-19	14-17
D	TOILET PAPER IN FRONT OF TOILET	7-9	7-9	7-9	7-9	7-9
E	DISPENSER/ MIRROR HEIGHT/ SHELF	44	36	40 MAX.	40 MAX.	40 MAX.
F	LAVATORY/SINK TOP HEIGHT	34	29	34 MAX.	31 MAX.	31 MAX.
G	LAVATORY/SINK KNEE CLEARANCE	27	24	27 MIN.	24 MIN.	24 MIN.
H	URINAL LIP HEIGHT	24	17	17 MAX.	17 MAX.	17 MAX.
J	URINAL FLUSH HANDLE HEIGHT	-	-	44 MAX.	44 MAX.	44 MAX.
	DRINKING FOUNTAIN BUBBLER HEIGHT	42	38	36 MAX. FRONT APPROACH	30 MAX. PARALLEL APPROACH	30 MAX. PARALLEL APPROACH
	DRINKING FOUNTAIN KNEE CLEARANCE	-	-	27 MIN.	24 MIN.	24 MIN.

NOTES:
1. FOR MIRRORS NOT MOUNTED ABOVE A LAVATORY, AT LEAST ONE MIRROR IS TO BE MOUNTED @ 35" MAX., PER 2016 CBC SEC 11B-603.3.
2. ADULT DIMENSIONS ARE FOR THOSE ABOVE AGE 12.
3. TOILET SEAT COVER HOLDER AT D.A. STALL SHALL BE MOUNTED ON SIDE WALL

8 TYPICAL FIXTURE MOUNTING HEIGHTS
SCALE: 1/4" = 1'-0"



3 KNEE CLEARANCE AT LAVATORY
SCALE: 1" = 1'-0"

GENERAL SHEET NOTES

A REFER TO FINISH SCHEDULE FOR INTERIOR FINISHES NOT SHOWN ON ELEVATIONS.

B PROVIDE 6" CONCRETE CURB AT ALL EXTERIOR WALLS AND TOILET ROOM WALLS.

C ALL TOILET ROOM STUD WALLS SHALL HAVE NEW SOUND ATTENUATION INSULATION.

D PROVIDE WALL BLOCKING AT ALL TOILET FIXTURE AND ACCESSORY MOUNTING LOCATIONS. SEE TYPICAL BACKING AND BLOCKING DETAILS.

E FOR TOILET ROOM FIXTURE MOUNTING HEIGHTS, SEE TYPICAL FIXTURE MOUNTING HEIGHTS DETAIL.

F FOR SHOWER STALL FIXTURE MOUNTING HEIGHTS, SEE FIXTURE MOUNTING HEIGHTS @ ACCESSIBLE SHOWER STALL DETAIL.

G WATER SUPPLY AND DRAIN PIPES ACCESSIBLE UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE OBJECTS OR SURFACES UNDER LAVATORIES, TYP.

H ALL ITEMS REFERENCED IN KEYNOTES ARE TO BE PROVIDED NEW, U.O.N.

I WHERE SLAB IS TO BE SAW CUT FOR NEW OR EXISTING FIXTURES, REFER TO DETAIL 15/A9.10 FOR CONCRETE SLAB REPAIRS

ENLARGED PLAN KEYNOTES

02.207 (E) WATER CLOSET
02.208 (E) URINAL
02.209 (E) D.A. LAVATORY
02.213 (E) SOAP DISPENSER
02.214 (E) PAPER TOWEL DISPENSER
02.215 (E) D.A. URINAL
02.216 (E) MIRROR
02.217 (E) GRAB BAR
02.218 (E) TOILET PAPER DISPENSER
02.219 (E) SEAT COVER DISPENSER
02.220 (E) REINSTALL (E) TOILET PAPER DISPENSER PER TYPICAL FIXTURE MOUNTING HEIGHT 8 / AD2 - A3.10
02.221 (E) REINSTALL (E) SANITARY NAPKING DISPENSER PER TYPICAL FIXTURE MOUNTING HEIGHT 8 / AD2 -
02.222 (E) D.A. WATER CLOSET
02.416 (E) CERAMIC TILE TO REMAIN
02.455 (E) KICKPLATE
03.323 INFILL TRENCHED AREA WITH CONCRETE PER DETAIL 20 / AD2 - A9.10 (A)
03.324 INSTALL NEW FLOORING PER FINISH FLOOR PLAN ON AD2-A11.01
06.117 NEW 2x4 DFL#2 WALL STUDS @ 16" O.C. 7 / AD2 - A9.01, 9 / AD2 - A9.01, 10 / AD2 - A9.01, 13 / AD2 - A9.01, & 15 / AD2 - A9.01
08.111 PROVIDE 10" MIN. KICK PLATE COVERING WIDTH OF DOOR ON THE PUSH SIDE
08.113 REUSE (E) DOOR; PROVIDE (N) DOOR HARDWARE. SEE DOOR SCHEDULE
09.506 GYPSUM BOARD CEILING, SEE DETAIL 11 / AD2 - A9.10
09.636 FLOOR FINISH, SEE ENLARGED ACCESSIBLE STAFF RR FINISH FLOOR PLAN ON A11.01
09.910 INSTALL TILE O/ THINSET O/ BACKER BOARD WHERE TILE HAS BEEN REMOVED; CONTRASTING COLOR OF CERAMIC SUBWAY TILE TBD; SEE DETAIL 8 / AD2 - A3.10 & 8 / AD2 - A9.10
10.202 FLOOR MOUNTED, OVERHEAD BRACED, SOLID COLOR REINFORCED COMPOSITE SUBSTRATE URINAL SCREEN. SEE DETAIL 6 / AD2 - A9.10
10.203 FLOOR MOUNTED, OVERHEAD BRACED, SOLID COLOR REINFORCED COMPOSITE SUBSTRATE TOILET COMPARTMENT. SEE DETAIL 6 / AD2 - A9.10
10.225 STAINLESS STEEL DOUBLE-ROLL TOILET TISSUE ROLL DISPENSER. FOR MOUNTING HEIGHTS SEE DETAIL 8 / AD2 - A3.10
10.226 STAINLESS STEEL SINGLE ROLL ADA TOILET TISSUE ROLL DISPENSER. FOR MOUNTING HEIGHTS SEE DETAIL 8 / AD2 - A3.10
10.230 STAINLESS STEEL SOAP DISPENSER. FOR MOUNTING HEIGHTS SEE DETAIL 8 / AD2 - A3.10
10.231 STAINLESS STEEL 1 1/2" DIAMETER GRAB BAR, 36" LONG AT BACK AND 42" LONG AT SIDE WALL. FOR MOUNTING HEIGHTS AND ANCHORAGE DETAILS SEE 8 / AD2 - A3.10 & 10 / AD2 - A9.10
10.233 STAINLESS STEEL SURFACE MOUNTED SANITARY NAPKIN DISPOSAL UNIT. FOR MOUNTING HEIGHTS SEE DETAIL 8 / AD2 - A3.10
10.234 STAINLESS STEEL SURFACE MOUNTED SEAT-COVER DISPENSER. FOR MOUNTING HEIGHTS SEE DETAIL 8 / AD2 - A3.10
10.235 MIRROR UNIT WITH STAINLESS STEEL ANGLE FRAME. REFER TO DETAILS 8 / AD2 - A3.10 & 4 / AD2 - A9.10
10.243 DIAPER-CHANGING STATION. FOR ANCHORAGE SEE DETAIL 16 / AD2 - A9.10
10.247 REPLACE (E) STALL HARDWARE FOR AN ACCESSIBLE U-PULL ON BOTH SIDES WITH SLIDING LOCK
10.249 STALL DOOR WITH SELF CLOSING HINGES
10.252 RECESSED COMBINATION PAPER TOWEL DISPENSER AND TRASH RECEPTABLE. FOR MOUNTING HEIGHTS SEE DETAIL 8 / AD2 - A3.10
10.254 STAINLESS STEEL KICKPLATE
10.255 SURFACE-MOUNTED UTILITY HOOK, PROVIDE BLOCKING PER DETAIL 8 / AD2 - A9.10
10.256 COAT HOOK WITH BUMPER
22.401 D.A. WATER CLOSET, S.P.D. AND SEE TYPICAL FIXTURE MOUNTING HEIGHTS DETAIL 8 / AD2 - A3.10
22.403 D.A. WALL-MOUNTED UTILITY LAVATORY, S.P.D. AND SEE TYPICAL FIXTURE MOUNTING HEIGHTS DETAIL 8 / AD2 - A3.10
22.412 WALL-MOUNTED UTILITY LAVATORY, S.P.D. AND SEE TYPICAL FIXTURE MOUNTING HEIGHTS DETAIL 8 / AD2 - A3.10

FINISH LEGEND

P-1 PAINT INTERIOR COLOR - 1
B-2 6" WHITE SANITARY COVE BASE, DALTILE ARTIC WHITE 0190, SHAPE# S3619, SEE DTL. 12 / AD2 - A9.01
T-1 3x6, DALTILE ARTIC WHITE 0190
T-2 3x6, ACCENT 1, DALTILE 1469
T-3 3x6, ACCENT 2, DALTILE 0148
T-4 2X6, BULLNOSE, DALTILE ARTIC WHITE 0190, SHAPE# A4200
T-5 12x24 FLOOR TILE

NOTE: SEE FINISH SCHEDULE ON SHEET A11.01 FOR ALL FINISHES AND COLORS

REMOVE AREA OF (E) TILE DOWN TO STUDS; PROVIDE TILE O/ THINSET O/ BACKERBOARD

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PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE
SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

STAMP
LICENSED ARCHITECT JOSEPH A. VELA NO. C-27833 REN. 11/30/23 STATE OF CALIFORNIA

STATE
DSA FILE NUMBER 48-C1
APPL # 02-120607

REVISIONS

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A	Addendum 2	04/12/23

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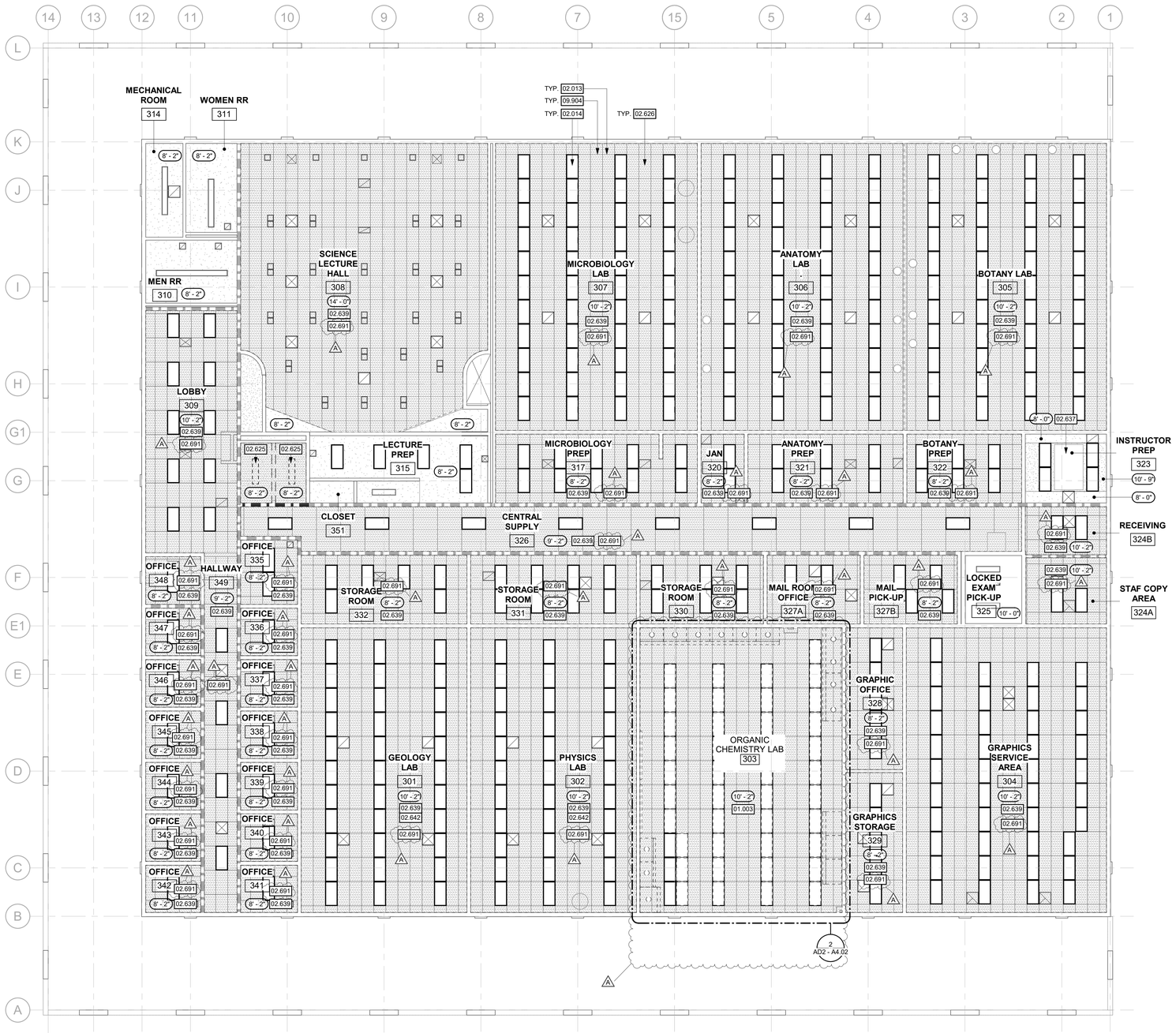
SHEET
ENLARGED RESTROOM PLANS & ELEVATIONS

DATE 04.12.2023
JOB # 2022012
SHEET # AD2 - A3.10

4/18/2023 5:20:51 PM



1 **DEMO REFLECTED CEILING PLAN - LEVEL 1**
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

A ROOM NAMES OR NUMBERS MAY NOT BE CONSISTENT BETWEEN DEMOLITION AND NEW PLANS.

B REFER TO, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR EXTENT OF MECHANICAL, PLUMBING, AND ELECTRICAL WORK.

C REFER TO FINISH SCHEDULE ON SHEET A11.01 FOR CEILING FINISHES NOT SHOWN.

F ALL ITEMS REFERENCED IN KEYNOTES ARE TO BE PROVIDED NEW, U.O.N.

REFLECTED CEILING PLAN KEYNOTES

01.003	SEE ENLARGED RCP PLAN FOR KEYNOTES
02.013	(E) ACOUSTICAL CEILING GRID TO REMAIN
02.014	(E) LIGHTING FIXTURES TO REMAIN U.O.N.
02.625	REMOVE (E) LIGHT FIXTURE, S.E.D.
02.626	REMOVE (E) ACCOUSTICAL CEILING TILE. KEEP THE (E) GRID .
02.637	(E) SKYLIGHT TO REMAIN
02.639	DEMOLISH (E) CEILING TILES. (E) CEILING GRID TO REMAIN
02.642	PROTECT (E) STENCIL PAINTING DURING CONSTRUCTION
02.691	REMOVE (E) BATT INSULATION ABOVE SUSPENDED CEILING TILES AND REPLACE AFTER INSTALLING NEW TILES
09.904	CLEAN AND PAINT (E) CEILING GRID, TYP.

GRAPHIC KEY

(E) 2'-0" x 4'-0" A.C.T. CEILING TILES TO BE REMOVED

(E) CEILING GRID TO REMAIN

(E) CEILING TILES TO BE REMOVED

(E) GYPSUM BOARD CEILING TO REMAIN

(E) GYPSUM BOARD CEILING TO BE REMOVED

MECHANICAL SYMBOLS

SUPPLY AIR

RETURN AIR

EXHAUST

(E) MECHANICAL REGISTERS TO REMAIN, U.O.N. REFER TO MECHANICAL DRAWINGS

ELECTRICAL SYMBOLS

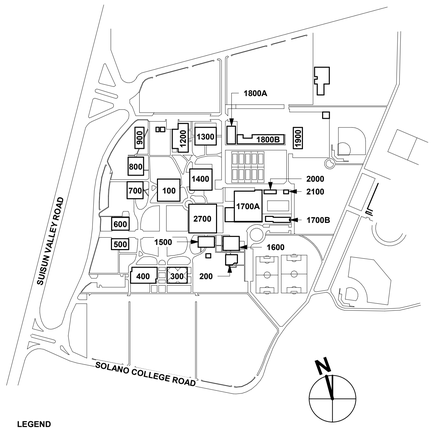
SURFACE MOUNTED LIGHT FIXTURE

2x4 LIGHT FIXTURE

(E) LIGHT FIXTURE TO REMAIN, U.O.N.

SURFACE MOUNTED LIGHT FIXTURE — (E) LIGHT FIXTURE TO BE DEMOLISHED

BUILDING KEY



LEGEND

BUILDINGS IN SCOPE

aedis architects

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387 S. 1st Street, Suite 300
San Jose, CA 95113
tel: (408)-300-5160
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PROJECT

Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

STAMP

STATE

LICENSED ARCHITECT JOSEPH A. DIAZ NO. C-29808 REN. 12/31/23 STATE OF CALIFORNIA

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD

DD

50% CD

90% CD

SHEET

DEMO REFLECTED CEILING PLAN

DATE 04.12.2023

JOB # 2022012

SHEET # AD2 - A4.00

4/18/2023 5:20:57 PM
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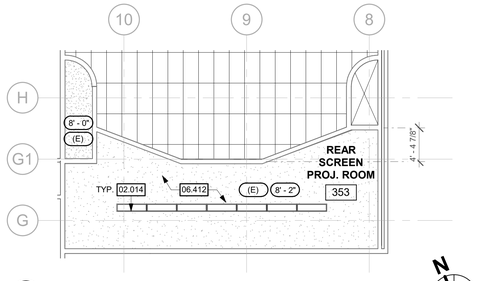
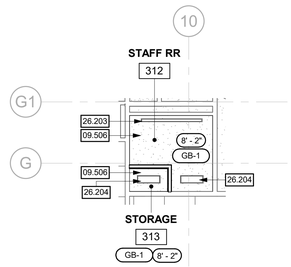
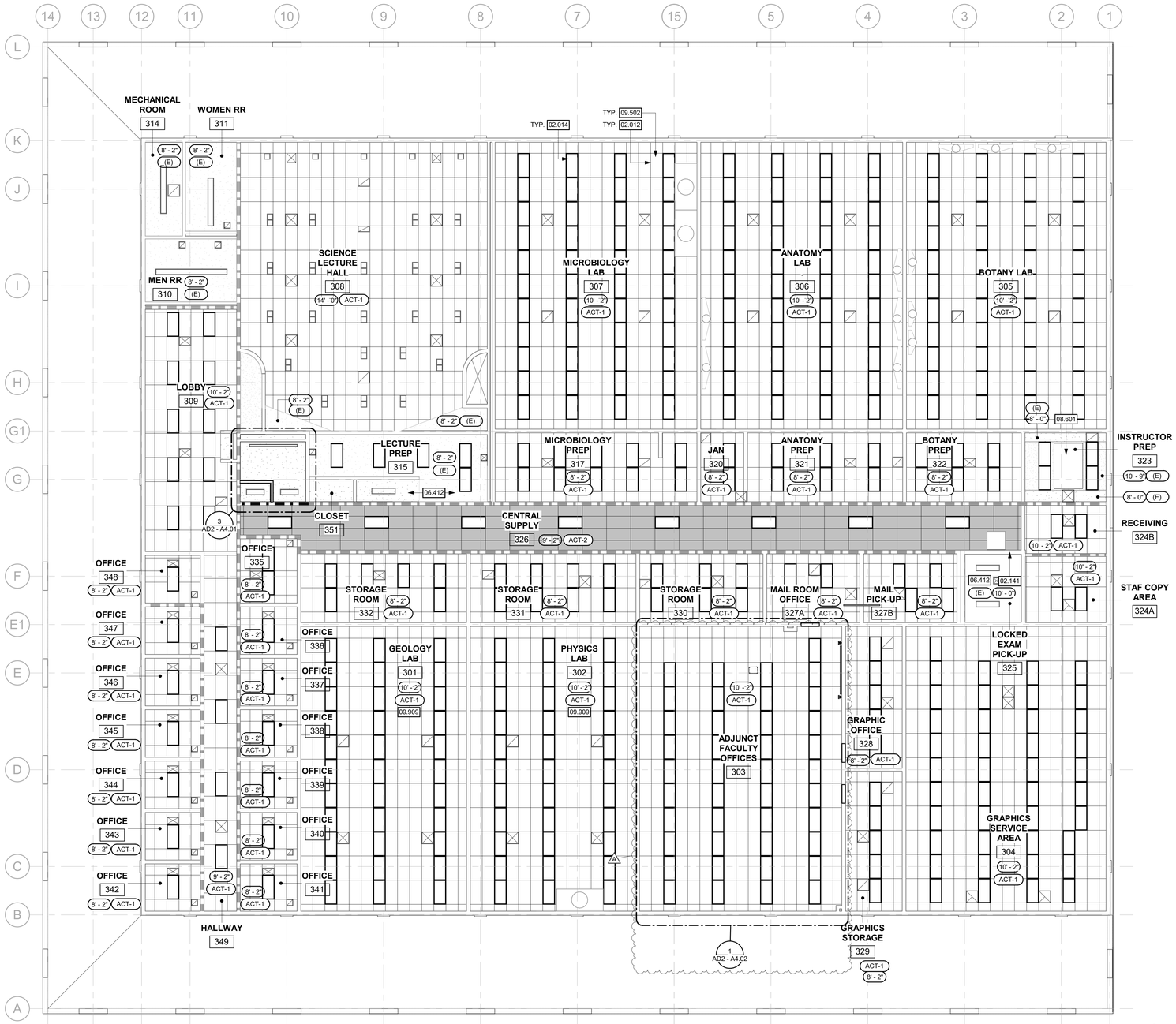


2 REFLECTED CEILING PLAN - LEVEL 2
SCALE: 1/8" = 1'-0"



3 REFLECTED CEILING PLAN - STAFF RESTROOM
SCALE: 1/8" = 1'-0"



1 REFLECTED CEILING PLAN - LEVEL 1
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

A ROOM NAMES OR NUMBERS MAY NOT BE CONSISTENT BETWEEN DEMOLITION AND NEW PLANS.

B REFER TO, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR EXTENT OF MECHANICAL, PLUMBING, AND ELECTRICAL WORK.

C REFER TO FINISH SCHEDULE ON SHEET A11.01 FOR CEILING FINISHES NOT SHOWN.

F ALL ITEMS REFERENCED IN KEYNOTES ARE TO BE PROVIDED NEW, U.O.N.

REFLECTED CEILING PLAN KEYNOTES

02.012	(E) ACOUSTICAL CEILING GRID TO REMAIN, PREP AND PAINT PER FINISH SCHEDULE
02.014	(E) LIGHTING FIXTURES TO REMAIN U.O.N.
02.141	(E) CONCRETE WALL
06.412	PAINT GYPSUM BOARD CEILING PER FINISH SCHEDULE
08.601	(E) DOME SKYLIGHT, FLASH PER DETAIL 10 / AD2 - A8.10
09.502	SUSPENDED ACOUSTICAL LAY-IN TILE CEILING (2' X 4') ON (E) GRID.
09.506	GYPSUM BOARD CEILING, SEE DETAIL 11 / AD2 - A9.10
09.909	DO NOT PAINT ABOVE MAP RAIL; PROTECT STENCIL PAINTING DURING CONSTRUCTION
26.203	SUSPENDED LINEAR LIGHT FIXTURE, S.E.D.
26.204	SURFACE MOUNTED LIGHT FIXTURE, S.E.D.

GRAPHIC KEY

2'-0" x 4'-0" A.C.T. CEILING TILES

(E) CEILING GRID TO REMAIN
PAINT P-1 PER FINISH SCHEDULE

PROVIDE TILES AT (E)
CEILING GRID

2'-0" x 4'-0" A.C.T. CEILING TILES - 1-HR RATED

(E) CEILING GRID TO REMAIN
PAINT P-1 PER FINISH SCHEDULE

PROVIDE 1-HR RATED TILES
AT (E) CEILING GRID

(E) GYPSUM BOARD CEILING TO REMAIN

GYPSUM BOARD CEILING

MECHANICAL SYMBOLS

SUPPLY AIR
RETURN AIR
EXHAUST

(E) MECHANICAL REGISTERS TO REMAIN, U.O.N.
REFER TO MECHANICAL DRAWINGS

ELECTRICAL SYMBOLS

SURFACE MOUNTED LIGHT FIXTURE
2x4 LIGHT FIXTURE

(E) LIGHT FIXTURE TO REMAIN, U.O.N.

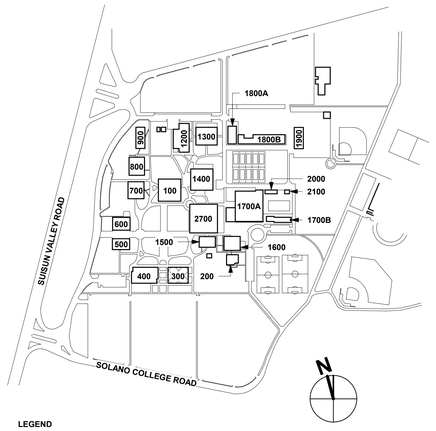
SURFACE MOUNTED LIGHT FIXTURE
SUSPENDED LIGHT FIXTURE

(N) LIGHT FIXTURE S.E.D.

FINISH LEGEND

ACT-1	2'-0" X 4'-0" ACOUSTICAL CEILING TILES
ACT-2	2'-0" X 4'-0" ACOUSTICAL CEILING TILES, 1-HR RATED
GB-1	GYPSUM BOARD PAINT P-1
(E)	EXISTING FINISH

BUILDING KEY



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SOLANO COMMUNITY COLLEGE

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

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DSA FILE NUMBER 48-C1
APPL # 02-120607

REVISIONS

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A	Addendum 2	04/12/23

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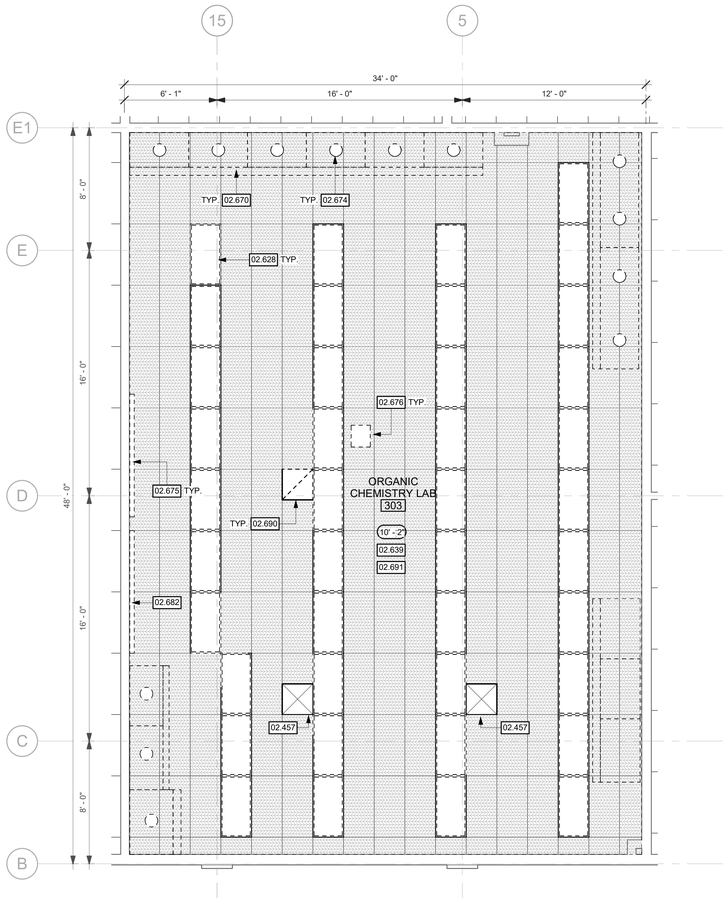
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET
PROPOSED REFLECTED CEILING PLAN

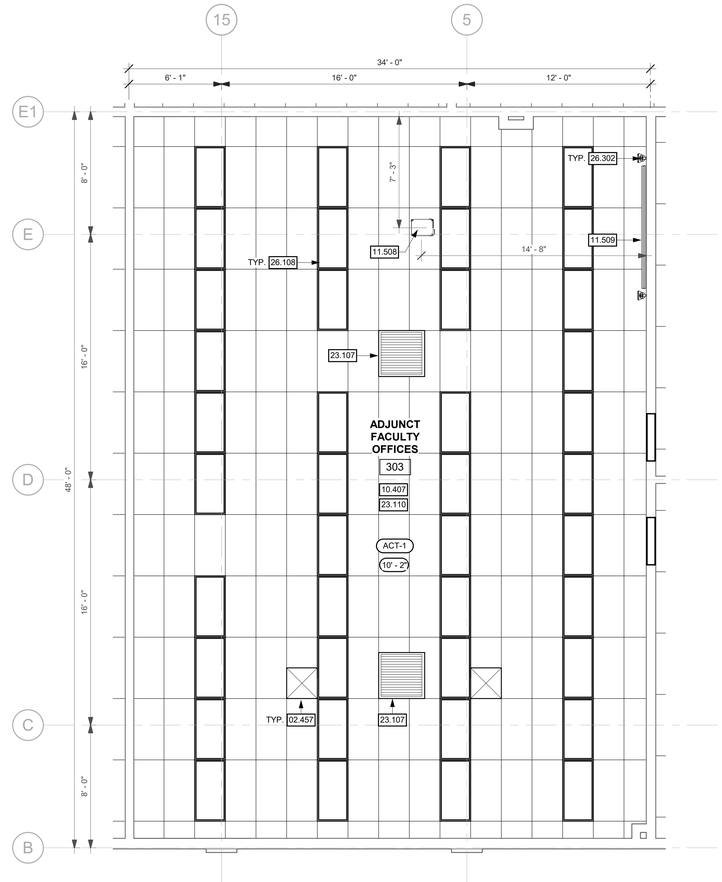
DATE 04.12.2023
JOB # 2022012
SHEET # AD2 - A4.01

4/18/2023 5:21:07 PM



2 DEMO RCP - RM 303 ORGANIC CHEMISTRY LAB

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



1 RCP - RM 303 ADJUNCT FACULTY OFFICES

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

ASBESTOS NOTE:
ASBESTOS CONTAINING PRODUCT ARE PRESENT IN THE EXISTING BUILDING CONSTRUCTION. REFER TO ASBESTOS AND LEAD BASED PAINT SURVEY REPORT PREPARED BY PMP ENVIRONMENTAL CONSULTING ON NOVEMBER 18, 2019 AS WELL AS THE REVISED REPORT AND SPECIFICATION ISSUED ON APRIL 12, 2023 FOR SOLANO COMMUNITY COLLEGE.

MATERIALS WHICH CONTAIN ASBESTOS INCLUDE GRAY PUTTY ASSOCIATED WITH BLACK SINKS, CEMENT RESIN COUNTERTOPS, TRANSITE PANELS WITHIN FUME HOODS, BEIGE HVAC TAPING LOCATED IN PLENUM AREA, ALL VINYL FLOOR TILE AND MASTIC.

IF ADDITIONAL SUSPECT MATERIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER' S REPRESENTATIVE FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH ADDITIONAL WORK. THE CONTRACTOR SHALL IMMEDIATLY POST NOTICES AND TAKE PRECAUTIONS NECESSARY TO ENSURE THE HEALTH AND SAFETY OF ALL WORKERS, THE STAFF AND THE PUBLIC.

GENERAL SHEET NOTES

A ROOM NAMES OR NUMBERS MAY NOT BE CONSISTENT BETWEEN DEMOLITION AND NEW PLANS.

B REFER TO, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR EXTENT OF MECHANICAL, PLUMBING, AND ELECTRICAL WORK.

C REFER TO FINISH SCHEDULE ON SHEET A11.01 FOR CEILING FINISHES NOT SHOWN.

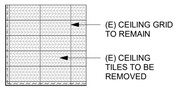
F ALL ITEMS REFERENCED IN KEYNOTES ARE TO BE PROVIDED NEW, U.O.N.

KEYNOTES

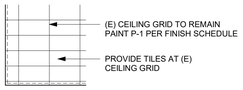
02.457	(E) MECHANICAL REGISTER TO REMAIN
02.628	DEMO (E) LIGHT
02.639	DEMOLISH (E) CEILING TILES. (E) CEILING GRID TO REMAIN
02.670	DEMO (E) FUMEHOOD, ABATEMENT PER SPECIFICATION. CAP UTILITIES PER MECHANICAL DRAWINGS AND PLUMBING.
02.674	DEMO (E) DUCT. S.M.D.
02.675	REMOVE (E) PROJECTOR SCREEN, REINSTALL PER NEW PLAN
02.676	DEMO(E) PROJECTOR , S.E.D
02.682	REMOVE (E) PROJECTOR SCREEN, RETURN TO DISTRICT
02.690	DEMO (E) MECHANICAL REGISTER, S.M.D.
02.691	REMOVE (E) BATT INSULATION ABOVE SUSPENDED CEILING TILES AND REPLACE AFTER INSTALLING NEW TILES
10.407	FIRE ALARM UPGRADES THROUGHOUT, S.F.A.D.
11.508	CEILING MOUNTED PROJECTOR O.F.C.I., S.E.D. AND MOUNTING DETAIL 19 / AD2 - A9.10
11.509	REINSTALL (E) WALL MOUNTED PROJECTOR SCREEN, SEE ANCHORAGE DETAIL 18 / AD2 - A9.10
23.107	CEILING CASSETTE, S.M.D.
23.110	RECONFIGURE MECHANICAL DUCTS, S.M.D.
26.108	LIGHT FIXTURE, S.E.D.
26.302	REINSTALL (E) WALL MOUNTED SPEAKER, S.E.D.

GRAPHIC KEY

(E) 2'-0" x 4'-0" A.C.T. CEILING TILES TO BE REMOVED



2'-0" x 4'-0" A.C.T. CEILING TILES



MECHANICAL SYMBOLS

SUPPLY AIR

RETURN AIR

(E) MECHANICAL REGISTERS TO REMAIN, U.O.N.
REFER TO MECHANICAL DRAWINGS

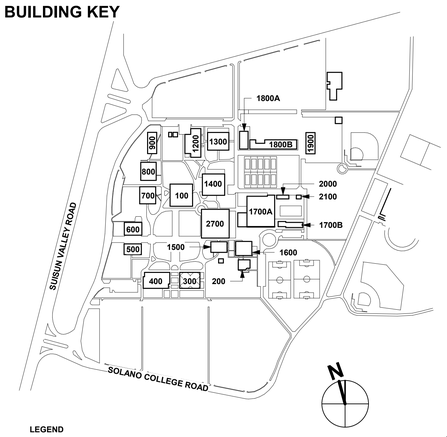
ELECTRICAL SYMBOLS

2x4 LIGHT FIXTURE TO BE DEMOLISHED

2x4 LIGHT FIXTURE (NEW)

REFER TO ELECTRICAL DRAWINGS

BUILDING KEY



LEGEND

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SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

STAMP

LICENSED ARCHITECT JOSEPH A. ESTRADA NO. C27890 EXP. 11-30-23 STATE OF CALIFORNIA

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022

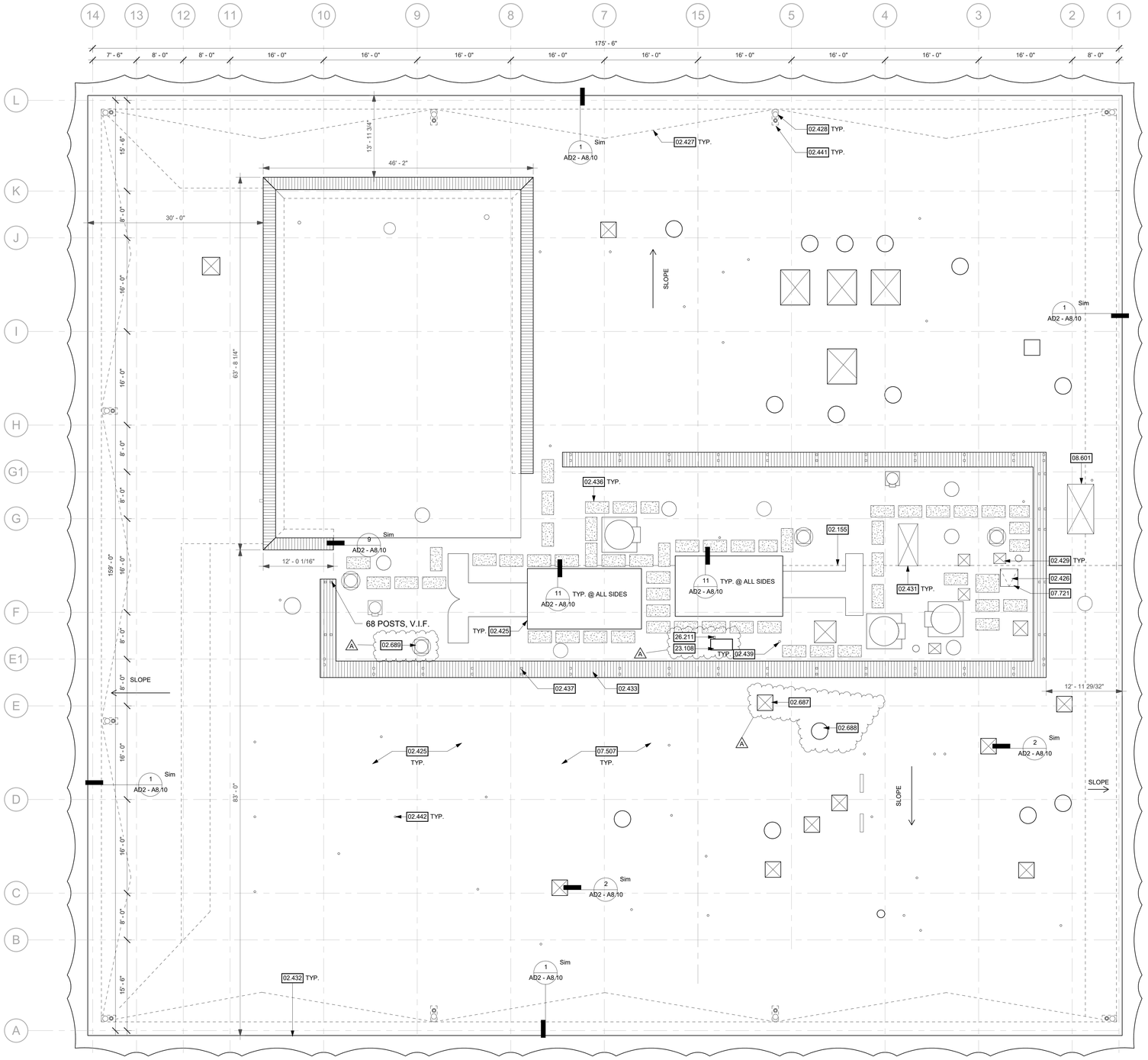
SHEET

ENLARGED DEMO & NEW RCP - ROOM 303 ADJUNCT FACULTY OFFICES

DATE 04.12.2023

JOB # 2022012

SHEET # AD2 - A4.02



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

5 / AD2 - A8.10
EQUIPMENT CURB WITH LEGS, TYP.

4 / A8.11
1 / A8.11
ROOF HATCH AND EQUIPMENT CURB, TYP.

5 / A8.11
DRAIN, TYP.

11 / AD2 - A8.10
6 / AD2 - A8.10 AND CLAMP AROUND THE EYELET EXTENSION
EQUIPMENT CURB AND FASTENING, TYP.

3 / AD2 - A8.10
6 / AD2 - A8.10 OR 7 / AD2 - A8.10
11 / AD2 - A8.10
1 / A8.11
EQUIPMENT CURB AND PIPE PENETRATION, TYP.

KEEP METAL CAP. TREAT AS TYPICAL PENETRATION TO BE FLASH WITH **CUSTOM** PRE-FABRICATED SPLIT PIPE SEAL FOR **SQUARE** TUBULAR STANCHION, SEE DETAIL 3 / A8.11
MECHANICAL SCREEN BASE WITH SQUARE TUBE STANCHION TYP.

6 / AD2 - A8.10 OR 7 / AD2 - A8.10
GLASS VENT, TYP.

10 / AD2 - A8.10
SKYLIGHT

6 / AD2 - A8.10
VENT, TYP.

GENERAL SHEET NOTES

A REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR EXTENT OF MECHANICAL, PLUMBING, AND ELECTRICAL WORK.

B ALL EXPOSED SHEET METAL SHALL BE KYNAR COATED ALUMINUM OR STAINLESS STEEL.

C ALL TAPERED CRICKETS TO BE NEW.

D CONTRACTOR IS RESPONSIBLE FOR STAGING, FENCING AND SECURITY OF ALL MATERIALS AND EQUIPMENT.

E SIZE OF MECHANICAL EQUIPMENT PADS ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL VERIFY REQUIRED PAD DIMENSION WITH EQUIPMENT MANUFACTURER.

F ROOF CRICKETS, WHERE INDICATED, SHALL BE PROVIDED AS REQUIRED TO ENSURE A MINIMUM 1/4" PER FOOT VALLEY SLOPE. COORDINATE LOCATIONS OF CRICKETS WITH ROOFTOP EQUIPMENT.

G PROVIDE PRECAST CONCRETE SPLASH BLOCK AT ALL EXISTING AND NEW DOWNSPOUT THAT ARE DAYLIGHTED TO PAVEMENT AND LANDSCAPED AREAS. SPLASH BLOCKS TO SLOPE AWAY FROM BUILDING. AVOID PLACEMENT OF SPLASH BLOCKS WHERE IT DIRECTLY INTERFERES WITH PATH OF TRAVEL OR POSES A HAZARD. SPLASH BLOCKS TO HAVE MINIMUM DIMENSION OF 20" L X 12"WX 3" H. PROVIDE CUT SHEETS AND SAMPLE OF SPLASH BLOCK AS PART OF SUBMITTAL PROCESS.

H WHENEVER POSSIBLE, REUSE BLOCKING AT MECHANICAL EQUIPMENT CURBS. REPLACE BLOCKING IN KIND WHEN TOO DAMAGED TO REUSE.

I ALL ITEMS REFERENCED IN KEYNOTES ARE TO BE PROVIDED NEW, U.O.N.

J CONTRACTOR IS REQUIRED TO NOTIFY THE OWNER, IT'S REPRESENTATIVE & ARCHITECT PRIOR TO DISCONNECTING ANY EXISTING EQUIPMENT AND/OR UTILITY LINES. PROVIDE MINIMUM OF 48 HOURS WRITTEN NOTICE PRIOR TO DISCONNECTING.

K IT IS THE CONTRACTORS RESPONSABILITY TO NOTIFY THE OWNER, OWNERS REPRESENTATIVE & ARCHITECT OF ANY EXISTING DEFORMITIES SUCH AS MOLD, DRY ROT ETC. STRUCTURAL DEFICIENCIES IN EXISTING STRUCTURE REVEALED DURING THE DEMOLITION PHASE WILL NEED TO ADDRESSED BY THE STRUCTURAL ENGINEER AND MAY REQUIRE APPROVAL OF DIVISION OF STATE ARCHITECT (DSA). IN SUCH CASES, CONTRACTOR IS REQUIRED TO PROCEED WITH THAT PORTION OF WORK ONLY AFTER WRITTEN APPROVAL BY THE STRUCTURAL ENGINEER AND/OR DSA. THIS DETERMINATION WILL BE MADE BY THE ARCHITECT AND ITS ENGINEER AND THE CONTRACTOR WILL BE PROVIDED A WRITTEN DIRECTIVE ON REMEDYING THE DEFICIENCY. ANY WORK CARRIED OUT PRIOR TO OR WITHOUT APPROVAL OF ENGINEER OR DSA (AS CASE MAY BE), WILL BE AT RISK. THE OWNER, ITS REPRENSENTATIVE AND THE ACHITECT (AND ITS ENGINEER) WILL NOT BE RESPONSIBLE FOR ANY COSTS INCURRED FOR NON-COMPLIANT WORK CARRIED OUT WITHOUT THE EXPRESS APPROVAL OF THE ENGINEER OR DSA.

L REMOVE EXISTING BUILT UP ROOF TO EXISTING SLOPED PLYWOOD SHEATHING. CLEAN ROOF AND REMOVE ANY DEBRIS, NAILS AND OTHER APPURTENANCES PRIOR TO INSTALLING NEW ROOF.

M CONTRACTOR IS REQUIRED TO VERIFY ALL DIMENSIONS, EXISTING EQUIPMENT AND CONDITIONS ON THE ROOF.

N EXISTING TILE ROOF MANSARD TO REMAIN

O ALL EXISTING PIPING, CONDUITS, OR STRUCTURAL PENETRATIONS THROUGH ROOF ARE TO BE FLASHED PER NATIONAL ROOFING CONTRACTORS ASSOCIATION STANDARD DETAILS.

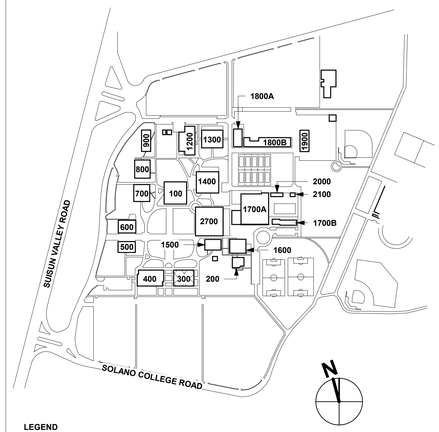
P ROOF CRICKETS, WHERE INDICATED, SHALL BE PROVIDED AS REQUIRED TO ENSURE A MINIMUM 1/4" PER FOOT VALLEY SLOPE. COORDINATE LOCATIONS OF CRICKETS WITH ROOFTOP EQUIPMENT.

Q CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL EQUIPEMENT TO REMAIN INCLUDING UTILITY LINES AND OTHER DEVICES EXISTING ON THE ROOF.

ROOF PLAN KEYNOTES

02.155	(E) RIDGE
02.425	REMOVE (E) BUILT-UP ROOF ASSEMBLY DOWN TO (E) STRUCTURAL DECKING, TYP. THROUGHOUT FULLY ADHERE 80 MIL. TPO ROOFING SYSTEM ON COVERBOARD, TYP. THROUGHOUT.
02.426	(E) ROOF HATCH TO REMAIN. FLASH PER DETAIL
02.427	(E) SLOPED PLYWOOD CRICKET, TYP. MIN. 1/4" SLOPE TOWARDS DRAIN & RIDGE MIN. 2" ABOVE DRAIN RIM, V.I.F.
02.428	NEW COMBINATION ROOF DRAIN WITH OVERFLOW, TYP.VERIFY QUANTITY IN THE FIELD. PROTECT DURING CONSTRUCTION & FLUSH AT COMPLETETION OF WORK. SEE DETAIL 5 / A8.11
02.429	(E) ROOF MOUNTED EQUIPMENT TO REMAIN. PROTECT IN PLACE. TYP.
02.431	(E) CURB MOUNTED EQUIPMENT TO REMAIN. VERIFY QUANTITY IN THE FIELD. REFER TO DETAIL PER TYPE OF EQUIPEMENT, SEE PHOTOS OF EXISTING TYPE OF EQUIPEMENT ON THE PLAN.
02.432	EDGE OF CONCRETE TILE ROOF BELOW, CLEAN TILE
02.433	(E) MECHANICAL SCREEN TO REMAIN, TYP.
02.436	WALKING PADS, TYP. LOCATE AS SHOWN. APPLY PER MFR'S INSTRUCTIONS
02.437	(E) MECHANICAL SCREEN STANCHIONS, TYPICAL OF 68, VERIFY QUANTITY IN THE FIELD. FLASH WITH CUSTOM PREFABRICATED SQUARE TUBE SPLIT WRAP PER DETAIL 3 / A8.11
02.439	(E) PLUMBING VENT, VERIFY QUANTITY IN THE FIELD. REFER TO DETAIL 7 / AD2 - A8.10
02.441	DEMO (E) ROOF DECK AT DRAIN AND OVERFLOW LOCATIONS. FRAME FOR NEW SUMPS, TYP. SEE DETAIL 5 / A8.11
02.442	(E) GLASS VENT TO REMAIN. FLASH PER DETAIL 7 / A8.11
02.687	REMOVE (E) MAKE UP AIR UNIT. FURNISH AND INSTALL NEW FAN.S.E.D. AND S.M.D.
02.688	REMOVE (E) EXHAUST FAN. SEAL AND WATERPROOF. S.E.D. AND S.M.D.
02.689	REMOVE (E) EXHAUST FAN AND DISCONNECT PER MECHANICAL PLAN. S.E.D. AND S.M.D.
07.507	FULLY ADHERE 80 MIL. TPO ROOFING SYSTEM (CLASS A) ON COVERBOARD, TYP. THOUGHOUT.
07.721	PROVIDE NEW STEEL LADDER UP SAFETY POST. BILCO LU-1 OR EQUAL. INSTALL PER 8 / AD2 - A8.10. MANUFACTURER'S REQUIREMENTS 2 / A8.11
08.601	(E) DOME SKYLIGHT. FLASH PER DETAIL 10 / AD2 - A8.10
23.108	HEAT PUMP. S.M.D.
26.211	FURNISH AND INSTALL DISCONNECT. S.E.D.

BUILDING KEY



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DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

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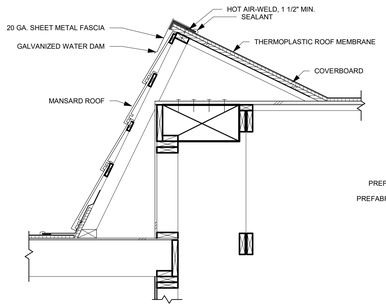
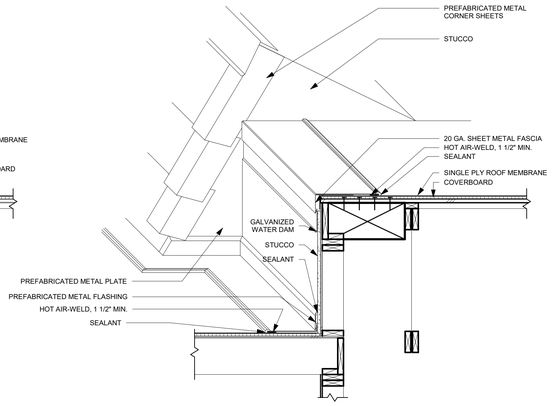
SHEET
DEMO AND NEW ROOF PLAN

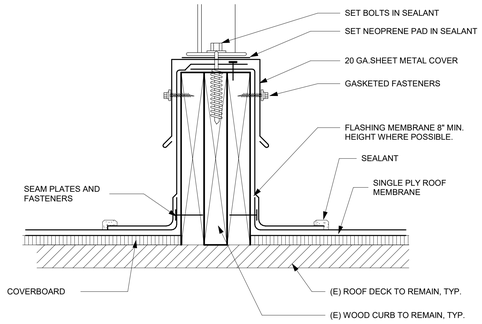
DATE 04.12.2023
JOB # 2022012
SHEET # AD2 - A5.01

4/18/2023 5:21:13 PM

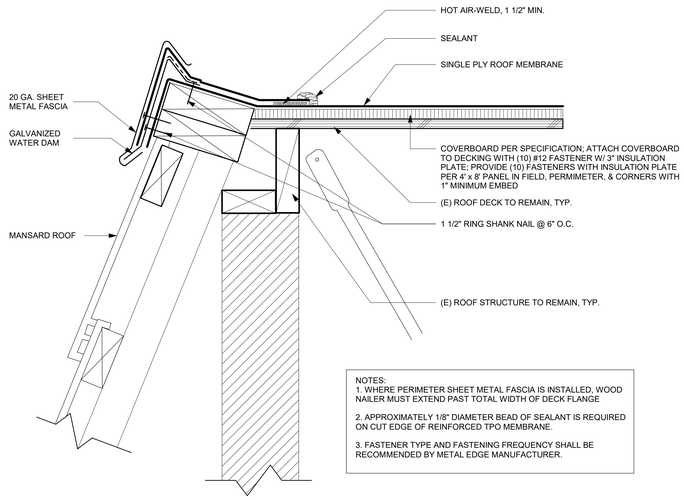




9 ROOFING TRANSITION DETAIL
SCALE: NONE



5 EQUIPMENT SUPPORT CURB, REFERENCE TO NRCA TP-9S
SCALE: NONE

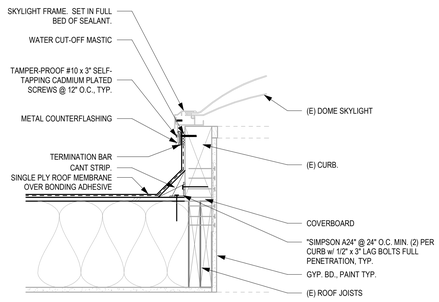


NOTES:
1. WHERE PERIMETER SHEET METAL FASCIA IS INSTALLED, WOOD NAILER MUST EXTEND PAST TOTAL WIDTH OF DECK FLANGE

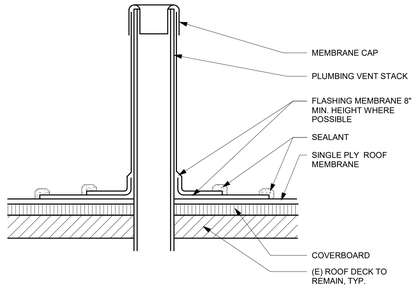
2. APPROXIMATELY 1/8" DIAMETER BEAD OF SEALANT IS REQUIRED ON CUT EDGE OF REINFORCED TPO MEMBRANE.

3. FASTENER TYPE AND FASTENING FREQUENCY SHALL BE RECOMMENDED BY METAL EDGE MANUFACTURER.

1 EMBEDDED EDGE METAL FLASHING DETAIL
SCALE: NONE



10 FLASHING @ (E) DOME SKYLIGHT CURB
SCALE: 1 1/2" = 1'-0"



NOTES:
1. VENT STACKS AND OTHER PIPES SHOULD HAVE A MINIMUM OF 12" OF CLEARANCE ON ALL SIDES FROM WALLS, CURBS, AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING.

6 PLUMBING VENT (FIELD WRAP), REFERENCE TO NRCA TP-18S
SCALE: NONE

NOTES

1. WHEN USING TPO MEMBRANE, BONDING ADHESIVE IS NOT REQUIRED WHEN THE FLASHING HEIGHT IS 12" OR LESS AND THE MEMBRANE IS FASTENED "AS SHOW" ON TOP OF THE CURB, WHEN A TERMINATION BAR IS USED BENEATH THE COUNTER-FLASHING. BONDING ADHESIVE CAN BE ELIMINATED WHEN THE MEMBRANE HEIGHT IS 18" OR LESS.

2. USE APPLICABLE BONDING ADHESIVE FOR TPO. CAV-GRIP ADHESIVE MAY ALSO BE USED ON VERTICAL PORTION FOR TPO.

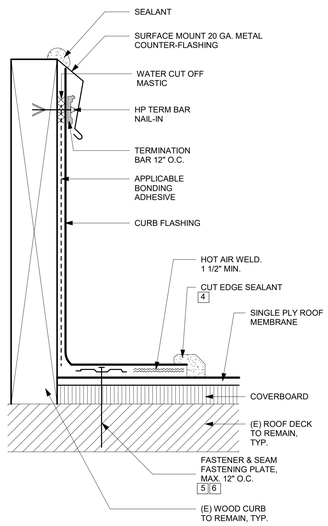
3. WHEN MECHANICAL FASTENERS ARE USED TO PENETRATE THE METAL COUNTER-FLASHING, USE EPDM WASHERS, APPLY WATER CUT-OFF MASTIC UNDER THE COUNTER-FLASHING OR CAULK THE FASTENERS HEADS.

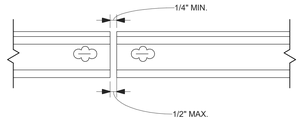
4. APPROXIMATELY 1/8" DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF REINFORCED TPO MEMBRANE.

5. REFER TO THE MF SPECIFICATIONS FOR ACCEPTABLE FASTENERS AND PLATES

6. MECHANICAL SECUREMENT MAY BE INSTALLED INTO THE VERTICAL SUBSTRATE

7. WHEN USING 80 MIL THICK CURB FLASHING, THE INTERSECTIONS BETWEEN SPLICE MUST OVERLAID WITH A THERMOPLASTIC " T-JOINT" COVER, SEE DETAIL 6/A8/11.

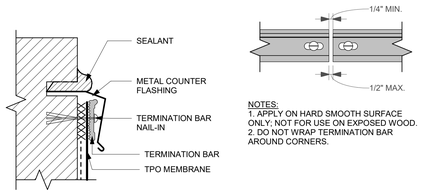




TERMINATION BAR NOTES:
1. APPLY ON HARD SMOOTH SURFACE ONLY: NOT FOR USE ON EXPOSE WOOD

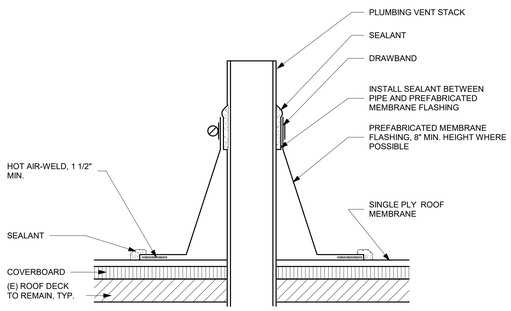
2. DO NOT WRAP TERMINATION BAR AROUND CORNERS.

2 CURB TERMINATION DETAIL WITH SURFACE MOUNT COUNTER FLASHING
SCALE: NONE

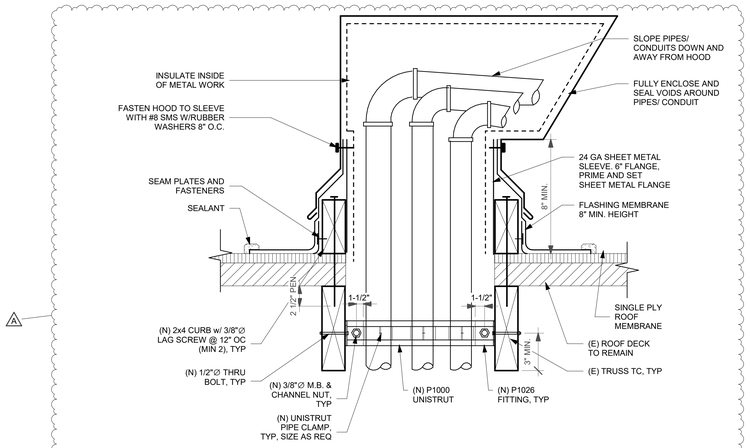


NOTES:
1. APPLY ON HARD SMOOTH SURFACE ONLY; NOT FOR USE ON EXPOSED WOOD.
2. DO NOT WRAP TERMINATION BAR AROUND CORNERS.

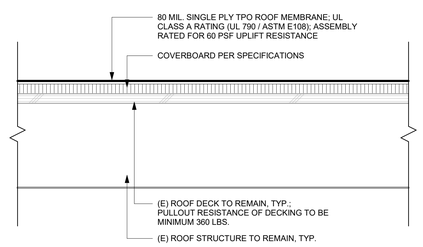
11 MECHANICAL TERMINATION WITH COUNTER FLASHING
SCALE: 1 1/2" = 1'-0"



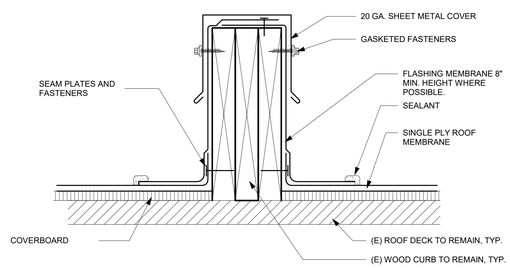
7 PLUMBING VENT (PREMANUFACTURED BOOT), SIMILAR TO NRCA TP-18AS
SCALE: NONE



12 MULTIPLE PIPE PENETRATION DETAIL @ ROOF
SCALE: 3" = 1'-0"



8 ROOF ASSEMBLY
SCALE: 3" = 1'-0"



NOTES:
1. AN AREA DIVIDER IS A RAISED DOUBLE WOOD MEMBER THAT IS PROPERLY ANCHORED TO THE ROOF DECK. AREA DIVIDERS SHOULD NEVER RESTRICT THE FLOW OF WATER.
2. FLASHING REQUIREMENT TYPICAL FOR BOTH SIDES OF THE AREA DIVIDER.

3 EQUIPMENT SUPPORT CURB REFERENCE TO NRCA TP
SCALE: NONE

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PROJECT

Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

STAMP

LICENSED ARCHITECT JOSEPH A. DI CARLO NO. C27960 REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET

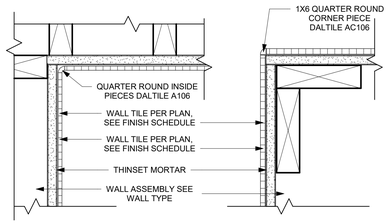
EXTERIOR DETAILS

DATE 04.12.2023

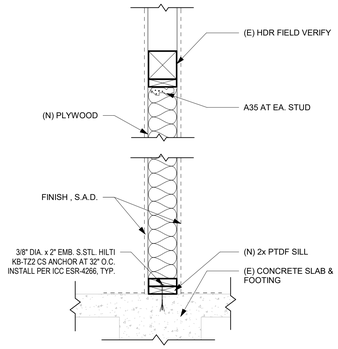
JOB # 2022012

SHEET # AD2 - A8.10

4/18/2023 5:21:14 PM

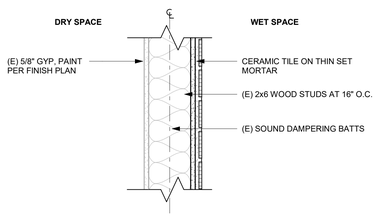


13 CORNER TRIM @ WALL TILE
SCALE: 3" = 1'-0"



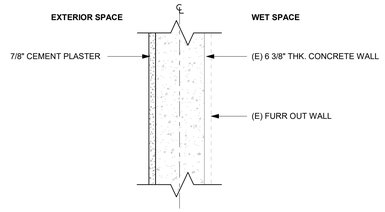
NOTE: PER CONCRETE/MASONRY ITEM 1 & WELDING ITEM 3 ON DSA 103-19, POST INSTALLED ANCHORS ARE EXEMPT AS INTERIOR NON-STRUCTURAL WALL PARTITIONS

9 WALL INFILL AT (E) DOOR OPENING - SECTION
1-HR RATED
SCALE: 1" = 1'-0"

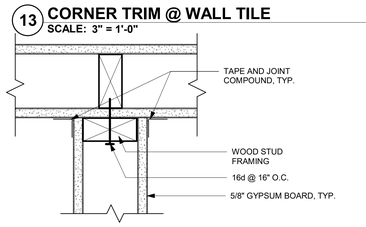


5a - PROVIDE TYPE 'X' GYP BOARD FOR 1-HR RATING

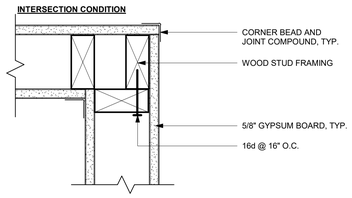
5 WALL TYPE 5
SCALE: 1 1/2" = 1'-0"



1 WALL TYPE 1
SCALE: 1 1/2" = 1'-0"

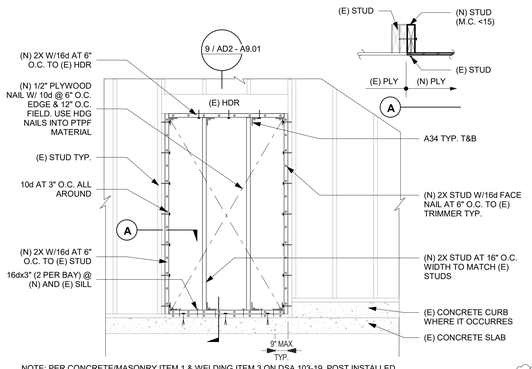


INTERSECTION CONDITION



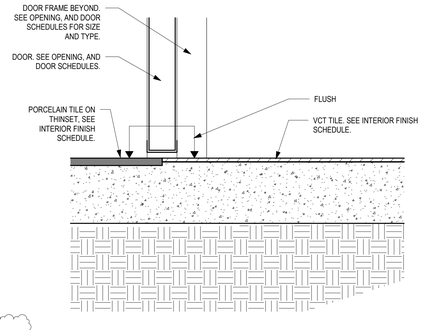
CORNER CONDITION

15 TYPICAL PARTITION DETAILS
SCALE: 3" = 1'-0"



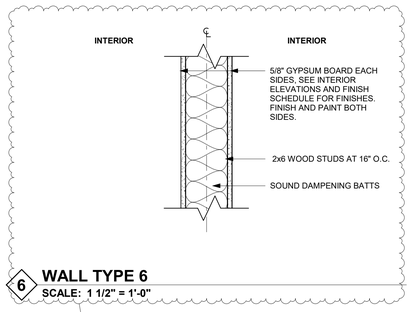
NOTE: PER CONCRETE/MASONRY ITEM 1 & WELDING ITEM 3 ON DSA 103-19, POST INSTALLED ANCHORS ARE EXEMPT AS INTERIOR NON-STRUCTURAL WALL PARTITIONS

10 WALL INFILL AT (E) DOOR OPENING - ELEVATION
1-HR RATED
SCALE: 1" = 1'-0"



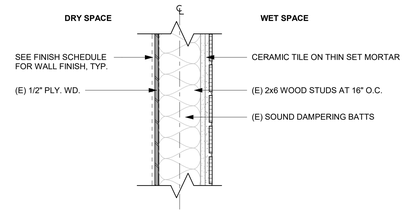
14 TYPICAL DOOR SILL DETAIL
1-HR RATED
SCALE: 3" = 1'-0"

A

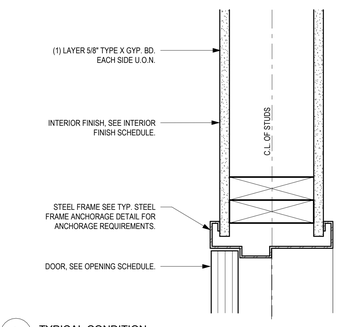


6 WALL TYPE 6
SCALE: 1 1/2" = 1'-0"

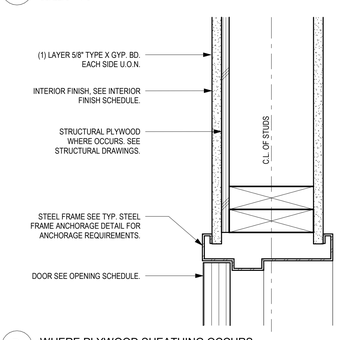
A



2 WALL TYPE 2
1-HR RATED
SCALE: 1 1/2" = 1'-0"

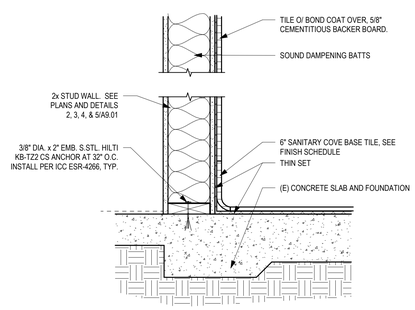


A TYPICAL CONDITION
SCALE: 3" = 1'-0"



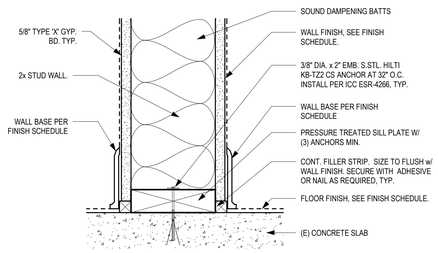
B WHERE PLYWOOD SHEATHING OCCURS
SCALE: 3" = 1'-0"

16 INTERIOR STEEL FRAME HEAD AND JAMB
1-HR RATED
SCALE: 3" = 1'-0"



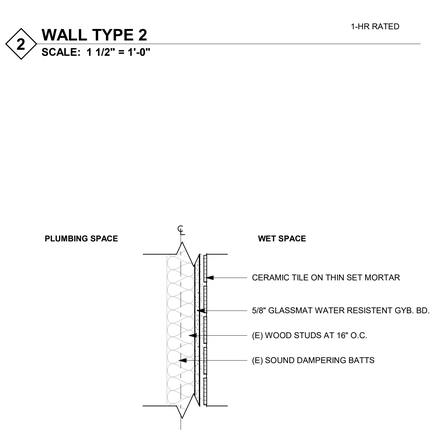
NOTE: PER CONCRETE/MASONRY ITEM 1 & WELDING ITEM 3 ON DSA 103-19, POST INSTALLED ANCHORS ARE EXEMPT AS INTERIOR NON-STRUCTURAL WALL PARTITIONS

11 COVED BASE @ TOILET ROOM - (N) WALL
SCALE: 1 1/2" = 1'-0"

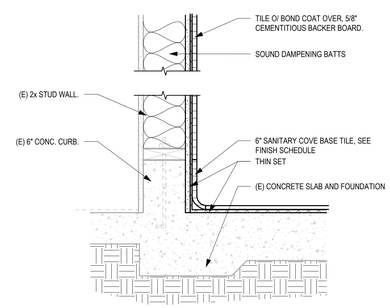


NOTE: PER CONCRETE/MASONRY ITEM 1 & WELDING ITEM 3 ON DSA 103-19, POST INSTALLED ANCHORS ARE EXEMPT AS INTERIOR NON-STRUCTURAL WALL PARTITIONS

7 TYPICAL INTERIOR WALL BASE (2x STUDS)
SCALE: 3" = 1'-0"

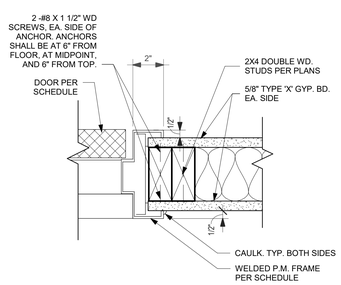


3 WALL TYPE 3
SCALE: 1 1/2" = 1'-0"

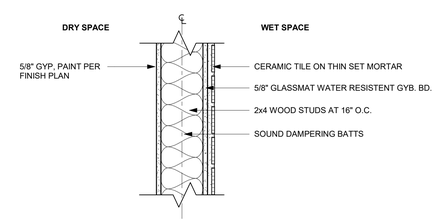


NOTE: PER CONCRETE/MASONRY ITEM 1 & WELDING ITEM 3 ON DSA 103-19, POST INSTALLED ANCHORS ARE EXEMPT AS INTERIOR NON-STRUCTURAL WALL PARTITIONS

12 COVED BASE @ TOILET ROOM - (E) WALL W/ CURB
SCALE: 1 1/2" = 1'-0"



8 INTERIOR DOOR JAMB
1-HR RATED
SCALE: 3" = 1'-0"



4 WALL TYPE 4
SCALE: 1 1/2" = 1'-0"

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PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

STAMP

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

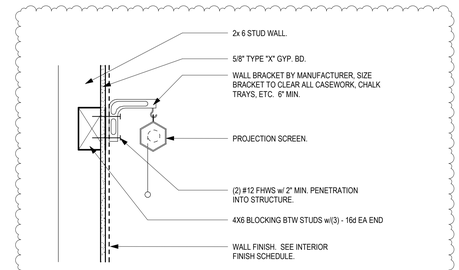
SHEET
WALL TYPES AND DETAILS

DATE 04.12.2023

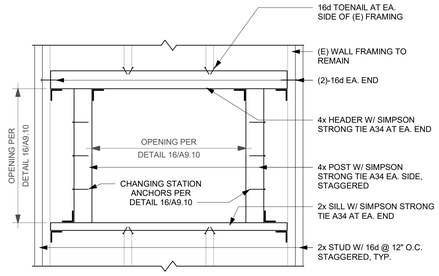
JOB # 2022012

SHEET # AD2 - A9.01

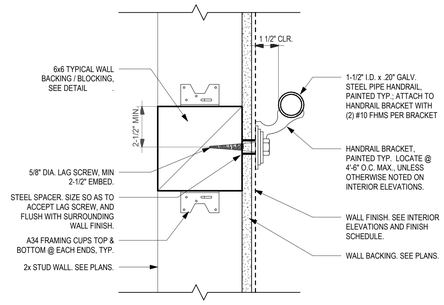
4/18/2023 5:21:16 PM



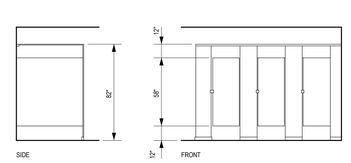
18 PROJECTION SCREEN ANCHORAGE (2x STUDS)
SCALE: 1 1/2" = 1'-0"



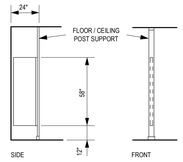
17 WALL OPENING AT DIAPER CHANGING STATION
SCALE: 1" = 1'-0"



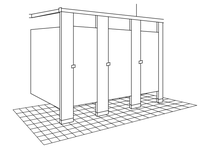
9 HANDRAIL BRACKET ANCHORAGE (2x STUDS)
SCALE: 3" = 1'-0"



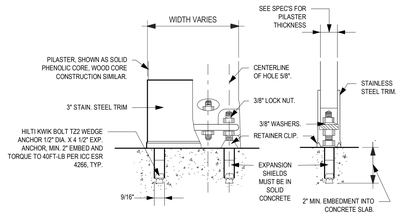
TYPICAL STALL ELEVATION



TYPICAL URINAL SCREEN ELEVATION

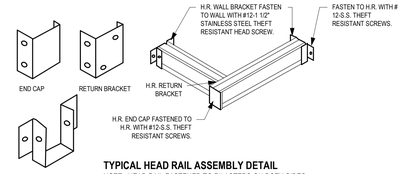


OVERHEAD BRACED



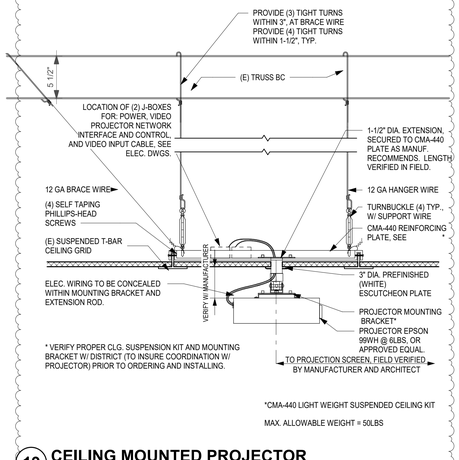
FLOOR ATTACHMENT DETAIL

NOTE: DRILL HOLES FOR FLOOR ATTACHMENT 5/8" FROM EDGE OF PILASTER. TYPICAL FOR ALL LOCATIONS. PLACE STAINLESS STEEL TRIM ON PILASTER, SLIDE UP BEFORE SECURING PILASTER TO FLOOR ATTACHMENT.

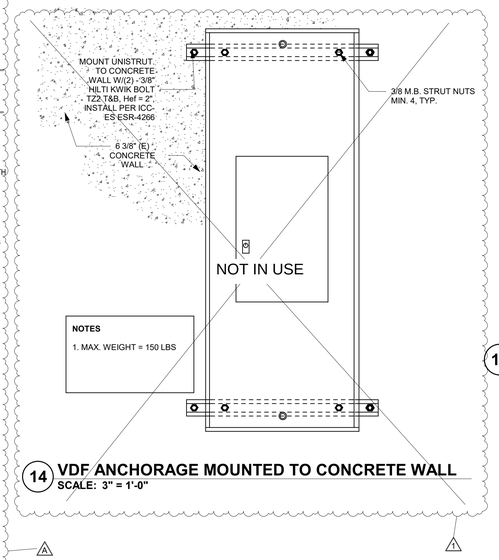


TYPICAL HEAD RAIL ASSEMBLY DETAIL

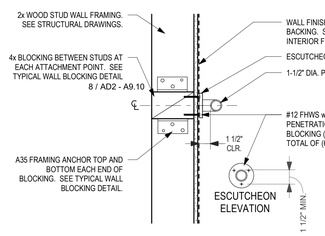
NOTE: HEAD RAIL FASTENED TO PILASTERS ON BOTH SIDES WITH #12-S.S. THEFT RESISTANT SCREWS.



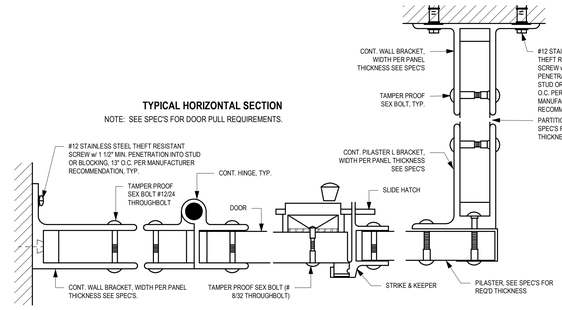
19 CEILING MOUNTED PROJECTOR
SCALE: 1 1/2" = 1'-0"



14 VDF ANCHORAGE MOUNTED TO CONCRETE WALL
SCALE: 3" = 1'-0"



10 GRAB BAR ANCHORAGE (2X STUDS)
SCALE: 1 1/2" = 1'-0"

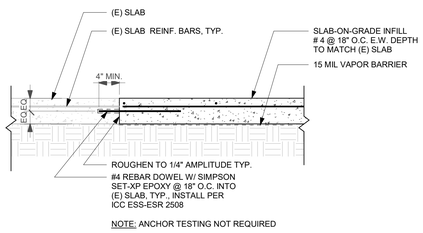


TYPICAL HORIZONTAL SECTION

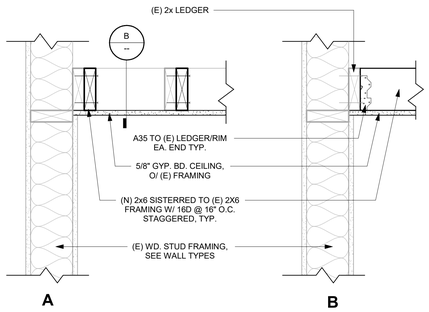
NOTE: SEE SPEC'S FOR DOOR PULL REQUIREMENTS.

6 TOILET PARTITION ANCHORAGE DETAILS
SCALE: 1 : 1

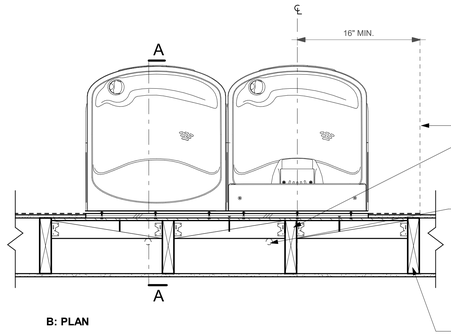
20 PIPE REMOVAL AND CONCRETE INFILL DETAIL
SCALE: 1 1/2" = 1'-0"



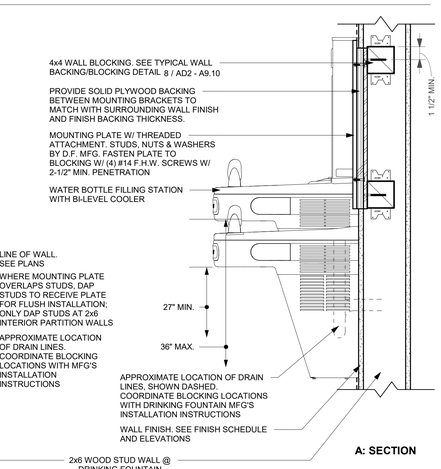
15 SLAB-ON-GRADE JOINT AT (E) SLAB
SCALE: 1" = 1'-0"



11 GYPBOARD CEILING O/ (E) FRAMING
SCALE: 1 1/2" = 1'-0"

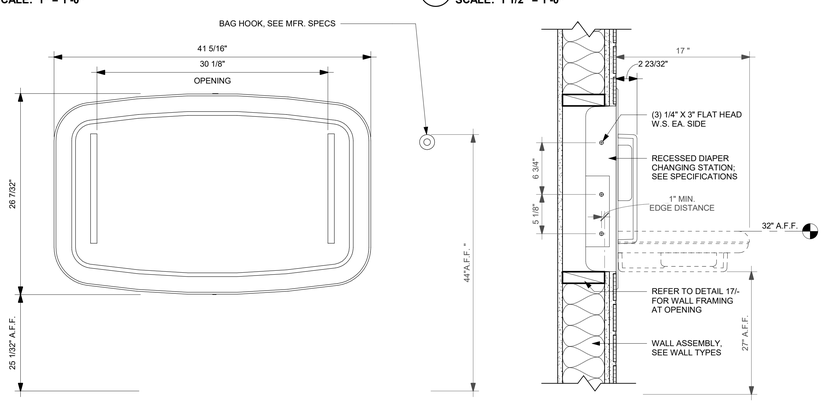


B: PLAN

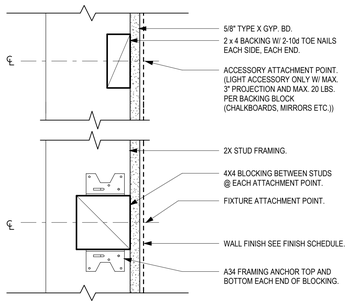


A: SECTION

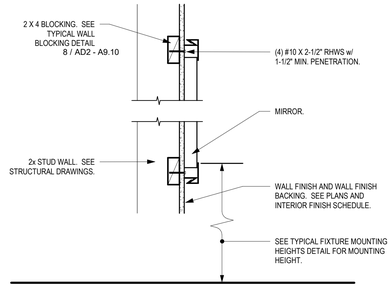
7 WATER BOTTLE FILLING STATION WITH BI-LEVEL ANCHORAGE (WOOD STUD)
SCALE: 1 1/2" = 1'-0"



16 DIAPER CHANGING STATION ANCHORAGE
SCALE: 1 1/2" = 1'-0"



8 TYPICAL WOOD WALL BACKING/ BLOCKING
SCALE: 3" = 1'-0"



4 MIRROR MOUNTING (2x STUDS)
SCALE: 1 1/2" = 1'-0"

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PROJECT

Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

STAMP

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23
1	ASI #1	xx/xx/xx

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET

INTERIOR DETAILS

DATE 04.12.2023

JOB # 2022012

SHEET # AD2 - A9.10

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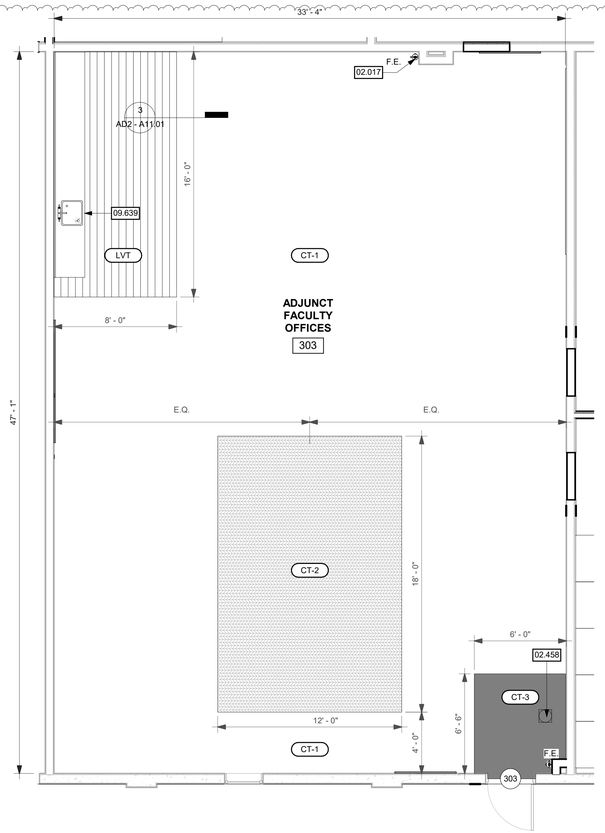
FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR FINISH	FLOOR BASE FINISH	WALL FINISH	CEILING FINISH	COMMENTS
002	SMALL CONFERENCE ROOM					
301	GEOLOGY LAB	(E) VCT AND VCT-1 AS NEEDED	(E) RUBBER BASE	P-2, P-4	ACT-1	(E) FINISH TO REMAIN, REPLACE OR ADD VCT TILE AS NEEDED
302	PHYSICS LAB	(E) VCT	(E) RUBBER BAS	P-2, P-4	ACT-1	(E) FINISH TO REMAIN, REPLACE OR ADD VCT TILE AS NEEDED
303	ADJUNCT FACULTY OFFICES	CT-1, CT-2, CT-3, LVT	B-1	P-2, P-4	ACT-1	
304	GRAPHICS SERVICE AREA	(E) VCT	(E) RUBBER BASE	(E) PAINT	ACT-1	
305	BOTANY LAB	(E) VCT	(E) RUBBER BASE	P-2, P-4	ACT-1	
306	ANATOMY LAB	(E) VCT	(E) RUBBER BASE	P-2, P-3	ACT-1	
307	MICROBIOLOGY LAB	(E) VCT	(E) RUBBER BASE	P-2, P-3	ACT-1	
308	SCIENCE LECTURE HALL	(E) EXPOSED CONCRETE	(E) RUBBER BASE	P-2, P-4	ACT-1	
309	LOBBY	(E) VCT	(E) RUBBER BASE	P-2, P-4	ACT-1	
310	MEN RR	(E) TILE	(E) TILE	(E) TILE	GB-1	
311	WOMEN RR	(E) TILE	(E) TILE	(E) TILE	GB-1	
312	STAFF RR	T-5	B-2	T-1, T-2, T-3, T-4	GB-1	
313	STORAGE	VCT-1	B-1	P-2	GB-1	
314	MECHANICAL ROOM	(E) EXPOSED CONCRETE	NO BASE	P-2	B.O.S.	
315	LECTURE PREP	(E) EXPOSED CONCRETE	(E) RUBBER BASE	(E) PAINT	ACT-1	
317	MICROBIOLOGY PREP	(E) VCT	(E) RUBBER BASE	(E) PAINT	ACT-1	
320	JAN	(E) VCT	(E) RUBBER BASE	(E) PAINT	ACT-1	
321	ANATOMY PREP	(E) VCT	(E) RUBBER BASE	(E) PAINT	ACT-1	
322	BOTANY PREP	(E) VCT	(E) RUBBER BASE	(E) PAINT	ACT-1	
323	INSTRUCTOR PREP	(E) VCT	(E) RUBBER BASE	(E) PAINT	GB-1	
324A	STAF COPY AREA	(E) VCT	(E) RUBBER BASE	(E) PAINT	ACT-1	
324B	RECEIVING	(E) VCT	(E) RUBBER BASE	P-2	ACT-1	
325	LOCKED EXAM PICK-UP	(E) VCT	(E) RUBBER BASE	(E) PAINT	GB-1	
326	CENTRAL SUPPLY	(E) VCT, VCT-1	(E) RUBBER BASE, B-1	P-2	ACT-2	
327A	MAIL ROOM OFFICE	(E) VCT	(E) RUBBER BASE	(E) PAINT, P-2	ACT-1	
327B	MAIL PICK-UP	(E) VCT	(E) RUBBER BASE	(E) PAINT	ACT-1	
328	GRAPHIC OFFICE	(E) VCT	(E) RUBBER BASE	(E) PAINT, P-2	ACT-1	
329	GRAPHICS STORAGE	(E) VCT	(E) RUBBER BASE	(E) PAINT, P-2	ACT-1	
330	STORAGE ROOM	(E) VCT	(E) RUBBER BASE	(E) PAINT	ACT-1	
331	STORAGE ROOM	(E) VCT	(E) RUBBER BASE	(E) PAINT	ACT-1	
332	STORAGE ROOM	(E) VCT	(E) RUBBER BASE	(E) PAINT	ACT-1	
335	OFFICE	(E) VCT	(E) RUBBER BASE	P-2, P-3	ACT-1	
336	OFFICE	(E) VCT	(E) RUBBER BASE	P-2, P-3	ACT-1	
337	OFFICE	(E) VCT	(E) RUBBER BASE	P-2, P-3	ACT-1	
338	OFFICE	(E) VCT	(E) RUBBER BASE	P-2, P-3	ACT-1	
339	OFFICE	(E) VCT	(E) RUBBER BASE	P-2, P-3	ACT-1	
340	OFFICE	(E) VCT	(E) RUBBER BASE	P-2, P-3	ACT-1	
341	OFFICE	(E) VCT	(E) RUBBER BASE	P-2, P-3	ACT-1	
342	OFFICE	(E) VCT	(E) RUBBER BASE	P-2, P-3	ACT-1	
343	OFFICE	(E) VCT	(E) RUBBER BASE	P-2, P-3	ACT-1	
344	OFFICE	(E) VCT	(E) RUBBER BASE	P-2, P-3	ACT-1	
345	OFFICE	(E) VCT	(E) RUBBER BASE	P-2, P-3	ACT-1	
346	OFFICE	(E) VCT	(E) RUBBER BASE	P-2, P-3	ACT-1	
347	OFFICE	(E) VCT	(E) RUBBER BASE	P-2, P-3	ACT-1	
348	OFFICE	(E) VCT	(E) RUBBER BASE	P-2, P-3	ACT-1	
349	HALLWAY	(E) VCT	(E) RUBBER BASE	P-2	ACT-1	
350	CLOSET	(E) VCT	(E) RUBBER BASE	P-2	ACT-1	
351	CLOSET	(E) VCT	(E) RUBBER BASE	P-2	ACT-1	
353	REAR SCREEN PROJ. ROOM	(E) VCT	(E) RUBBER BASE	P-2	GB-1	



FINISH LEGEND

CT-1	CARPET TILE - FIELD
CT-2	CARPET TILE - ACCENT
CT-3	WALK-OFF MATT
LVT	LUXURY VINYL TILE

4 FINISH FLOOR PLAN - RM 303 ADJUNCTS FACULTY OFFICE
SCALE: 1/4" = 1'-0"

GENERAL FINISH NOTES

A WHERE MULTIPLE WALL FINISHES ARE CALLED OUT, REFER TO INTERIOR ELEVATIONS FOR LOCATIONS OF INDIVIDUAL FINISHES.

B WHERE MULTIPLE FLOOR FINISHES ARE CALLED OUT, REFER TO FLOOR FINISH PLANS FOR LOCATIONS OF INDIVIDUAL FINISHES.

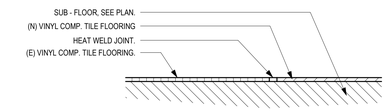
C PROVIDE FINISHES TO COMPLY WITH FLAME SPREAD & SMOKE DENSITY REQUIREMENTS OF CBC 803 and 804.

D WHERE LEFT UNMARKED, (E) WALL FINISHES ARE TO REMAIN U.O.N.

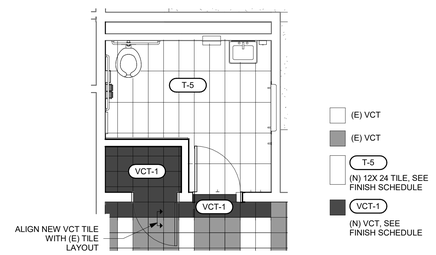
E IN ROOMS 301 & 302, DO NOT PAINT ABOVE MAP RAIL; PROTEC STENCIL PAINTING DURING CONSTRUCTION

FINISH LEGEND

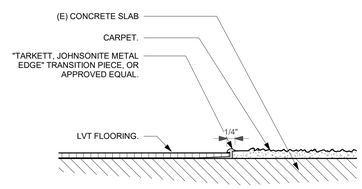
MARK	DESCRIPTION	MFR. / BRAND	COLOR / FINISH	COMMENTS
ACT-1	2'-0" X 4'-0" ACOUSTICAL CEILING TILES	USG	MILLENNIA CLIMA PLUS ILLUSION #78780	
ACT-2	2'-0" X 4'-0" ACOUSTICAL CEILING TILES, 1-HR RATED	USG	RADAR CLIMAPLUS PERFORMANCE 2425	1-HR FIRE RATED
B-1	4" RUBBER TOP SET BASE	BURKE MERCER	BLACK	
B-2	6"X 6"SANITARY TILE COVE BASE	DALTILE	ARTIC WHITE 0190 # S3619	
C-1	SOLID SURFACE	DURCON	BLACK ONYX	3/4" THICK
C-2	WOOD TOP	CUSTOM	MATCH LAB TABLE IN ROOM	
C-3	SOLID SURFACE	DURCON	BLACK ONYX	1" THICK
C-4	COMPOSITE ENGINEER STONE COUNTERTOPS	CAESARSTONE	TBD	
CT-1	CARPET TILE - FIELD TILE	TARKETT - AFTERMATH II	TBD	
CT-2	CARPET TILE - ACCENT	TARKETT - AFTERMATH II	TBD	
CT-3	WALK-OFF MATT	TARKETT - TANDUS - ABRASIVES ACTION 11	WINTER GREY	
GB-1	GYPSUM BOARD		P-1	
GR-1	GROUT	TBD	DARK GREY	
LVT	6" X36" LUXURY VINYL TILE	- JD LATITUDE ABSTRACT	TBD	
P-1	INTERIOR PAINT	SHERWIN WILLIAMS	EXTRA WHITE - SW 7006	SUSPENDED CEILING GRID
P-2	INTERIOR PAINT	SHERWIN WILLIAMS	NAVAJO WHITE - SW 6126	FIELD COLOR
P-3	INTERIOR PAINT	SHERWIN WILLIAMS	HERBAL WASH - SW 7739	ACCENT 1
P-4	INTERIOR PAINT	SHERWIN WILLIAMS	POOLHOUSE - SW 7603	ACCENT 2
PWP	SOLID REINFORCED COMPOSITE	BOBRICK	SC02 – DESERT BEIGE SIERRA SERIES	
T-1	12"X 24" PORCELAIN FLOOR TILE	DALTILE	FABRIC ART COLOR BODY PORCELAIN WITH REVEAL IMAGING	
T-2	3" x 6" CERAMIC WALL TILE	DALTILE	COLOR WHEEL CLASSIC ARTIC WHITE 0190	FIELD TILE
T-3	3" x 6" CERAMIC WALL TILE	DALTILE	COLOR WHEEL CLASSIC, SPA 0148	ACCENT 1
T-4	3" x 6" CERAMIC WALL TILE	DALTILE	COLOR WHEEL CLASSIC, GALAXY 1469	ACCENT 2
T-5	2" x 6" CERAMIC BULLNOSE TILE	DALTILE	ARTIC WHITE 0190, #A4200	
TWP	FABRIC WRAP TACKABLE WALL PANEL	TBD	TBD	
VTC-1	12" X 12" VYNIL COMPOSITE TILE	ARMSTRONG VCT	STANDARD EXCELON IMPERIAL TEXTURE COLOR 51910 CLASSIC BLACK	



1 (E) VCT TO (N) VCT TRANSITION
SCALE: 6" = 1'-0"



2 ENLARGED ACC. STAFF RR FINISH FLOOR PLAN - 312
SCALE: 1/4" = 1'-0"



3 LVT TO CARPET TRANSITION
SCALE: 6" = 1'-0"

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PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

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LICENSED ARCHITECT JOSEPH A. DISTEFANO NO. C-29380 EXP. 11.30.23 STATE OF CALIFORNIA

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET
FINISH SCHEDULE, LEGEND & DETAILS

DATE 04.12.2023
JOB # 2022012
SHEET # AD2 - A11.01

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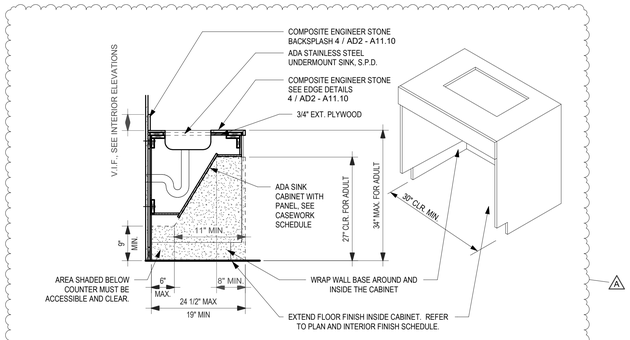
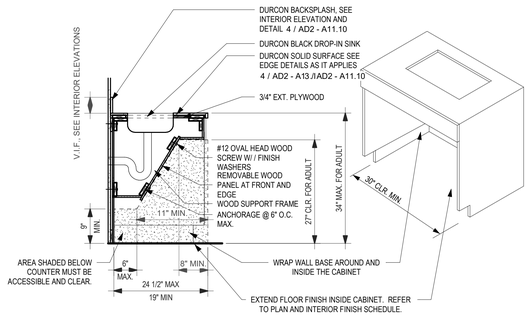


5 ACCESSIBLE CABINET BASE NO DOORS - STANDARD CASEWORK
SCALE: 3/4" = 1'-0"



6 ACCESSIBLE CABINET BASE NO DOORS - LAB CASEWORK
SCALE: 3/4" = 1'-0"

LAB CASEWORK SCHEDULE
BASE OF DESIGN KEWAUNEE LAB-CASEWORK

CABINET	CASWEWORK DESIGN SERIES	WIDTH	HEIGHT	DEPTH	FINISH	STYLE	COMMENTS
C-1	G07W342248	4'-0"	2'-10"	1'-10"	WOODLAND OAK	STYLE 1 CONVENTIONAL RADIUS LIP	
C-2	G07W342236	3'-0"	2'-10"	1'-10"	WOODLAND OAK	STYLE 1 CONVENTIONAL RADIUS LIP	
C-3	G00W362236	3'-0"	3'-0"	1'-10"	WOODLAND OAK	STYLE 1 CONVENTIONAL RADIUS LIP	PULL STYLE 8

STANDARD CASEWORK SCHEDULE

CABINET	WOODWORK INSTITUTE SERIES#	WIDTH	HEIGHT	DEPTH	FINISH	STYLE	COMMENTS
C-4	212	3'-0"	2'-10"	1'-10"	TBD	TBD	
C-5	157	3'-0"	2'-10"	1'-10"	TBD	TBD	

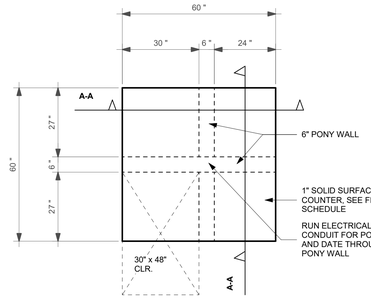
NOTE: 1. BASE CABINET HEIGHT IS TO TOP OF COUNTERTOP
2. SINK SUPPORT NEEDS TO BE PROVIDED SEPARATLY

CASEWORK GENERAL NOTES

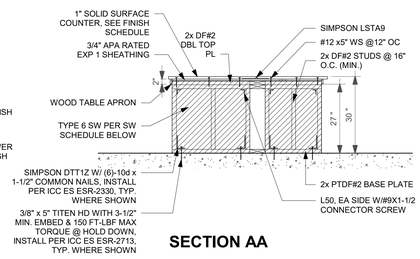
2 REFER TO INTERIOR ELEVATIONS FOR QUANTITIES, LOCATIONS, AND COUNTER EDGE DETAILS.

3 CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS PRIOR TO FABRICATION.

4 REFER TO "CABINET ANCHORAGE DETAILS (2x STUDS)" FOR TYPICAL CABINET ANCHORAGE REQUIREMENTS.



PLAN VIEW

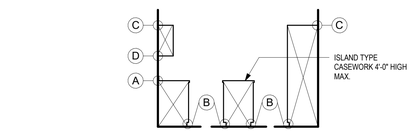


SECTION AA

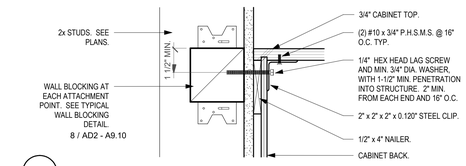
NOTE: PER CONCRETE/MASONRY ITEM 1 & WELDING ITEM 3 ON DSA 103-19, POST INSTALLED ANCHORS ARE EXEMPT AS INTERIOR NON-STRUCTURAL WALL PARTITIONS

SHEAR WALL SCHEDULE		
	TYPE 6	
SHEATING ONE FACE	PLYWOOD OR OSB SHEATING THICKNESS:	3/8"
	EDGE NAILING:	8d @ 6" O.C.
	3x MEMBERS REQUIRED AT PANEL EDGES:	NO
	3x SILL REQUIRED:	NO
	FIELD NAILING:	8d @ 12" O.C.
	SILL CONNECTION (16d COMMON NAILS):	@ 6" O.C.
	MUDSILL AB:	PER DTL. 1/A11.10
	TOP CONNECTION:	PER DTL. 1/A11.10
	ALLOWABLE SHEAR:	310

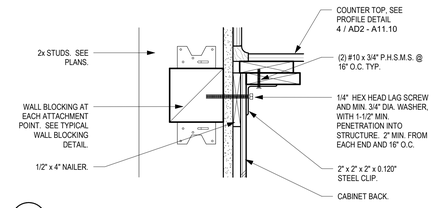
1 ANATOMY LAB TABLE DETAILS & SECTION
SCALE: 1/2" = 1'-0"



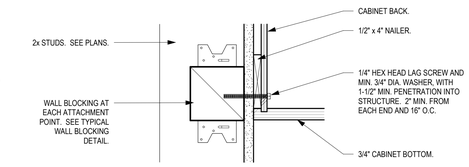
DETAIL LOCATION KEY
Scale: 3" = 1'-0"



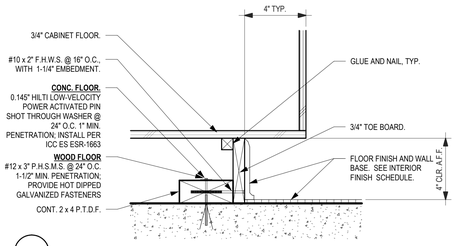
C Scale: 3" = 1'-0"



A Scale: 3" = 1'-0"



D Scale: 3" = 1'-0"

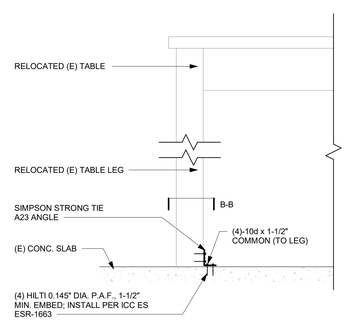


B Scale: 3" = 1'-0"

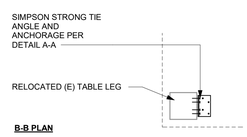
NOTE:

1 PAINT ALL ANCHORAGE HARDWARE TO MATCH THE CABINET FACE TO WHICH IT IS BEING ATTACHED, THIS INCLUDES ALL SCREW HEADS.
2 CONTRACTOR SHALL SCRIBE ALL CABINET EDGES TO WALL SURFACE EVERYWHERE CABINET COMES INTO CONTACT WITH WALL. CONTRACTOR SHALL ALSO PROVIDE A TOOLED BEAD OF CLEAR CAULK BETWEEN ALL CABINET EDGES AND WALL.
3 FASTEN CABINETS TOGETHER USING 1-1/4" F.H.W.S. THROUGH CABINET FACE FRAME, TOP AND BOTTOM.
4. PER CONCRETE/MASONRY ITEM 1 & WELDING ITEM 3 ON DSA 103-19, POST INSTALLED ANCHORS ARE EXEMPT AS INTERIOR NON-STRUCTURAL WALL PARTITION

2 CABINET ANCHORAGE DETAILS (2x STUDS)
SCALE: 3" = 1'-0"



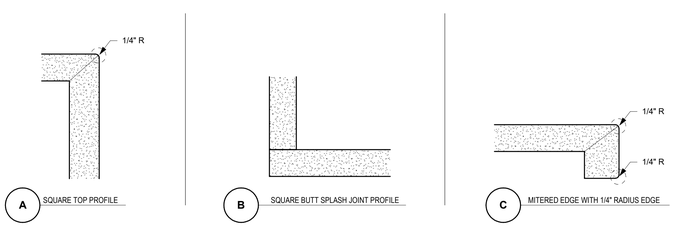
A-A ELEVATION



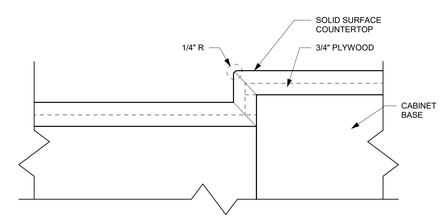
B-B PLAN

NOTE: PER CONCRETE/MASONRY ITEM 1 & WELDING ITEM 3 ON DSA 103-19, POST INSTALLED ANCHORS ARE EXEMPT AS INTERIOR NON-STRUCTURAL WALL PARTITIONS

7 ANCHORAGE @ POWERED TABLES
SCALE: 1 1/2" = 1'-0"



4 SOLID SURFACE COUNTERTOP PROFILES
SCALE: 6" = 1'-0"



3 COUNTER DETAIL @ JUNCTION
SCALE: 3" = 1'-0"

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PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

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LICENSED ARCHITECT JOSEPH A. VITALE NO. C-29382 EXP. 11-30-24 STATE OF CALIFORNIA

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET
CASEWORK SCHEDULE & DETAILS

DATE 04.12.2023
JOB # 2022012
SHEET # AD2 - A11.10

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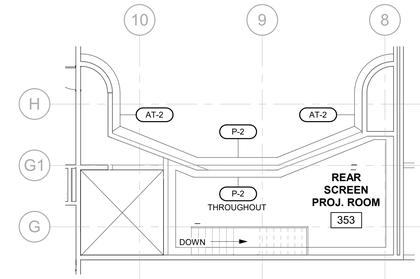
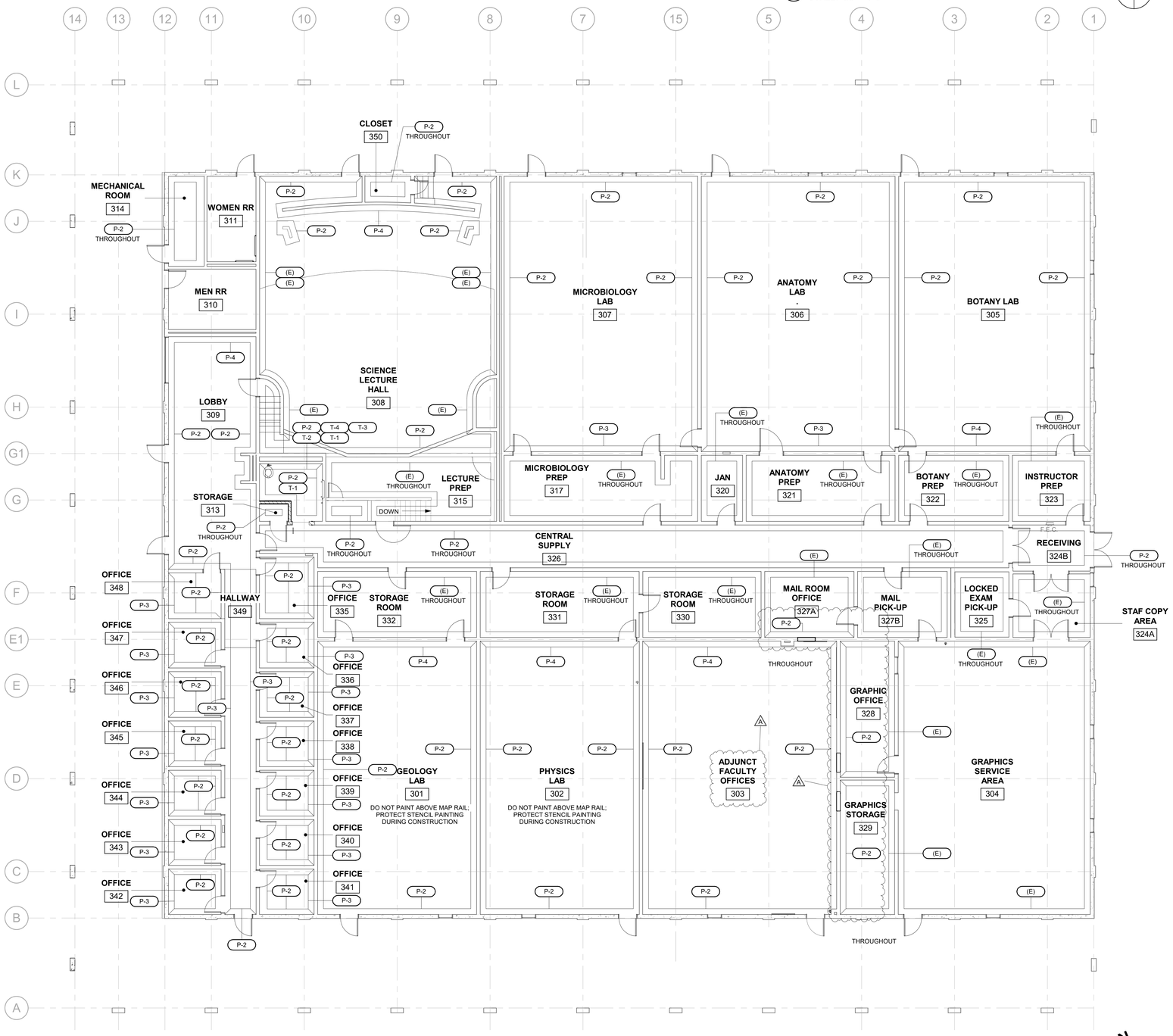


2 **PAINT PLAN - SECOND FLOOR**
SCALE: 1/8" = 1'-0"



1 **PAINT PLAN - FIRST FLOOR**
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

A WHERE MULTIPLE WALL FINISHES ARE CALLED OUT, REFER TO INTERIOR ELEVATIONS FOR LOCATIONS OF INDIVIDUAL FINISHES.

B WHERE MULTIPLE FLOOR FINISHES ARE CALLED OUT, REFER TO FLOOR FINISH PLANS FOR LOCATIONS OF INDIVIDUAL FINISHES.

C PROVIDE FINISHES TO COMPLY WITH FLAME SPREAD & SMOKE DENSITY REQUIREMENTS OF CBC 803 and 804.

D WHERE LEFT UNMARKED, (E) WALL FINISHES ARE TO REMAIN U.O.N.

E IN ROOMS 301 & 302, DO NOT PAINT ABOVE MAP RAIL; PROTEC STENCIL PAINTING DURING CONSTRUCTION

LEGEND

REFER TO FINISH LEGEND ON SHEET A11.01

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APPL #	02-120607

REVISIONS

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A	Addendum 2	04/12/23

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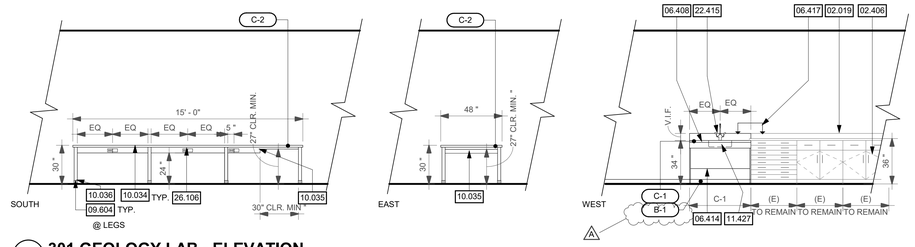
DSA SUB	10.28.2022

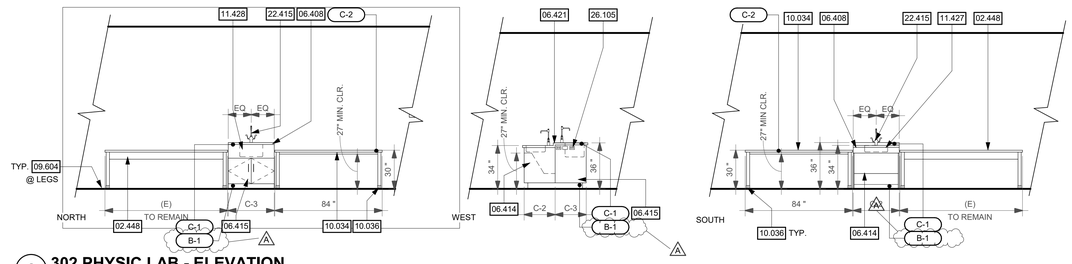
SHEET
PAINT PLAN

DATE 04.12.2023
JOB # 2022012
SHEET # AD2 - A11.11

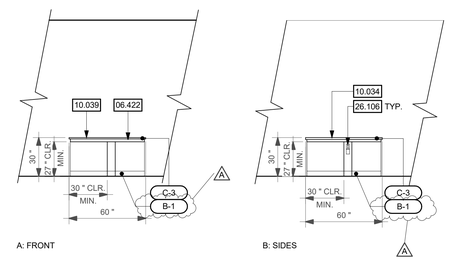
C:\Users\aedimpo\Documents\Solano CCD BLDG 300 Modernization - 2022012 _aedimpo.rvt
4/18/2023 5:21:25 PM



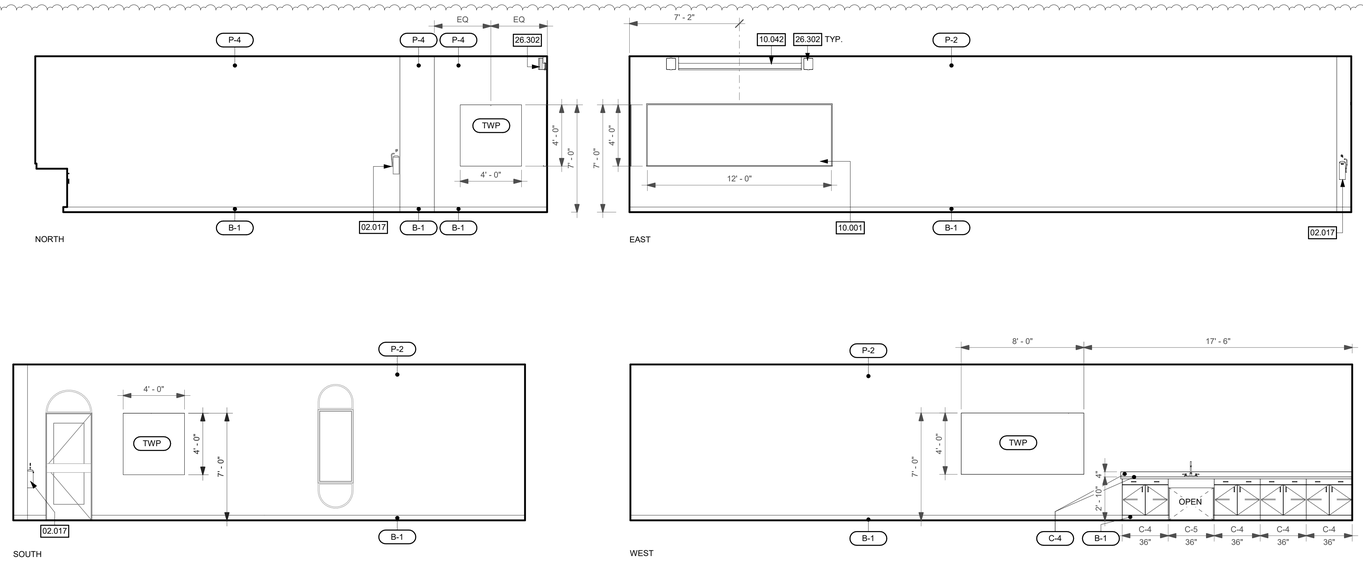
1 301 GEOLOGY LAB - ELEVATION
SCALE: 1/4" = 1'-0"



2 302 PHYSIC LAB - ELEVATION
SCALE: 1/4" = 1'-0"



3 306 ANATOMY LAB - ELEVATION
SCALE: 1/4" = 1'-0"



4 ROOM 303 - ADJUNCT FACULTY OFFICES - INTERIOR ELEVATION
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES

A FOR INTERIOR FINISHES NOT SHOWN ON ELEVATIONS REFER TO INTERIOR FINISH SCHEDULE.

B CABINET ELEVATIONS AS SHOWN IN THE INTERIOR ELEVATIONS ARE FOR REFERENCE ONLY. ACTUAL CABINET DESIGN CRITERIA AND SIZES ARE DESIGNATED IN THE CASEWORK SCHEDULE WHERE INDIVIDUAL CASEWORK DESIGN REQUIREMENTS DO NOT FIT WITHIN THE CDS NUMBERING SYSTEM CABINETS ARE DETAILED SEPARATELY AS REFERENCED IN THE CASEWORK SCHEDULE.

C SEE TYPICAL FIXTURE MOUNTING HEIGHTS DETAIL FOR MOUNTING HEIGHT OF ACCESSORIES.

D ALL EXPOSED CONDUITS AND PIPES SHALL BE PAINTED U.O.N.

E ALL ITEMS REFERENCED IN KEYNOTES ARE TO BE PROVIDED NEW, U.O.N.

F REFER TO SHEET A11.10 FOR CABINET ANCHORAGE DETAILS.

G AT ROOMS 301 & 302, DO NOT PAINT ABOVE MAP RAIL; PROTECT STENCIL DURING CONSTRUCTION

ENLARGED PLAN KEYNOTES

02.017	(E) WALL MOUNTED FIRE EXTINGUISHER
02.019	(E) SOLID SURFACE COUNTERTOP AND BACKSPLASH
02.406	(E) CASEWORK TO REMAIN, TYP.
02.448	(E) BUILT-IN LAB TABLE TO REMAIN
06.408	SOLID SURFACE COUNTERTOP, EDGE DETAIL SEE 4 / AD2 - A11.10
06.414	ACCESSIBLE SINK CABINET,S.P.D. , SEE CASEWORK SCHEDULE AND DETAIL 6 / AD2 - A11.10
06.415	SINK CABINET W/ INTEGRATED POWER AND DATA. S.E.D., S.P.D. DRAWINGS AND DETAIL 6 / AD2 - A1
06.417	SOLID SURFACE BACKSPLASH, MATCH ADJACENT (E) BACKSPLASH HEIGHT
06.421	SOLID SURFACE DUAL HEIGHT COUNTERTOP CONNECTION DETAIL 3 / AD2 - A11.10
06.422	LAB TABLE DETAIL AND ANCHORAGE SEE 1 / AD2 - A11.10
09.604	4 INCH THERMOPLASTIC-RUBBER BASE
10.001	4' X 12' MARKERBOARD
10.034	ACCESSIBLE BUILT-IN WOOD LAB TABLE. MATCH (E) TABLES FINISH.
10.035	PROVIDE SOLID PANEL TO HIDE ELECTRICAL COMPONENTS.
10.036	TABLE LEG FLOOR MOUNTING BRACKET, MATCH (E) LAB TABLE BRACKET AND SECURE TO THE FLOOR WITH EXPENSION ANCHORS 7 / AD2 - A11.10
10.039	ACCESSIBLE BUILT-IN LAB TABLE WITH SOLID SURFACE COUNTERTOP, SEE FINISH TAG AND SOLID SURFACE EDGE DETAIL 4/A-11.10
10.042	REINSTALL PROJECTOR SCREEN, SEE ANCHORAGE DETAIL 18 / AD2 - A9.10
11.427	DROP-IN ADA SOLID SURFACE SINK, DURCON, MODEL A26 5" DEEP, BLACK ONYX
11.428	DROP-IN SOLID SURFACE SINK, DURCON, MODEL A26 11" DEEP, BLACK ONYX
22.415	ADA ACCESSIBLE LABORATORY FAUCET, S.P.D.
26.105	POWER OUTLET AND DATA PORT RECEPTACLE MOUNTED ON BOTH SIDES OF CABINETS, S.E.D.
26.106	POWER OUTLET AND DATA PORT RECEPTACLE MOUNTED ON BOTH SIDES OF THE TABLE, S.E.D.
26.302	REINSTALL (E) WALL MOUNTED SPEAKER, S.E.D.

FINISH LEGEND

B-1	4" RUBBER BASE
C-1	DURCON SOLID SURFACE 3/4"
C-2	WOOD TOP
C-3	DURCON SOLID SURFACE 1"
C-4	COMPOSITE ENGINEER STONE
LVT	LUXURY VINYL TILE
P-2	INTERIOR PAINT FIELD COLOR
P-4	INTERIOR PAINT ACCENT
TWP	TACKABLE WALL PANEL

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PROJECT

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DSA SUB	10.28.2022
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SHEET

INTERIOR ELEVATIONS

DATE 04.12.2023

JOB # 2022012

SHEET # AD2 - A12.01

4/18/2023 5:21:28 PM

SCHOOL EQUIPMENT ANCHORAGE

M/E/P COMPONENT ANCHORAGE NOTE:

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON–THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC SECTION 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7–16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTION EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.

B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7–16 SECTION 13.3 AS DEFINED IN ASCE 7–16 SECTION 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP ☐ MD ☒ PP ☐ E ☐ — OPTION 1: DETAIL ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP ☐ MD ☐ PP ☐ E ☐ — OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE–APPROVAL (OPM #) # _____.

CONSTRUCTION PHOTOGRAPHIC RECORDS

THE CONTRACTOR SHALL PROVIDE PRECONSTRUCTION DIGITAL PHOTOGRAPHS AND VIDEO RECORDINGS PRIOR TO COMMENCEMENT OF WORK ON THE SITE. BEFORE CONSTRUCTION MAY START, CONTRACTOR SHALL DOCUMENT ANY EXISTING CONDITIONS THAT ARE NOT COVERED BY THE CONTRACT DOCUMENTS (DAMAGED CONCRETE, WALLS, LANDSCAPE, ETC.). FAILURE TO DOCUMENT EXISTING DAMAGE WILL RESULT IN CONTRACTOR REPAIRS TO SURFACE TO MATCH ADJACENT AFTER CONSTRUCTION ACTIVITIES. ADDITIONAL PRECONSTRUCTION PHOTOGRAPHS/VIDEOS SHALL BE TAKEN AT LOCATIONS TO BE DESIGNATED BY THE OWNER'S REPRESENTATIVE.

CONTRACTOR SHALL MAKE A VIDEO RECORDING OF ALL PROPOSED ROUTINGS FOR INFRASTRUCTURE WORK, NOTING CONDITIONS OF EXISTING SURFACES AND ADJACENT IMPROVEMENTS. ONE COPY OF COMPLETE VIDEO SHALL BE TRANSMITTED TO THE OWNER'S REPRESENTATIVE.

CONSTRUCTION PHOTOGRAPHS

THE CONTRACTOR SHALL PROVIDE CONSTRUCTION PHOTOGRAPHS SHOWING THE PROGRESS OF THE WORK AND AS MAY BE DIRECTED BY THE OWNER'S REPRESENTATIVE. PHOTOGRAPHS/VIDEOS SHALL BE FORMATTED, IDENTIFIED, AND DELIVERED AS DESCRIBED ABOVE FOR DIGITAL PHOTOS AND VIDEOS. STARTING ONE MONTH AFTER THE DATE OF THE PRECONSTRUCTION PHOTOGRAPHS AND CONTINUING AS LONG AS THE WORK IS IN PROGRESS, APPROXIMATELY 40 MONTHLY PHOTOGRAPHS SHALL BE TAKEN, CATALOGED AND CROSS REFERENCED TO DRAWINGS/PLANS.

ANY WORK TO BE CONCEALED (BURIED, BEHIND WALLS, ABOVE CEILING, BELOW SLAB, ETC.) SHALL BE PHOTO DOCUMENTED AFTER ANY TESTING AND INSPECTION AND PRIOR TO CONCEALING TO CLEARLY INDICATE THE WORK. DOCUMENT ON PLANS THE LOCATION AND ORIENTATION FOR EACH PHOTO DOCUMENTING CONCEALED WORK.

FOR FINAL COMPLETION, DOCUMENT ALL PUNCH LIST ITEM COMPLETION BY PHOTOGRAPH OR VIDEO.

DELIVER CONSTRUCTION PHOTOGRAPHS AND VIDEOS WITHIN 10 DAYS OF CREATION. ALL PHOTOS AND VIDEOS SHALL BE OF SUFFICIENT QUALITY TO CLEARLY DEPICT WORK.

APPLICABLE CODES

UNLESS OTHERWISE INDICATED OR SPECIFIED, PERFORM THE WORK IN CONFORMANCE WITH THE LATEST EDITIONS OF ALL APPLICABLE REGULATORY REQUIREMENTS, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

1. CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24): 2022
2. CALIFORNIA BUILDING CODE (PART 2, TITLE 24): 2018 IBC WITH 2019 CA AMENDMENTS
3. CALIFORNIA ELECTRICAL CODE (PART 3, TITLE 24): 2017 NEC WITH 2019 CA AMENDMENTS
4. CALIFORNIA MECHANICAL CODE (PART 4, TITLE 24): 2018 UMC WITH 2019 CA AMENDMENTS
5. CALIFORNIA PLUMBING CODE (PART 5, TITLE 24) 2018 UPC WITH 2019 CA AMENDMENTS
6. CALIFORNIA ENERGY CODE (PART 6, TITLE 24): 2019
7. CALIFORNIA HISTORICAL BUILDING CODE, (PART 8, TITLE 24): 2019
8. CALIFORNIA FIRE CODE (PART 9, TITLE 24): 2018 IFC WITH 2019 CA AMENDMENTS
9. CALIFORNIA EXISTING BUILDING CODE (PART 10, TITLE 24): 2019 (2018 INTERNATIONAL EXISTING BUILDING CODE WITH 2019 CA AMENDMENTS)
10. CALIFORNIA GREEN BUILDING STANDARDS CODE OR CAL GREEN (PART 11, TITLE 24): 2019
11. CALIFORNIA REFERENCED STANDARDS CODE (PART 12, TITLE 24): 2019
12. PUBLIC SAFETY (CCR TITLE 19), STATE FIRE MARSHAL: CURRENT REVISION
13. NFPA 72, NATIONAL FIRE ALARM CODE, 2016 EDITION

SUMMARY OF WORK

1. INSTALL A NEW BUILDING CONTROLLER AND CONNECT TO CAMPUS BMS.
2. REPLACE REHEAT CONTROL VALVES, ACTUATORS, AND THERMOSTATS. CONNECT REHEAT CONTROL TO BMS. A
3. CONNECT AHU SUPPLY AIR, HEATING, AND COOLING CONTROL TO BMS.
4. CONNECT NON–LAB BATHROOM AND GENERAL EXHAUST FANS TO BMS.
5. LAB EF'S AND LAB MUA'S REMAIN NOT IN USE AND ABANDONED IN PLACE.
6. INSTALL NEW VARIABLE FREQUENCY DRIVES CONNECTED TO BMS TO CONTROL THE HHW AND CHW PUMPS.
7. INSTALL BTU METERS FOR CHW AND HHW.
8. CONNECT MAILROOM HVAC TO BMS.

PIPING

	ARROW INDICATES DIRECTION OF FLOW
	EXISTING PIPING (ABOVE GRADE OR FLOOR)
	EXISTING PIPING (BELOW GRADE OR FLOOR)
	NEW PIPING (ABOVE GRADE OR FLOOR)
	NEW PIPING (BELOW GRADE OR FLOOR)
	PIPE TO BE REMOVED (ABOVE GRADE OR FLOOR)
	PIPE TO BE REMOVED (BELOW GRADE OR FLOOR)

AIR CONDITIONING

CW(R)(S)	CONDENSER WATER (RETURN)(SUPPLY)
CHW(R)(S)	CHILLED WATER (RETURN)(SUPPLY)
D	DRAIN
HC(R)(S)	HOT/CHILLED WATER (RETURN)(SUPPLY)
PCHW(R)(S)	PRIMARY CHILLED WATER (RETURN)(SUPPLY)
SCHW(R)(S)	SECONDARY CHILLED WATER (RETURN)(SUPPLY)
TCHW(R)(S)	TERTIARY CHILLED WATER (RETURN)(SUPPLY)

CONTROLS

AI	ANALOG INPUT
AO	ANALOG OUTPUT
BT	BYPASS TIMER
C	CONTROLLER
DP	DIFFERENTIAL PRESSURE TRANSMITTER
DI	DIGITAL (ON/OFF) INPUT
DO	DIGITAL (ON/OFF) OUTPUT
FE	FLOW ELEMENT
FT	FLOW TRANSMITTER
FS	FLOW SWITCH
FM	FLOWMETER
OPM–1	FLOWMETER, ORIFICE
H	HUMIDITY CONTROLLER
H	HUMIDITY TRANSMITTER
M	MOTOR/ACTUATOR
MS	MOTOR STARTER
PI	PRESSURE INDICATOR
PID	PID CONTROL LOOP (REPRESENTATION)
P/S	PRESSURE SWITCH
PT	PRESSURE TRANSMITTER
RHC	REHEAT COIL
R	RELAY COIL
S	SENSOR
SP	STATIC PRESSURE
T	TEMPERATURE SENSOR
TE	TEMPERATURE ELEMENT
TI	TEMPERATURE INDICATOR
TT	TEMPERATURE TRANSMITTER
T	THERMOSTAT OR TEMPERATURE SENSOR (DDC) (36" TO 48" AFF.)
H/C	HEATING COIL
C/C	COOLING COIL
D/X	DIRECT EXPANSION COIL
G/X	GAS FIRED HEAT EXCHANGER
VFD	VARIABLE FREQUENCY DRIVE
	SA
	RA
	EA

MECHANICAL DRAWING INDEX

SHT. NO.	DESCRIPTION
AD2 – M0.00	MECHANICAL GENERAL NOTES, SYMBOLS & ABBREVIATIONS
AD2 – M0.01	MECHANICAL TITLE 24
AD2 – MD2.01	MECHANICAL FLOOR PLAN LEVEL 1 – DEMO
AD2 – M2.01	MECHANICAL FLOOR PLAN LEVEL 1 – NEW
AD2 – M2.02	MECHANICAL ROOF PLAN – NEW
AD2 – M4.01	MECHANICAL ENLARGED FLOOR PLANS
AD2 – M5.01	MECHANICAL DETAILS
AD2 – M6.01	MECHANICAL SCHEDULES
AD2 – MI1.01	MECHANICAL CONTROLS
MI1.02	MECHANICAL CONTROLS
MI1.03	MECHANICAL CONTROLS

A

GENERAL

	EXTENT OF DEMOLITION
	NEW TO EXISTING CONNECTION
1	REVISION NUMBER
1	WORK ITEM (ARCHITECTURAL)
1	WORK ITEM (MECHANICAL)
1	WORK ITEM (ELECTRICAL)
1	WORK ITEM (TELECOMMUNICATION)
1	WORK ITEM (PLUMBING)
1	WORK ITEM (STRUCTURE)
1 / M–1	DETAIL DESIGNATION — DETAIL NUMBER / DRAWING NUMBER (IF BLANK, SAME SHEET)
CT 1	EQUIPMENT DESIGNATION — EQUIPMENT TYPE / EQUIPMENT NUMBER
1 / M– / 1	SECTION DESIGNATION — SECTION NUMBER / DRAWING NUMBER
	TO BE DEMOLISHED
	TO BE DEMOLISHED
	<N> EQUIPMENT
	RELOCATED EQUIPMENT

VALVES

	BALL
	BUTTERFLY
	GATE
	GATE, ANGLE
	GLOBE
	GLOBE, ANGLE
	THREE WAY
	CONTROL
	IN PIT

VALVES, SPECIAL DUTY

	CHECK, SWING GATE
	CIRCUIT SETTER
	NEEDLE
PRV–1	PRESSURE REDUCING (NUMBER & SPECIFY)
	PRESSURE REGULATOR
	RELIEF (R) OR SAFETY (S)
SMV	SEISMIC VALVE
MUA	MAKE UP WATER ASSEMBLY
	BACK PRESSURE
	PLUG VALVE
	TRIPLE DUTY VALVE (STOP CHECK & BALANCE W/PRESSURE TAPS)
BFP	REDUCED PRESSURE BACKFLOW PREVENTER
	FLOW CONTROL

PIPING SPECIALTIES

AAV	AUTOMATIC AIR VENT
MAV	MANUAL AIR VENT
S	AIR SEPARATOR
	ALIGNMENT GUIDE
	ANCHOR
BFP	BACK FLOW PREVENTER
	BALL JOINT
	DIRT POCKET
EJ–1	EXPANSION JOINT
H	EXPANSION LOOP
	FLEXIBLE CONNECTOR
	FILTER DRYER
	FLOWMETER
	HOSE CONNECTOR
HB	HOSE BIBB
M	METER
POT FEEDER	POT FEEDER
PI	PRESSURE GAUGE AND COCK
2 / 1	PUMP
	REDUCER
	STRAINER
	STRAINER, W/BLOW OFF
	TEST PORT (PETE'S PLUG)
TI 2 / 1	THERMOMETER
	THERMOMETER, WELL
ST	STEAM TRAP
	SUCTION DIFFUSER
	TRANSVERSE BRACING
	FLEXIBLE CONNECTION

ABBREVIATIONS

@	AT
AAV	AUTOMATIC AIR VENT
AC	AIR CONDITIONING UNIT DESIGNATION
ACC	AIR COOLED CONDENSER
ACM	ASBESTOS CONTAINING MATERIAL
ACP	ASBESTOS CEMENT PIPE
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AH	AIR HANDLER
AHU	AIR HANDLING UNIT
AHUC	AIR HANDLING UNIT CONTROLLER
AI	ANALOG INPUT
ALM	ALARM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AO	ANALOG OUTPUT
APD	AIR PRESSURE DROP (IN.W.G.)
ARCH	ARCHITECTURAL
AS	AIR SEPARATOR
ASJ	ALL SERVICE JACKET
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
B	BOILER
BAS	BUILDING AUTOMATION SYSTEM
BAV	BALANCING VALVE
BDD	BACKDRAFT DAMPERS
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BI	BINARY
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BUR	BUILT–UP ROOFING
BV	BALL VALVE
℄	CENTERLINE
CA	COMPRESSED AIR
CC, C/C	COOLING COIL
CD	CONDENSATE DRAIN
CFF	CAP FOR FUTURE
CFM or ₵	CUBIC FEET PER MINUTE
CFT	CHEMICAL FEED TANK
CHCP	CHILLER CONTROL PANEL
CHW(R)(S)(T)	CHILLED WATER (RETURN)(SUPPLY)(TEMPERATURE)
C.L.	CHAIN LINK
CLG	CEILING
CLR	CENTERLINE RADIUS
CO	CLEAN–OUT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECT OR CONNECTION
CONT	CONTINUATION
CONTR.	CONTRACTOR
CP	CONTROL PANEL
CR	CONDENSATE RETURN
CRAC	COMPUTER ROOM AIR CONDITIONER
CT	COOLING TOWER
CTL	CONTROL
CU	COPPER
CV	CONTROL VALVE
CW	CITY WATER
CWP	CONDENSER WATER PUMP
CW(R)(S)(T)	CONDENSER WATER (RETURN)(SUPPLY) (TEMPERATURE)
D	DRAIN
DA	DEAERATOR
DB	DRY BULB
DCW	DOMESTIC CITY WATER
DDC	DIRECT DIGITAL CONTROL
DHW(R)	DOMESTIC HOT WATER (RETURN)
DI	DISCRETE INPUT
DIA	DIAMETER
DISC	DISCONNECT
DN	DOWN
DO	DISCRETE OUTPUT
DP	DIFFERENTIAL PRESSURE
DPS	DIFFERENTIAL PRESSURE SWITCH
DPT	DIFFERENTIAL PRESSURE TRANSDUCER
DSD	DUCT SMOKE DETECTOR
DWDI	DOUBLE WIDTH, DOUBLE INLET
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
DX	DIRECT EXPANSION
<E>	EXISTING
EA(T)	EXHAUST AIR (TEMPERATURE)
EAD	EXHAUST AIR DUCT
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EJ	EXPANSION JOINT
EL	EXPANSION LOOP
ELEV	ELEVATION
ELEC	ELECTRICAL
EMCS	ENERGY MANAGEMENT & CONTROL SYSTEM
EMS	ENERGY MANAGEMENT SYSTEM
EOD	EXTENT OF DEMOLITION
E/P	ELECTRO/PNEUMATIC TRANSDUCER
EQ	EQUAL
EQUIP.	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE (IN.W.G.)
ET	EXPANSION TANK
EWS	EMERGENCY EYEWASH AND SHOWER
EWT	ENTERING WATER TEMPERATURE
<F>	FUTURE
F	FAHRENHEIT
FA	FACE AREA
FAF	FORCED AIR FURNACE
FC	FLEXIBLE CONNECTION
FCO	FLOOR CLEAN OUT
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FDC	FIRE DEPARTMENTCONNECTION
FDD	FLUE DISCHARGE DEFLECTOR
FHC	FIRE HOSE CABINET
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FLR	FLOOR
FM	FLOW METER
FO(R)(S)	FUEL OIL (RETURN)(SUPPLY)
FOV	FUEL OIL VENT
FPF	FINS PER FOOT
FRP	FIBER REINFORCED POLYMER
FS	FLOW SWITCH
FSD	COMBINATION FIRE AND SMOKE DAMPER
FT	FLOW TRANSMITTER or FEET
G	GAS
GA	GAUGE
GAL	GALLONS
GALV	GALVANIZED
GF	GAS FURNACE
GPM	GALLONS PER MINUTE
GSM	GALVANIZED SHEET METAL
GV	GATE VALVE
H	HUMIDIFIER
HB	HOSE BIBB
HC	HEATING COIL
HDR	HEADER
HGR	HANGER
HHW(R)(S)(T)(P)	HEATING HOT WATER (RETURN)(SUPPLY)(PUMP) (TEMPERATURE)
HP	HORSE POWER
HPCR	HIGH PRESSURE CONDENSATE RETURN
HPS	HIGH PRESSURE STEAM
HT	HEIGHT
HVAC	HEATING VENTILATING AND AIR CONDITIONING
HWP	HOT WATER PUMP
HX	HEAT EXCHANGER
HZ	HERTZ; CYCLES PER SECOND
IA	INSTRUMENT AIR
ICW	INDUSTRIAL COLD WATER
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN.	INCH
IN.W.G.	INCHES WATER GAGE (PRESSURE)
IRL	IRRIGATION LINE
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LPS	LOW PRESSURE STEAM
LWCO	LOW WATER CUT OFF
LWT	LEAVING WATER TEMPERATURE
MA(T)	MIXED AIR (TEMPERATURE)
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	1,000 BTU PER HOUR
MCC	MOTOR CONTROL CENTER
MD	MANUAL VOLUME DAMPER
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MMBTUH	MILLIONS BTU PER HOUR
MOCP	MAXIMUM OVER CURRENT PROTECTION
MOT	MOTORIZED
MPG	MEDIUM PRESSURE GAS
MR	MECHANICAL ROOM
MT, MTD, MTG	MOUNT, MOUNTED, MOUNTING
MU	MAKE–UP
<N>	NEW
N.C.	NORMALLY CLOSED
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NOX	NITROGEN OXIDE
N.O.	NORMALLY OPEN
NPSH(R)	NET POSITIVE SUCTION HEAD (REQUIRED)
N.T.S.	NOT TO SCALE
OA(G)	OUTSIDE AIR (GRILLE)
OA(T)	OUTSIDE AIR (TEMPERATURE)
OAD	OUTSIDE AIR DAMPER
OAI	OUTSIDE AIR INTAKE
OBD	OPPOSED BLADE DAMPER
O.C.	ON CENTER
OD	OUTSIDE DIMENSION or OUTSIDE DIAMETER
OS&Y	OUTSIDE STEM & YOKE GATE VALVE
OV	OUTLET VELOCITY
OX	OXYGEN
OWS	OPERATOR'S WORK STATION
PL	PLATE
P	PUMP
PCHW(R)(S)(T)	PRIMARY CHW (RETURN)(SUPPLY)(TEMPERATURE)
PCHWP	PRIMARY CHW PUMP
PCR	PUMPED CONDENSATE RETURN
PD	PRESSURE DROP
PE	PNEUMATIC TO ELECTRIC RELAY
PG	PIPE GUIDE
PHW(R)(S)	PRIMARY HOT WATER (RETURN)(SUPPLY)
P&ID	PROCESS & INSTRUMENTATION DIAGRAM
PIV	POST INDICATING VALVE
PLY or PLYWD	PLYWOOD
PM	POWER METER
POC	POINT OF CONNECTION
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REDUCING VALVE
PS	PRESSURE SWITCH
PSI(G)	POUNDS PER SQUARE INCH (GAUGE)
PS–N	PIPE SUPPORT DESIGNATION
PTDF	PRESSURE TREATED DOUGLAS FIR
PVC	POLYVINYL CHLORIDE
R	RELAY
<RE>	REMOVE EXISTING
<RR>	REMOVE/RELOCATE
<RRN>	REMOVE & REPLACE WITH <N>
RA	RETURN AIR
RAD	RETURN AIR DUCT
RAG	RETURN AIR GRILLE
RA(T)	RETURN AIR (TEMPERATURE)
RD	ROOF DRAIN
REQ'D	REQUIRED
RF	RETURN AIR FAN
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RIM	RIM ELEVATION
RIP	RETIRED–IN–PLACE
RLA	RATED LOAD AMPS
RO	REVERSE OSMOSIS
RPM	REVOLUTIONS PER MINUTE
RV	RELIEF VALVE
RW	RECLAIMED WATER
RWL	RAIN WATER LEADER
SAD	SUPPLY AIR DUCT
S.A.D.	SEE ARCHITECTURAL DRAWINGS
SAG	SUPPLY AIR GRILLE
SA(T)	SUPPLY AIR (TEMPERATURE)
SCBA	SELF–CONTAINED BREATHING APPARATUS
S.C.D.	SEE CIVIL DRAWINGS
SCHW(R)(S)(T)	SECONDARY CHW (RETURN)(SUPPLY)(TEMPERATURE)
SCHWP	SECONDARY CHW PUMP
SD	STORM DRAIN
SDCO	STORM DRAIN CLEAN–OUT
S.E.D.	SEE ELECTRICAL DRAWINGS
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SENS	SENSIBLE
SF	SUPPLY FAN
SHHW(R)(S)(T)	SECONDARY HEATING HOT WATER (RETURN)(SUPPLY) (TEMPERATURE)
SIM.	SIMILAR
S.L.D.	SEE LANDSCAPE DRAWINGS
SM	SHEET METAL
SMD	SMOKE DAMPER
SOVL	SOLENOID VALVE
SP	STATIC PRESSURE
SPD	SPEED
S.P.D.	SEE PLUMBING DRAWINGS
SPECS	SPECIFICATIONS
SRV	SAFETY RELIEF VALVE
SS	SANITARY SEWER
S/S	START/STOP
S.S.D.	SEE STRUCTURAL DRAWINGS
SST	STAINLESS STEEL
ST	SOUND TRAP
STD	STANDARD
STM	STEAM
STRUCT	STRUCTURAL
STS	STATUS
SW	SWITCH
SXR	SQUARE TO ROUND TRANSITION
T	THERMOSTAT OR TEMPERATURE SENSOR (DDC)
TBA	TO BE ABANDONED
TBR	TO BE REMOVED
TCHW(R)(S)(T)	TERTIARY CHW (RETURN)(SUPPLY)(TEMPERATURE)
TCHWP	TERTIARY CHW PUMP
TCP	TEMPERATURE CONTROL PANEL
TDH	TOTAL DYNAMIC HEAD
TDV	TRIPLE DUTY VALVE
TEMP	TEMPERATURE
TG	TRANSFER AIR GRILLE
T&G	TONGUE & GROOVE
TH	THERMOMETER
TI	TEMPERATURE INDICATOR
TOD	TOP OF DUCT
TP	TEST PLUG (PETE'S PLUG)
TR	BACNET TRANSLATOR POINTS
TRANS	TRANSITION
TS	TEMPERATURE SENSOR
TSP	TOTAL STATIC PRESSURE (IN.W.G.)
TUC	TERMINAL UNIT CONTROLLER
TYP	TYPICAL
UH	UNIT HEATER
U.O.N.	UNLESS OTHERWISE NOTED
V OR VT	VENT
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VB	VACCUM BREAKER
VFD	VARIABLE FREQUENCY DRIVE
VSD	VARIABLE SPEED DRIVE
VI	VIBRATION ISOLATOR
V.I.F.	VERIFY IN FIELD
VR	VENT RISER
VTR	VENT THROUGH ROOF
W	WASTE
W/	WITH
WB	WET BULB
WC	WATER COLUMN
WP	WEATHER PROOF
WPD	WATER PRESSURE DROP (FT WATER)
WT	WEIGHT
XFMR	TRANSFORMER
XMTR	TRANSMITTER

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PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

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STAMP

REGISTERED PROFESSIONAL ENGINEER — JAMES SANDERSON — M36408 — MECHANICAL — STATE OF CALIFORNIA

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET

MECHANICAL GENERAL NOTES, SYMBOLS & ABBREVIATIONS

DATE 04.12.2023

JOB # 2022012 (SOBE 2201690)

SHEET #

AD2 - M0.00

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			**NRCC-MCH-E**
This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.4, or 141.0(b)2 for alterations.			
Project Name:	Solano CCD Bldg 300 Modernization	**Report Page:**	**(Page 1 of 6)**
Project Address:		**Date Prepared:**	2023-04-03T12:35:31-04:00

A. GENERAL INFORMATION

01	Project Location (city)	Solano	04 Total Conditioned Floor Area	1600
02	Climate Zone	12	05 Total Unconditioned Floor Area	0
03	Occupancy Types Within Project:		06 # of Stories (Habitable Above Grade)	1

- Office

B. PROJECT SCOPE

This table includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.4, 170.2(b) or 141.0(b)2 and 180.2(b)2 for alterations.

01	02	03
Air System(s)	Wet System Components	Dry System Components
☒ Heating Air System	☐ Water Economizer	☐ Air Economizer
☒ Cooling Air System	☐ Pumps	☐ Electric Resistance Heat
Mechanical Controls	☐ System Piping	☐ Fan Systems
☐ Mechanical Controls (existing to remain, altered or new)	☐ Cooling Towers	☐ Ductwork (existing to remain, altered or new)
	☐ Chillers	☐ Ventilation
	☐ Boilers	☐ Zonal Systems/ Terminal Boxes

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			**NRCC-MCH-E**
Project Name:	Solano CCD Bldg 300 Modernization	**Report Page:**	**(Page 2 of 6)**
		Date Prepared:	2023-04-03T12:35:31-04:00

C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D., or the table indicated as not compliant for guidance.

01		02		03		04		05		06		07		08	09
System Summary 110.1, 110.2, 140.4, 170.2(c)	AND	Pumps 140.4(k), 170.2(c)4I	AND	Fans/ Economizers 140.4(c), 140.4(e), 170.2(c)	AND	System Controls 110.2, 120.2, 140.4(f), 170.2(c)	AND	Ventilation 120.1, 160.2	AND	Terminal Box Controls 140.4(d), 170.2(c)4B	AND	Distribution 120.3, 140.4(l), 160.2, 160.3	AND	Cooling Towers 110.2(e)2	Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)	
Yes	AND		AND		AND	Yes	AND		AND		AND		AND		COMPLIES
Mandatory Measures Compliance (See Table Q for Details)														COMPLIES	

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Space Conditioning System Information

01	02	03	04	05	06
System Name	Quantity	System Serving	System Status	Space Type	Utilizing Recovered Heat
HP-2		Multi-zone			☐

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			**NRCC-MCH-E**
Project Name:	Solano CCD Bldg 300 Modernization	**Report Page:**	**(Page 3 of 6)**
		Date Prepared:	2023-04-03T12:35:31-04:00

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters and DOAS systems)

01	02	03	04	05	06	07	08	09	10	11
				Equipment Sizing per Mechanical Schedule (kBtu/h) 140.4(a&b), 170.2(c)1 & 170.2(c)2						
				Heating Output[2,3]			Cooling Output[2,3]		Load Calculations[3,4]	
Name or Item Tag	Equipment Category per Tables 110.2, 140.4(a)2 and 170.2(c)3aii	Equipment Type per Tables 110.2 and Title 20	Smallest Size Available[1] 140.4(a) and 170.2(c)1	Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)
HP-2	Variable Refrigerant Flow	VRF heat pump, air cooled	Yes	19	66	0	45	60	19	45

[1]*FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per 140.4(a) and 170.2(c)1. Healthcare facilities are excepted.*
[2]*It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.*
[3] *If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.*
[4] *Authority Having Jurisdiction may ask for load calculations used for compliance per 140.4(b) and 170.2(c).*

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)

01	02	03	04	05	06	07	08	09
		Heating Mode				Cooling Mode		
Name or Item Tag	Size Category (Btu/h)	Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
HP-2	<65,000	47 °Fdb/ 43 °Fwb OSA	HSPF	7.7	12	SEER	13	20

G. PUMPS

This section does not apply to this project.

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			**NRCC-MCH-E**
Project Name:	Solano CCD Bldg 300 Modernization	**Report Page:**	**(Page 4 of 6)**
		Date Prepared:	2023-04-03T12:35:31-04:00

H. FAN SYSTEMS & AIR ECONOMIZERS

This section does not apply to this project.

I. SYSTEM CONTROLS

This table is used to demonstrate compliance with mandatory controls in 110.2 and 120.2 and prescriptive controls in 140.4(f) and (n), 170.2(c)4D 170.2(c)4L or requirements in 141.0(b)2E 180.2(b)2 for altered space conditioning systems.

01	02	03	04	05	06	07	08	09
System Name	System Zoning	Conditioned Floor Area Being Served (ft^2)	Thermostats 110.2(b) & (c)[1], 120.2(a) 160.3(a)2A or 141.0(b)2E & 180.2(b)2	Shut-Off Controls 120.2(e) & 160.3(a)2D	Isolation Zone Controls 120.2(g) & 160.3(a)2F	Demand Response 110.12 120.2(b) & 160.3(a)2B	Supply Air Temp. Reset 140.4(f) & 170.2(c)4D	Window Interlocks per 140.4(n) & 170.2(c)4D
Intelliweb	Multi-zone	<= 25,000 ft^2	EMCS	EMCS	EMCS	EMCS	NA: Alteration	NA: Alteration Project

[1]*FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.*

J. VENTILATION AND INDOOR AIR QUALITY

This section does not apply to this project.

K. TERMINAL BOX CONTROLS

This section does not apply to this project.

L. DISTRIBUTION (DUCTWORK and PIPING)

This section does not apply to this project.

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			**NRCC-MCH-E**
Project Name:	Solano CCD Bldg 300 Modernization	**Report Page:**	**(Page 5 of 6)**
		Date Prepared:	2023-04-03T12:35:31-04:00

M. COOLING TOWERS

This section does not apply to this project.

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Form/Title
NRCI-MCH-01-E - Must be submitted for all buildings

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Form/Title	Systems/Spaces To Be Field Verified
NRCA-MCH-18-A Energy Management Control Systems	Intelliweb

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no NRCV forms required for this project.

Q. MANDATORY MEASURES DOCUMENTATION LOCATION

This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.

01		02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block	No	Plan sheet or construction document location
03		04
Mandatory Measure		**Plan sheet or construction document location**
Heating Equipment Efficiency per 110.1		M6.01 Split System Cooling Unit Schedule
Cooling Equipment Efficiency per 110.1		M6.01 Split System Cooling Unit Schedule
Furnace Standby Loss Control per 110.2(d)		N/A
Heat Pump with Supplemental electric Resistance Heater Controls per 110.2(b)		N/A

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			**NRCC-MCH-E**
Project Name:	Solano CCD Bldg 300 Modernization	**Report Page:**	**(Page 6 of 6)**
Project Address:		**Date Prepared:**	2023-04-03T12:35:31-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: James Sanderson	Documentation Author Signature:
Company: SALAS O'BRIEN	Signature Date: 4/5/2023
Address: 305 SOUTH 11TH STREET	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: SAN JOSE, CA 95112	Phone: 877-725-2755

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Responsible Designer Signature:
Company: SALAS O'BRIEN	Date Signed: 4/5/2023
Address: 305 SOUTH 11TH STREET	License: M36498
City/State/Zip: SAN JOSE, CA 95112	Phone: 877-725-2755

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PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

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STAMP

REGISTERED PROFESSIONAL ENGINEER JAMES SANDERSON NO. M36498 ELECTRICAL STATE OF CALIFORNIA

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

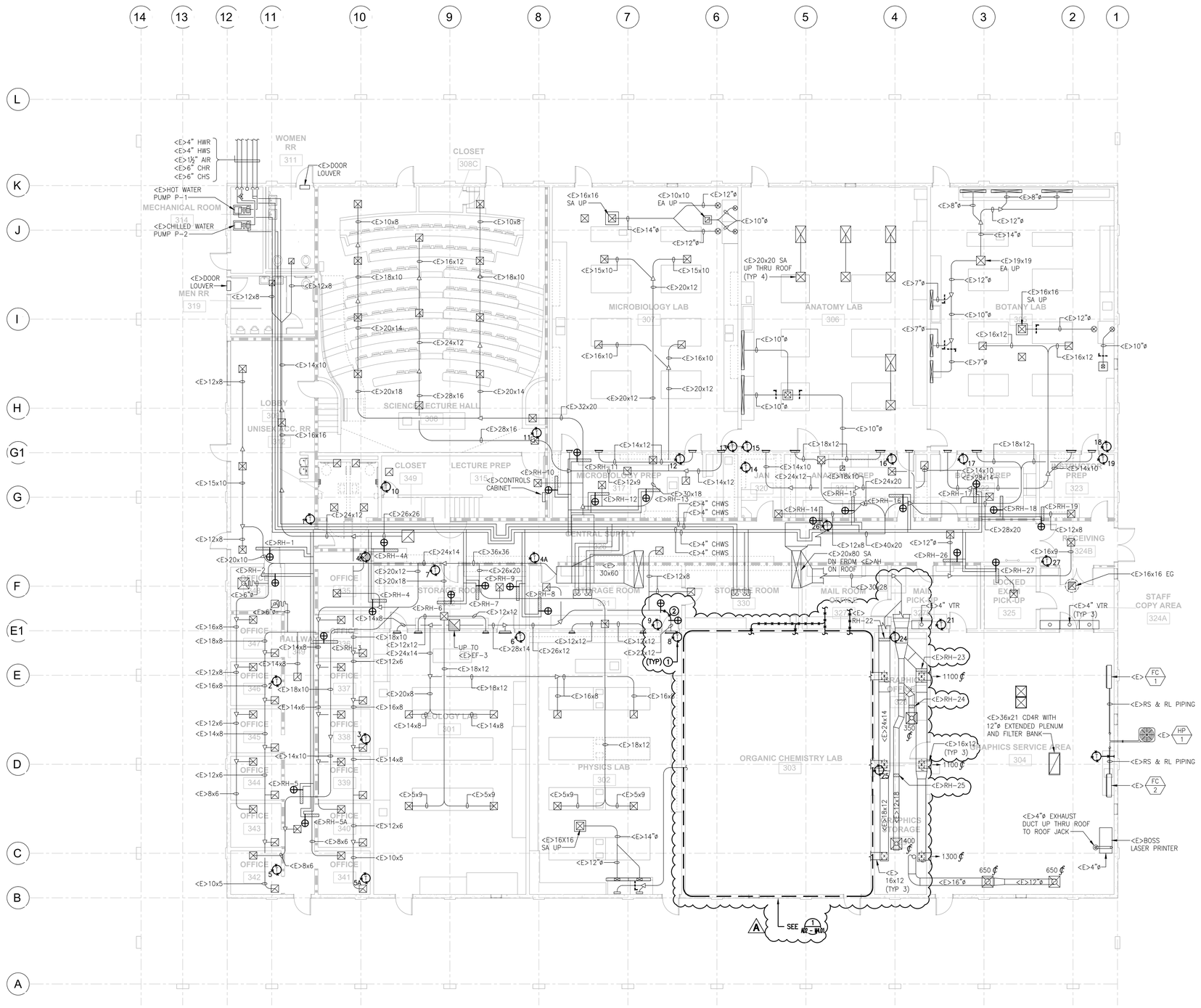
SHEET

MECHANICAL TITLE 24

DATE 04.12.2023

JOB # 2022012 (SOBE 2201690)

SHEET # A AD2 - M0.01



1 **FLOOR PLAN LEVEL 1 - DEMO**
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

A. THE INTENT OF THIS PROJEC IS TO PROVIDE THE CAMPUS THE ABILITY TO MONITOR AND CONTROL THE AHU'S, EF'S, PUMPS, AND REHEAT VALVES AT THE BUILDING. THIS PROJECT DOESN'T MAKE ANY CHANGES TO THE WAY THE AIRFLOW IS BALANCED AT THE BUILDING. THE CONTRACTOR IS TO MAINTAIN THE EXISTING AIRFLOW TO AND FROM THE SPACES.

B. CONTROLS CONTRACTOR SHALL PROVIDE LOW VOLTAGE CONTROL WIRING AND TRANSFORMER PANELS.

C. ELECTRICAL CONTRACTOR SHALL PROVIDE 120V POWER AND CONDUITS FOR CONTROLLERS AND SHALL VERIFY POWER TO EXHAUST FANS THAT SERVE CLASSROOM AND OFFICES.

D. HYDRONIC PIPING TO REMAIN UNCHANGED. ONLY CONTROL VALVES ARE TO BE REPLACED.

E. NO MODIFICATIONS TO THE DUCTWORK FOR THIS PROJECT.

F. CONTRACTOR SHALL MEASURE AIRFLOW AT ALL DIFFUSERS, RETURN GRILLES, AND EXHAUST GRILLES PRIOR TO PERFORMING ANY WORK. THE SYSTEM AIRFLOWS SHALL BE KEPT THE SAME FOR THE CONTROLS UPGRADE.

G. MAINTAIN FIRE RATING AT WALLS WHERE CONTROLS CONDUIT AND CONTROLS CABLE PASS THROUGH FIRE RATED WALLS. SEE DETAILS 1 THRU 4/M-5.1 FOR FIRESTOPPING SYSTEM NEEDED TO MAINTAIN FIRE RATING AT THROUGH PENTRATIONS

REFERENCE SHEET NOTES

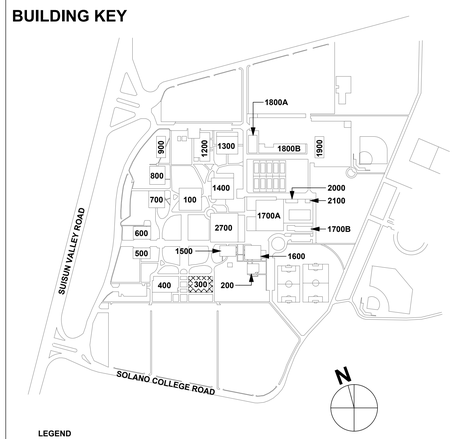
1. DEMO REHEAT COIL PNEUMATIC ACTUATORS AND THERMOSTATS.
2. DEMO SECTION OF EXHAUST DUCT. A

GRAPHIC KEY

WALL TYPES

- (E) WOOD FRAME WALL TO REMAIN
- (E) CONCRETE WALL TO REMAIN
- (E) 1-HOUR RATED WALL TO REMAIN
- 1-HOUR RATED WALL

BUILDING KEY



LEGEND

BUILDINGS IN SCOPE

aedis architects
www.aedisarchitects.com
387 S. 1st Street, Suite 300
San Jose, CA 95113
tel: (408)-300-5160
fax: (408)-300-5121

PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

SALASO'BRIEN
expect a difference
305 South 11th Street
San Jose, California 95112-2218
877.725.2755 | 877.925.1477 (f)
WWW.SALASOBRIEN.COM
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STAMP

REGISTERED PROFESSIONAL ENGINEER
JAMES SANDERSON
M36408
MECHANICAL
STATE OF CALIFORNIA

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET

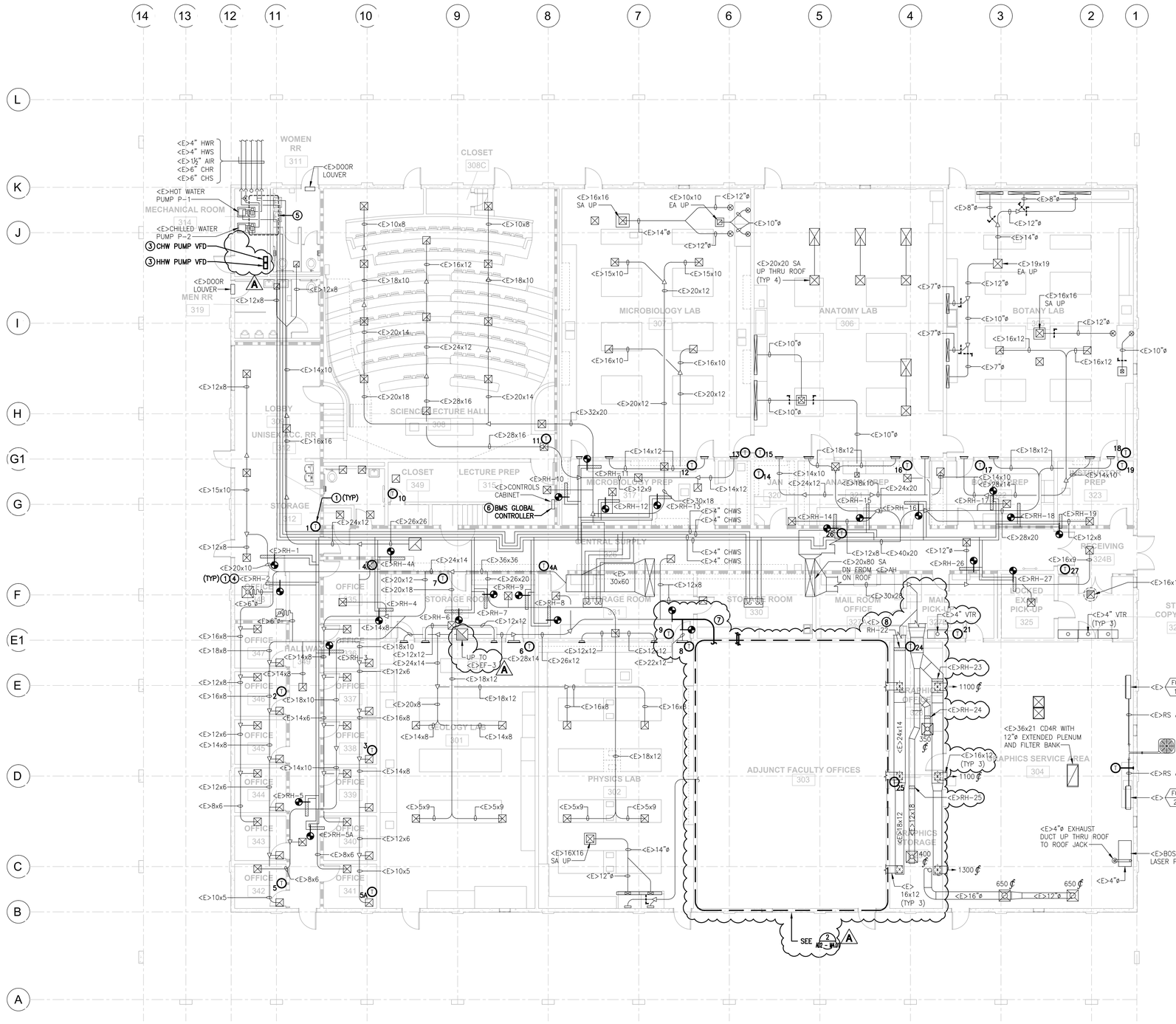
MECHANICAL FLOOR PLAN LEVEL 1 - DEMO

DATE 04.12.2023

JOB # 2022012 (SOBE 2201690)

SHEET #

AD2 - MD2.01



1 FLOOR PLAN LEVEL 1 - NEW

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

GENERAL SHEET NOTES

A. THE INTENT OF THIS PROJEC IS TO PROVIDE THE CAMPUS THE ABILITY TO MONITOR AND CONTROL THE AHU'S, EF'S, PUMPS, AND REHEAT VALVES AT THE BUILDING. THIS PROJECT DOESN'T MAKE ANY CHANGES TO THE WAY THE AIRFLOW IS BALANCED AT THE BUILDING. THE CONTRACTOR IS TO MAINTAIN THE EXISTING AIRFLOW TO AND FROM THE SPACES.

B. CONTROLS CONTRACTOR SHALL PROVIDE LOW VOLTAGE CONTROL WIRING AND TRANSFORMER PANELS.

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D. HYDRONIC PIPING TO REMAIN UNCHANGED. ONLY CONTROL VALVES ARE TO BE REPLACED.

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F. CONTRACTOR SHALL MEASURE AIRFLOW AT ALL DIFFUSERS, RETURN GRILLES, AND EXHAUST GRILLES PRIOR TO PERFORMING ANY WORK. THE SYSTEM AIRFLOWS SHALL BE KEPT THE SAME FOR THE CONTROLS UPGRADE.

G. MAINTAIN FIRE RATING AT WALLS WHERE CONTROLS CONDUIT AND CONTROLS CABLE PASS THROUGH FIRE RATED WALLS. SEE DETAILS 1 THRU 4/M-5.1 FOR FIRESTOPPING SYSTEM NEEDED TO MAINTAIN FIRE RATING AT THROUGH PENTRATIONS

1 REFERENCE SHEET NOTES

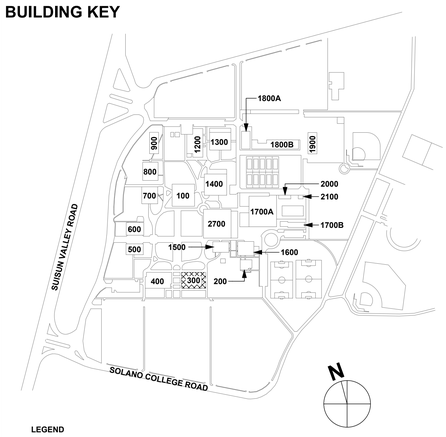
1. FURNISH AND INSTALL REHEAT ELECTRIC CONTROL VALVE ACTUATOR AND THERMOSTAT. CONNECT TO BMS. MOUNT THERMOSTAT ON WALL WITH LOW REACH MEASURED AT 15" AFF TO THE BOTTOM OF THE THERMOSTAT AND HIGH REACH MEASURED AT MAXIMUM OF 48" AFF TO THE TOP OF THE THERMOSTAT WHERE OBSTRUCTION IS 20" MAXIMUM. WHERE OBSTRUCTED HIGH FORWARD REACH >20"-25", THEN THE TOP OF THE THERMOSTAT IS AT MAXIMUM OF 44" AFF.
2. CONNECT HP-1, FC-1, AND FC-2 TO BMS.
3. FURNISH AND INSTALL VFD'S CONNECTING TO BMS TO CONTROL PUMPS. SEE SEE DETAIL 5/M-5.1 FOR ANCHORING VFD TO THE WALL.
4. FURNISH AND INSTALL CONTROLLER ON CEILING NEAR REHEAT COIL.
5. INSTALL BTU METERS ON CHW SUPPLY & RETURN AND ON HHW SUPPLY & RETURN.
6. FURNISH AND INSTALL GLOBAL CONTROLLER. INSTALL AT EXISTING CONTROLS CABINET. CONNECT TO ETHERNET.
7. FURNISH AND INSTALL DUCTWORK THAT EXHAUSTS AIR FROM ROOM 303 THROUGH EF-3.
8. DISABLE CONTROLS AT REHEAT COIL. DISCONNECT AND CAP HHW PIPE.

GRAPHIC KEY

WALL TYPES

- (E) WOOD FRAME WALL TO REMAIN
- (E) CONCRETE WALL TO REMAIN
- (E) 1-HOUR RATED WALL TO REMAIN
- 1-HOUR RATED WALL

BUILDING KEY



LEGEND

BUILDINGS IN SCOPE

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PROJECT

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SOLANO COMMUNITY COLLEGE

SOLANO COMMUNITY COLLEGE DISTRICT

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STAMP

REGISTERED PROFESSIONAL ENGINEER JAMES SANDERSON M36408 MECHANICAL STATE OF CALIFORNIA

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET

MECHANICAL FLOOR PLAN LEVEL 1 - NEW

DATE 04.12.2023

JOB # 2022012 (SOBE 2201690)

SHEET # AD2 - M2.01

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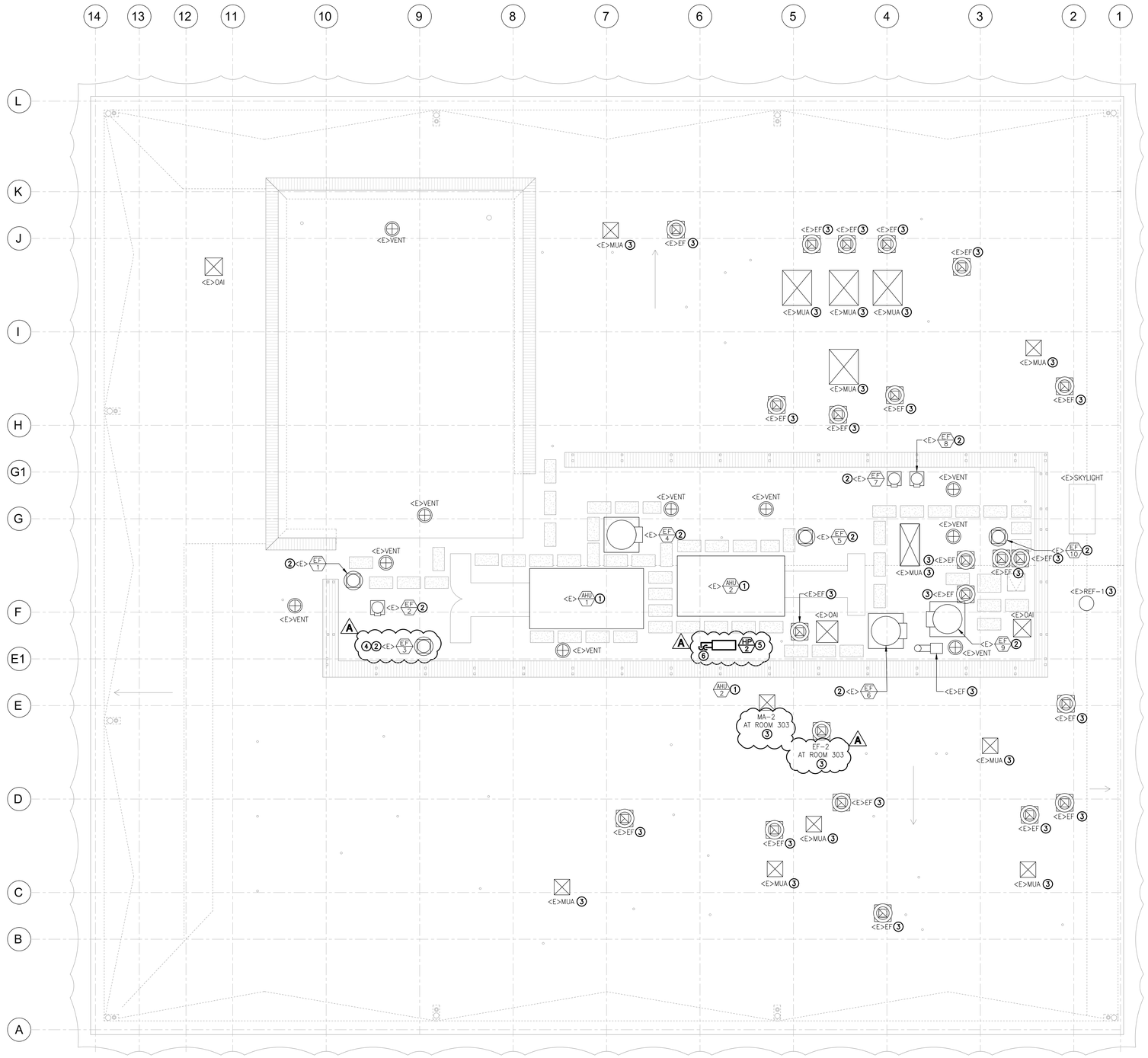


1 ROOF PLAN - NEW

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

0 8' 16'

GENERAL SHEET NOTES

A. CONTRACTOR TO VERIFY POWER TO EXHAUST FANS THAT SERVE CLASSROOM SPACES.

B. CONTROLS CONTRACTOR SHALL PROVIDE LOW VOLTAGE CONTROL WIRING AND TRANSFORMER PANELS.

C. ELECTRICAL CONTRACTOR SHALL PROVIDE 120V POWER AND CONDUITS FOR CONTROLLERS.

D. HYDRONIC PIPING TO REMAIN UNCHANGED. ONLY PUMPS AND CONTROL VALVES ARE TO BE REPLACED.

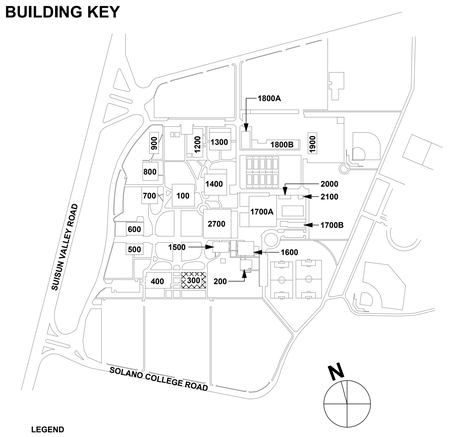
E. NO MODIFICATIONS TO THE DUCTWORK FOR THIS PROJECT.

F. CONTRACTOR SHALL MEASURE AIRFLOW AT ALL OPERABLE AHU'S AND EF'S PRIOR TO PERFORMING ANY WORK. THE SYSTEM AIRFLOWS SHALL BE KEPT THE SAME FOR THE CONTROLS UPGRADE.

REFERENCE SHEET NOTES

1. CONNECT <E> AIR HANDLING UNIT TO THE NEW GLOBAL CONTROLLER LOCATED IN ROOM 315. SEE MI DRAWINGS FOR CONTROLS DESIGN.
2. CONNECT <E> EXHASUT FAN TO THE NEW GLOBAL CONTROLLER LOCATED IN ROOM 315. SEE MI DRAWINGS FOR CONTROLS DESIGN.
3. EF'S AND MUA'S NOT IN USE AND ABANDONED IN PLACE.
4. REMOVE EF-3 MOTOR AND REPLACE WITH 2 HP MOTOR. A
5. FURNISH AND INSTALL HEAT PUMP, SEE DETAIL 9/M5.01 FOR MOUNTING.
6. RERIGERANT LINES PENETRATE ROOF. SEE ARCHITECTURAL DRAWINGS FOR THRU PENETRATION DETAIL.

BUILDING KEY



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REVISIONS

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A	Addendum 2	04/12/23

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DSA BACKCHECK	02.21.2023

SHEET

MECHANICAL ROOF PLAN - NEW

DATE 04.12.2023

JOB # 2022012 (SOBE 2201690)

SHEET #

AD2 - M2.02

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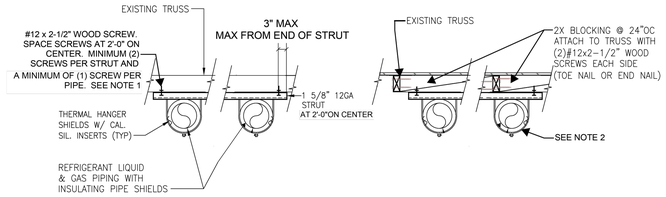


PIPE SUPPORT TO ROOF FRAMING PERPENDICULAR TO TRUSS

PIPE SUPPORT TO ROOF FRAMING PARALLEL TO TRUSS

NOTES:
1) DRILL HOLE IN STRUT 1/16" GREATER THAN SCREW OR BOLT DIAMETER. FOR PRE-DRILLED STRUTS, USE WASHERS TO REDUCE SIZE OF HOLE.
2) SEE PERPENDICULAR TO TRUSS DETAILS FOR INFO NOT SHOWN.

3 REFRIGERANT LINE SUPPORT
SCALE: NTS

ASBESTOS NOTE:
ASBESTOS CONTAINING PRODUCT ARE PRESENT IN THE EXISTING BUILDING CONSTRUCTION. REFER TO ASBESTOS AND LEAD BASED PAINT SURVEY REPORT PREPARED BY PMP ENVIRONMENTAL CONSULTING ON NOVEMBER 18, 2019 AS WELL AS THE REVISED REPORT AND SPECIFICATION ISSUED ON APRIL 12, 2023 FOR SOLANO COMMUNITY COLLEGE.

MATERIALS WHICH CONTAIN ASBESTOS INCLUDE GRAY PUTTY ASSOCIATED WITH BLACK SINKS, CEMENT RESIN COUNTERTOPS, TRANSITE PANELS WITHIN FUME HOODS, BEIGE HVAC TAPING LOCATED IN PLENUM AREA, ALL VINYL FLOOR TILE AND MASTIC.

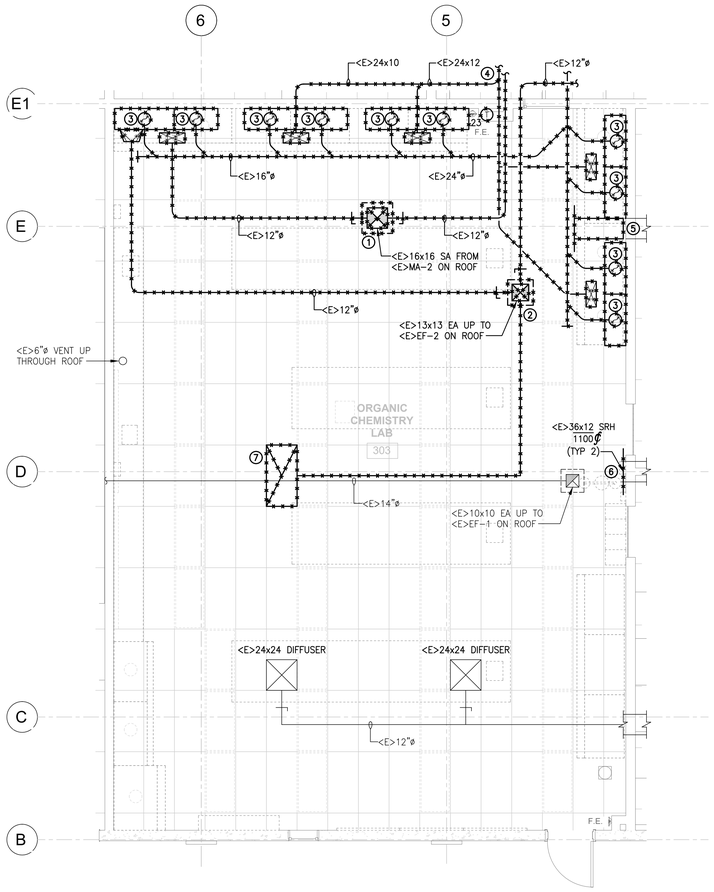
IF ADDITIONAL SUSPECT MATERIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER' S REPRESENTATIVE FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH ADDITIONAL WORK. THE CONTRACTOR SHALL IMMEDIATLY POST NOTICES AND TAKE PRECAUTIONS NECESSARY TO ENSURE THE HEALTH AND SAFETY OF ALL WORKERS, THE STAFF AND THE PUBLIC.

GENERAL SHEET NOTES

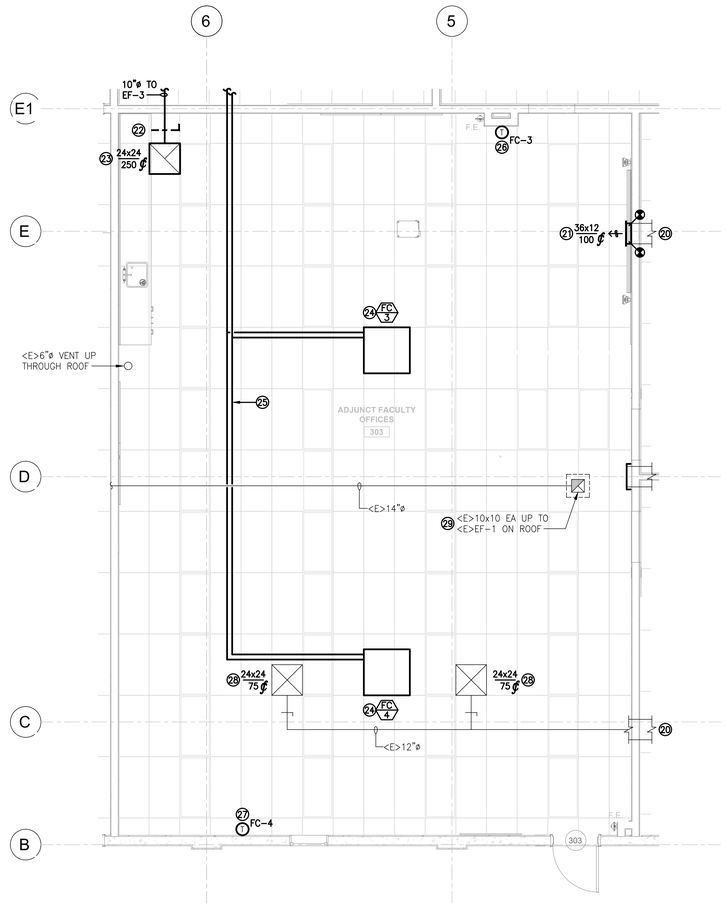
A. MINIMUM VENTILATION SHALL BE PROVIDED BY THE 100% OUTSIDE AIR HANDLING UNIT, AH-2.

B. HEATING AND COOLING SHALL BE PROVIDED BY A SPLIT SYSTEM.

C. FUME HOOD AND LAB EXHAUST DUCTWORK REQUIRES HAZMAT ABATEMENT



1 FLOOR PLAN RM 303 ORGANIC CHEMISTRY LAB - DEMO
SCALE: 1/4" = 1'-0"



2 FLOOR PLAN RM 303 ADJUNCT FACULTY OFFICES - NEW
SCALE: 1/4" = 1'-0"

1 REFERENCE SHEET NOTES

DEMO:

1. DEMO THE DUCTWORK BACK TO MA-2 ROOF PENETRATION DUCT. CAP THE DUCT AND ABANDON THE FAN IN PLACE.
2. DEMO THE DUCTWORK BACK TO EF-2 ROOF PENETRATION DUCT. CAP THE DUCT AND ABANDON THE FAN IN PLACE.
3. DEMO THE FUMEHOOD CANOPIES AND FUMEHOOD EXHASUT DUCTWORK.
4. DEMO THE MAKEUP AIR DUCTWORK THAT ROUTES FROM AH-2 TO THE FUMEHOODS.
5. DEMO THE SIDEWALL REGISTER AND DUCTWORK IN PREPARATION FOR NEW SIDEWALL DIFFUSER.
6. DEMO THE SIDEWALL REGISTER AND CAP THE DUCTWORK.
7. DEMO THE 24x48 CEILING EXHAUST AIR GRILLE AND DUCTWORK.

NEW:

20. 100% OUTSIDE AIR FROM AH-2.
21. PROVIDE AND INSTALL SIDEWALL DIFFUSER EQUIPPED WITH MANUAL VOLUME DAMPER.
22. PROVIDE AND INSTALL EXHAUST AIR DUCT AND MANUAL VOLUME DAMPER THAT CONNECTS TO THE GENERAL EXHAUST FAN, EF-3. SEE DETAILS 7,8,11/M5.01 FOR INSTALLATION DETAILS.
23. PROVIDE AND INSTALL EXHAUST AIR GRILLE IN THE CEILING. SEE DETAILS 7,8,11/M5.01 FOR INSTALLATION DETAILS.
24. PROVIDE AND INSTALL CEILING CASSETTES THAT CONNECT TO HEAT PUMP, HP-2, LOCATED ON THE ROOF. SEE DETAIL 10/M5.01 FOR INSTALLATION DETAILS.
25. PROVIDE AND INSTALL REFRIGERANT LINES ABOVE THE CEILING THAT ROUTE FROM THE CEILING CASSETTES UP THROUGH THE ROOF TO HP-2. SUPPORT REFRIGERANT LINES PER DETAIL 3/M4.01.
26. PROVIDE AND INSTALL THERMOSTAT TO CONTROL FC-3.
27. PROVIDE AND INSTALL THERMOSTAT TO CONTROL FC-4.
28. BALANCE EXISTING SUPPLY AIR DIFFUSERS.
29. EF-1 AND ASSOCIATED DUCTWORK IS EXISTING AND SERVES ROOM 302.

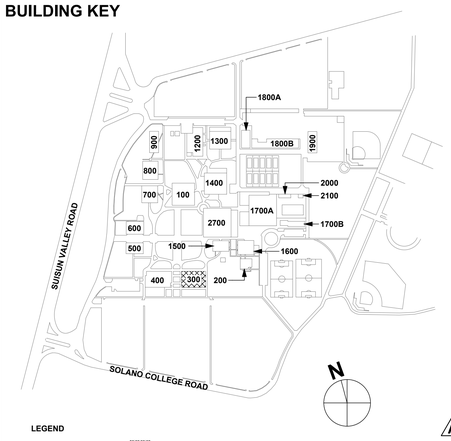
GRAPHIC KEY

WALL TYPES

(E) WOOD FRAME WALL TO REMAIN

(E) CONCRETE WALL TO REMAIN

BUILDING KEY



LEGEND

BUILDINGS IN SCOPE

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DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET

MECHANICAL ENLARGED FLOOR PLANS

DATE 04.12.2023

JOB # 2022012 (SOBE 2201690)

SHEET # A AD2 - M4.01

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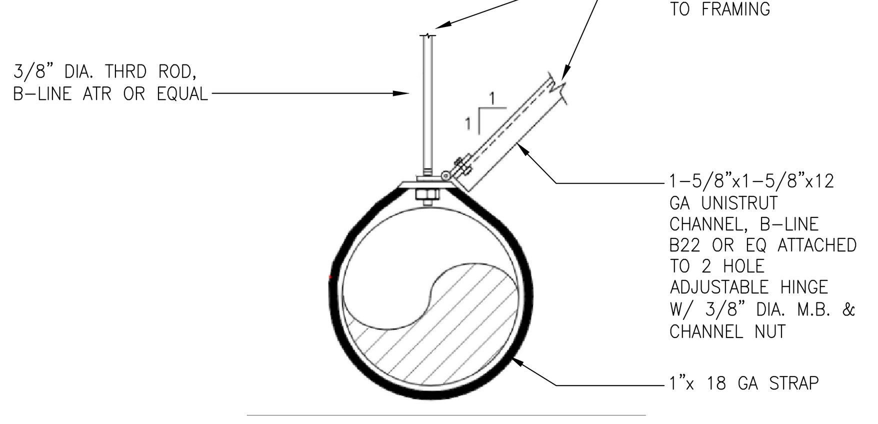
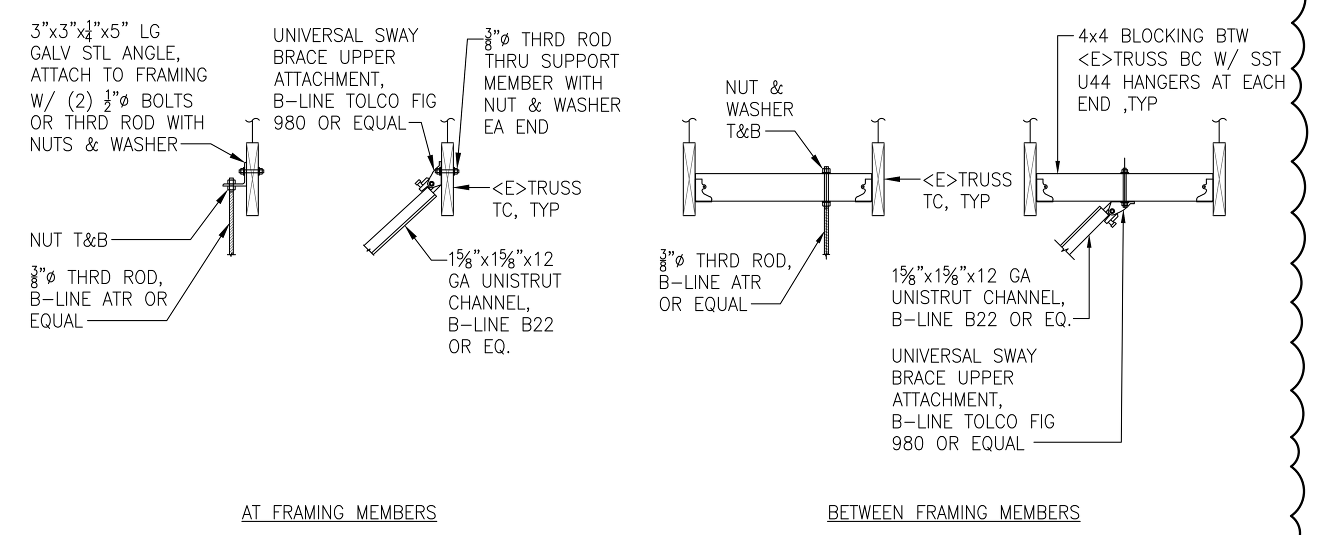


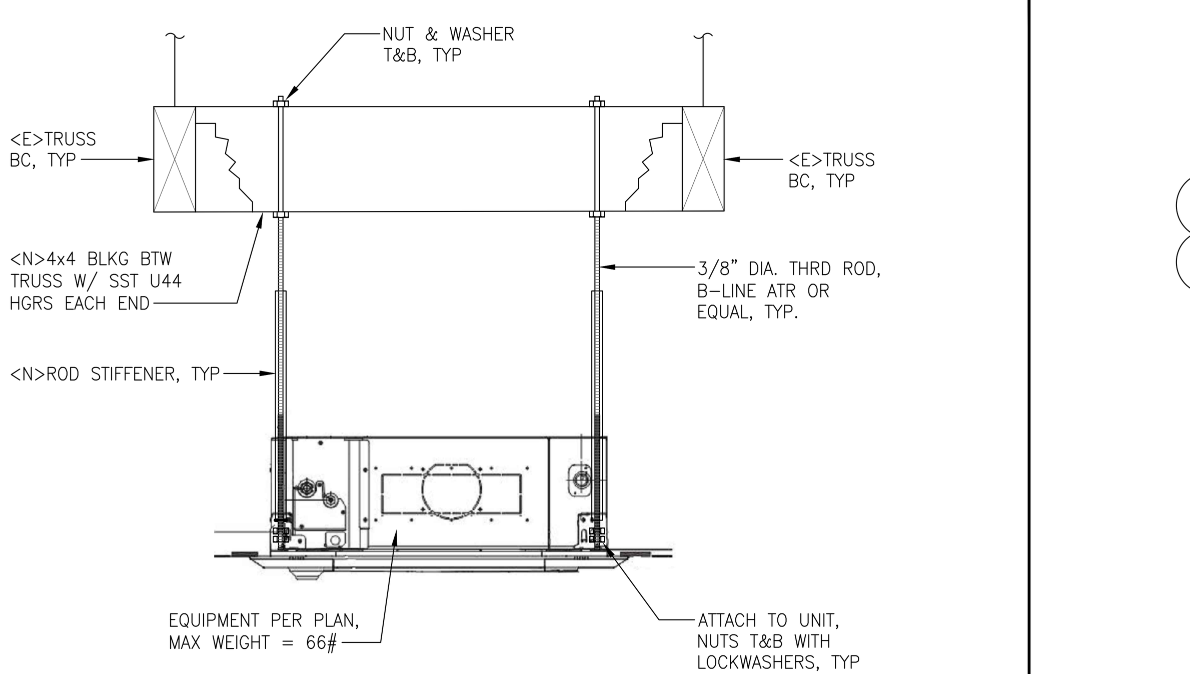
11 ROUND DUCT SUPPORT DETAIL (<26" DIA.)

SCALE: N.T.S.



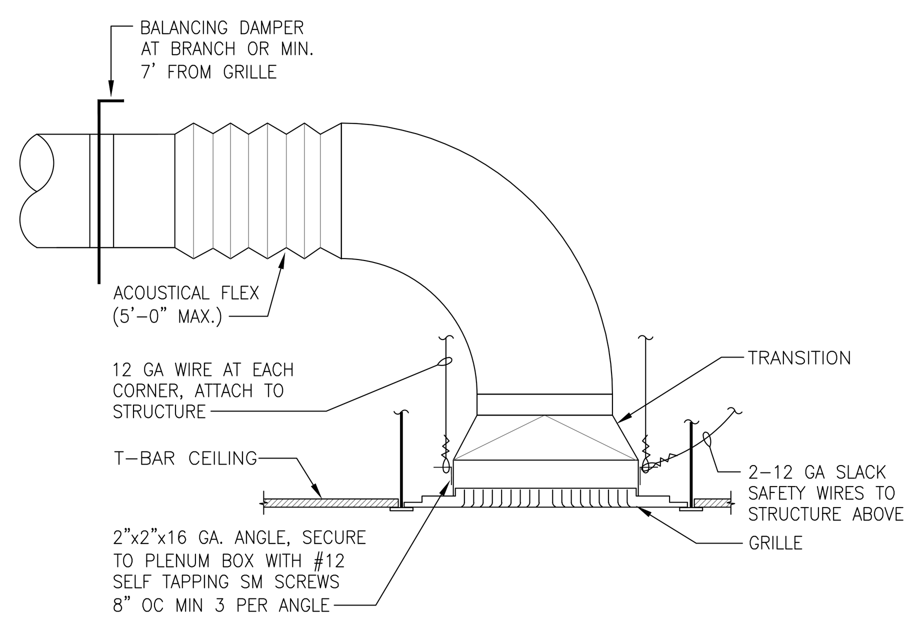
8 DUCT ATTACHMENTS TO WOOD

SCALE: N.T.S.



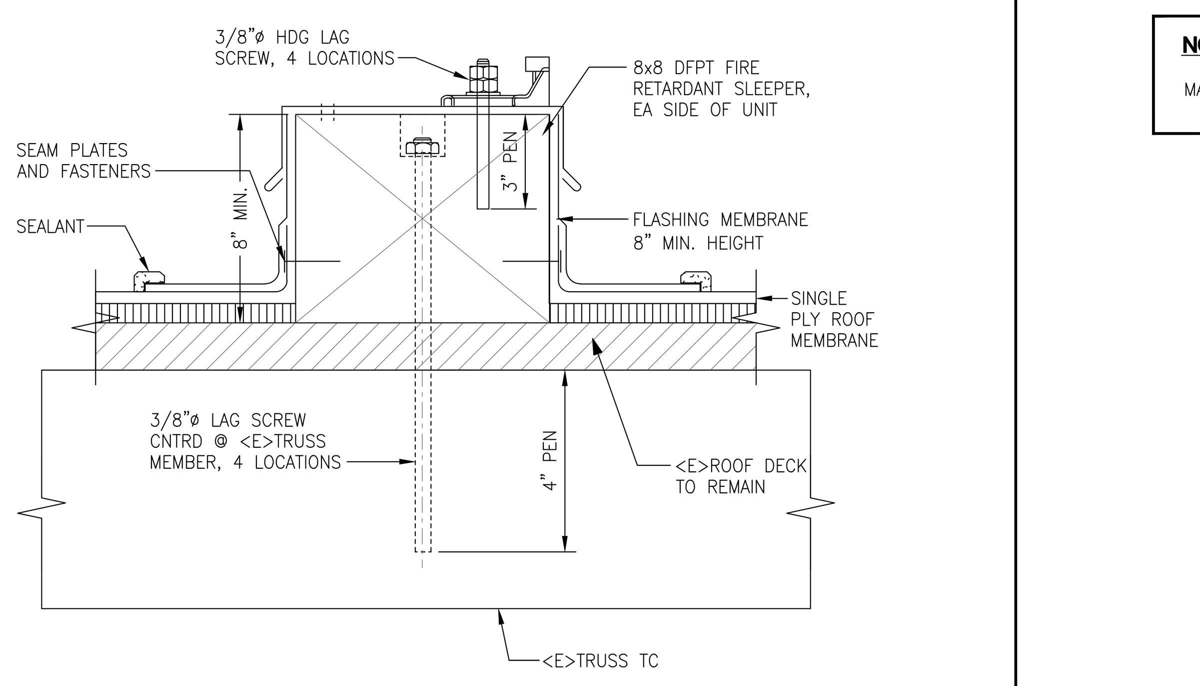
10 CEILING CASSETTE SUPPORT

SCALE: N.T.S.



7 FLEX DUCT CEILING GRILLE MOUNTING

SCALE: N.T.S.

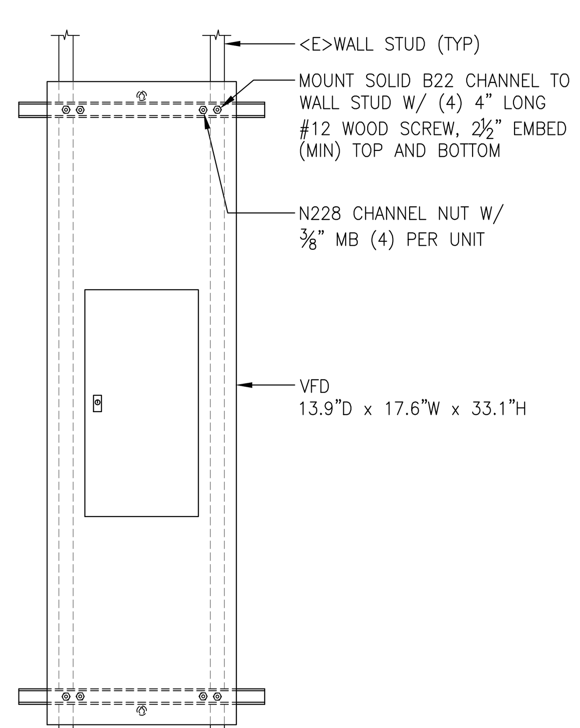


9 HEAT PUMP ANCHORAGE

SCALE: N.T.S.

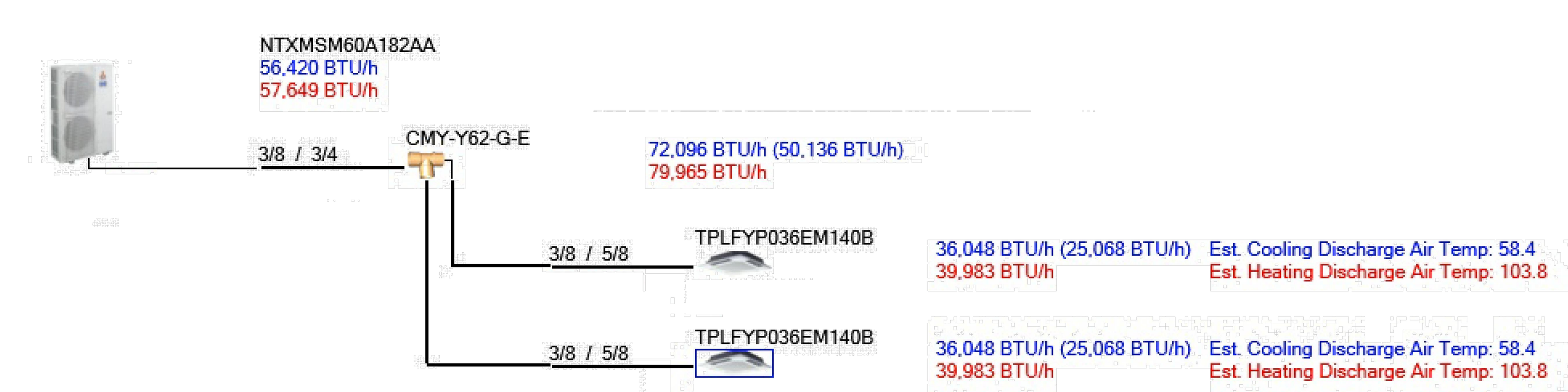
NOTE:

MAX WEIGHT = 84 LBS.



5 VFD MOUNTING - WOOD STUD

SCALE: N.T.S.



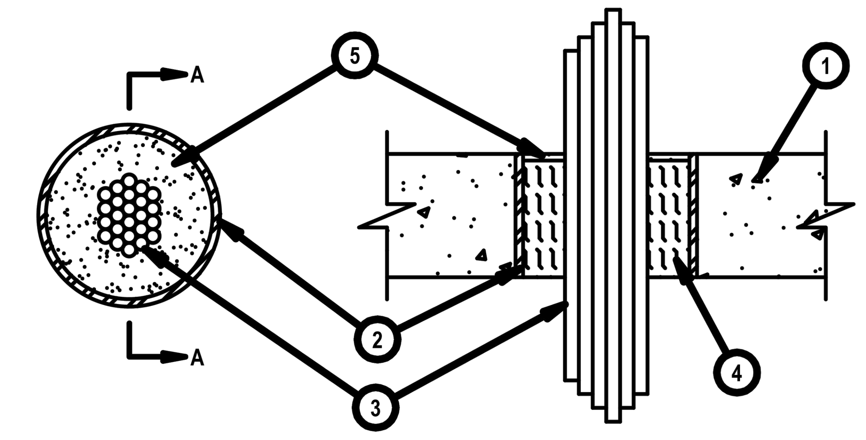
6 SPLIT SYSTEM PIPING SCHEMATIC

SCALE: N.T.S.

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

System No. C-AJ-3180

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 3 Hr	F Rating — 3 Hr
T Rating — 0 Hr	FT Rating — 0 Hr
	FH Rating — 3 Hr
	FTH Rating — 0 Hr



SECTION A-A

1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600 2400 kg/m3) concrete floor or min 4-3/4 in. (121 mm) thick reinforced lightweight or normal weight concrete wall. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 6 in.(152 mm).
   See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. Steel Sleeve — (Optional) — Nom 6 in. (152 mm) diam (or smaller) Schedule 40 (or heavier) steel pipe cast or grouted into floor or wall assembly, flush with floor or wall surfaces.
3. Cables — Aggregate cross-sectional area of cables in opening to be max 45 percent of the aggregate cross-sectional area of the opening. Cables to be rigidly supported on both sides of floor or wall assembly. Any combination of the following types and sizes of metallic conductor or fiber optic cable may be used:
   A. Max 500 kcmil single copper connector power cable with thermoplastic insulation and polyvinyl chloride (PVC) jacket.
   B. Max 300 pair No. 24 AWG copper conductor telecommunication cables with polyvinyl chloride (PVC) insulation and jacket material.
   C. Max 7/C copper conductor No. 12 AWG multiconductor power and control cables with polyvinyl chloride (PVC) or cross-linked polyethylene (XLPE) insulation and PVC jacket.
   D. Multiple fiber optical communication cables jacketed with PVC and having a max outside diam of 1/2 in. (13 mm).
   E. Max 3/C copper conductor No. 12 AWG with bare aluminum ground, polyvinyl chloride (PVC) insulated steel, Metal-clad cable.
   F. Max 3/C with ground 2/0 AWG copper conductor SER cable with cross-linked polyethylene (XLPE) insulation and polyvinyl chloride (PVC) jacket.
   G. RG/U coaxial cable with polyethylene (PE) insulation and polyvinyl chloride (PVC) jacket having a max outside diameter of ½ in. (13 mm)
   H. Fire Resistive Cables* - Max 1-1/4 in. (32 mm) diam single conductor or multi conductor Type MI cable. A min 1/8 in. (3 mm) separation shall be maintained between MI cables and any other types of cable.
4. Packing Material — Min 4-1/4 in. (108 mm) thickness of min 4 pcf (64 kg/m3) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor to accommodate the required thickness of fill material.
5. Fill, Void or Cavity Material* — Sealant — Min 1/4 in. (6.4 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent Sealant.

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Hilti Firestop Systems

Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. January 13, 2015

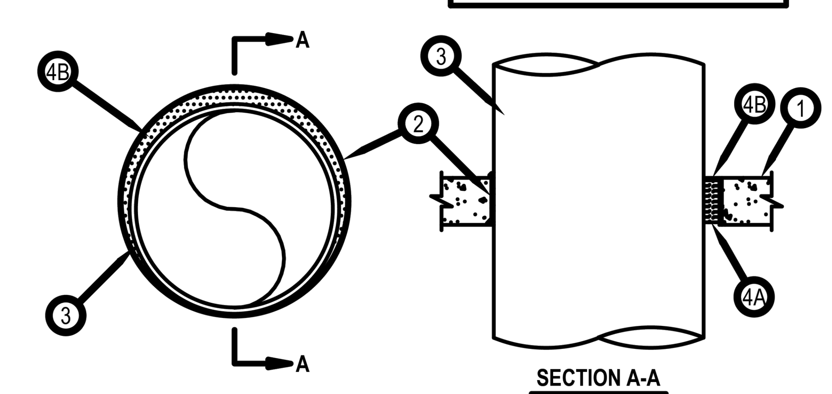
4 CABLE THROUGH MASONARY WALL

SCALE: N.T.S.

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

System No. C-AJ-1226

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 3 Hr	F Rating — 3 Hr
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating At Ambient — Less Than 1 CFM/sq ft	FH Rating — 3 Hr
L Rating At 400 F — 4 CFM/sq ft	FTH Rating — 0 Hr
	L Rating At Ambient — Less Than 1 CFM/sq ft
	L Rating At 400 F — 4 CFM/sq ft



SECTION A-A

1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 32 in. (813 mm).
2. Metallic Sleeve — (Optional) Nom 32 in. (813 mm) diam (or smaller) Schedule 40 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces or extending a max of 3 in. (76 mm) above floor or beyond both surfaces of wall.

2A. Sheet Metal Sleeve — (Optional) Max 6 in. (152 mm) diam, min 26 ga. galv steel provided with a 26 ga galv steel square flange spot welded to the sleeve at approx mid-height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. (51 mm) larger than the sleeve diam. The sleeve is to be cast in place and may extend a max of 4 in. (102 mm) below the bottom of the deck and a max of 1 in. (25 mm) above the top surface of the concrete floor.

2B. Sheet Metal Sleeve — (Optional) - Max 12 in. (305 mm) diam, min 24 ga galv steel provided with a 24 ga galv steel square flange spot welded to the sleeve at approx mid-height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. (51 mm) larger than the sleeve diam. The sleeve is to be cast in place and may extend a max of 4 in. (102 mm) below the bottom of the deck and a max of 1 in. (25 mm) above the top surface of the concrete floor.

3. Through-Penetrant — One metallic pipe, tube or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between penetrant and periphery of opening shall be min 0 in. (point contact) to max 1-7/8 in. (48 mm). Penetrant may be installed with continuous point contact. Penetrant to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic penetrants may be used:
   A. Steel Pipe — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe — Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.
   C. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.
   D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
   E. Conduit — Nom 6 in. (152 mm) diam (or smaller) steel conduit.
   F. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT).
4. Firestop System — The firestop system shall consist of the following:
   A. Packing Material — Min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or sleeve or from both surfaces of wall or sleeve as required to accommodate the required thickness of fill material.
   B. Fill, Void or Cavity Material* — Sealant — Min 1/4 in. (6 mm) thickness of fill material applied within the annulus, flush with top surface of floor or sleeve or with both surfaces of wall or sleeve. At the point or continuous contact locations between penetrant and concrete or sleeve, a min 1/4 in. (6 mm) diam bead of fill material shall be applied at the concrete or sleeve/ pipe penetrant interface on the top surface of floor and on both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent Sealant

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Hilti Firestop Systems

Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. January 07, 2015

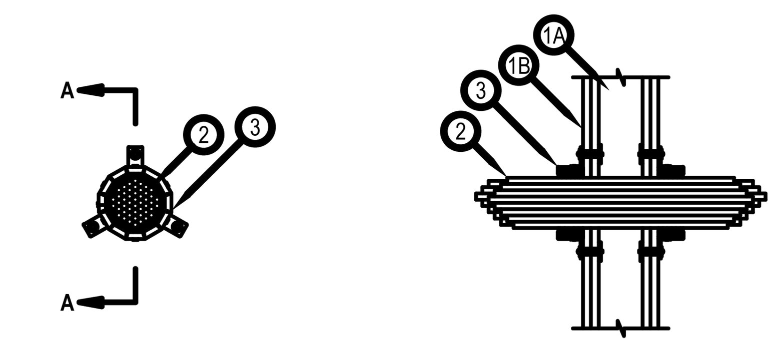
3 CONDUIT THROUGH MASONARY WALL

SCALE: N.T.S.

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

System No. W-L-3396

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1 and 2 Hr (See Item 1)	F Ratings - 1 and 2 Hr (See Item 1)
T Ratings - 0, 1 and 2 Hr (See Items 2 and 3)	FT Ratings - 0, 1 and 2 Hr (See Items 2 and 3)
L Rating At Ambient - See Item 3	FH Ratings - 1 and 2 Hr (See Item 1)
L Rating At 400F - See Item 3	FTH Ratings - 0, 1 and 2 Hr (See Items 2 and 3)
	L Rating At Ambient - See Item 3
	L Rating At 400F - See Item 3



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
   A. Studs — Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
   B. Gypsum Board* — Nom 5/8 in. (16 mm) thick gypsum board as specified in the individual Wall and Partition Design. Opening in gypsum board to be max 4 in. (102 mm) diam.
   The hourly F and FH Ratings of the firestop system are dependent upon the hourly rating of the wall in which it is installed.

1A. Sleeve — (Not Shown, Optional) - Nom 4 in. (102 mm) diam (or smaller) sleeve friction fit into wall opening, flush with both wall surfaces. The following types of sleeves may be used: Schedule 5 (or heavier) steel pipe, min 28 ga steel sleeve, or Schedule 40 solid or cellular core polyvinyl chloride (PVC).

2. Cables — Cables may be installed within opening for a 0 to 100 percent visual fill. When PVC sleeve (Item 1A) is used, the aggregate cross-sectional area of cable in opening to be max 45 percent of the cross-sectional area of the opening. Cables to be tightly bundled and rigidly supported on both sides of wall assembly. Any combination of the following types of cables may be used:
   A. Max 100 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
   B. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   C. Max 4/0 AWG Type RHH ground cable.
   D. Max 4 pr No. 22 AWG Cat 5 or Cat 6 computer cables.
   E. Max RG 6/U coaxial cable with fluorinated ethylene insulation and jacketing.
   F. Fiber optic cable with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 1/2 in. (13 mm).
   G. Max 3/C No 12 AWG MC Cable.
   For opening with cables, when the hourly rating of the wall assembly is 1 hr, the T, FT and FTH Ratings are 0 hr. For opening with cables, when the hourly rating of the wall assembly is 2 hr, the T, FT and FTH Ratings are 1 hr.
3. Firestop Device* — Firestop device consisting of a steel collar with plug to be centered over opening and mounted to face of gypsum board on both sides of wall. Each flange of collar is secured to wall with No. 10 by 1-1/2 in. (38 mm) steel laminating screw and min 9/16 in. (15 mm) diam steel washer through prepunched hole in flange. As an alternate, min 3/16 in. (4.8 mm) diam by 2-1/2 in. (64 mm) long steel toggle bolts in conjunction with min 9/16 in. (15 mm) diam steel washers may be used. For openings with cables, plug within collar cut to fit tightly around the cable bundle. For blank openings (no cables), the hourly F and FH Ratings of the firestop system are equal to the hourly rating of the wall in which it is installed.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-CC 4" Firestop Cable Collar
   L Ratings apply to blank the openings only per indicated in Table below.

Opening	CFM (per device)		CFM/Sq Ft Opening	
	Ambient	400F	Ambient	400F
Blank Opening Only (no cables)	Less Than 1	Less Than 1	Less Than 1	4
Max 100% visual fill with Cat 5 and/or Cat 6 cables	1.2	Less Than 1	13.2	8.9

4. Fill, Void or Cavity Material* (Optional, Not Shown) — Fill material applied to fill interstices between and around the cable bundle at both sides of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant, CP 618 Putty

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Hilti Firestop Systems

Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. January 23, 2015

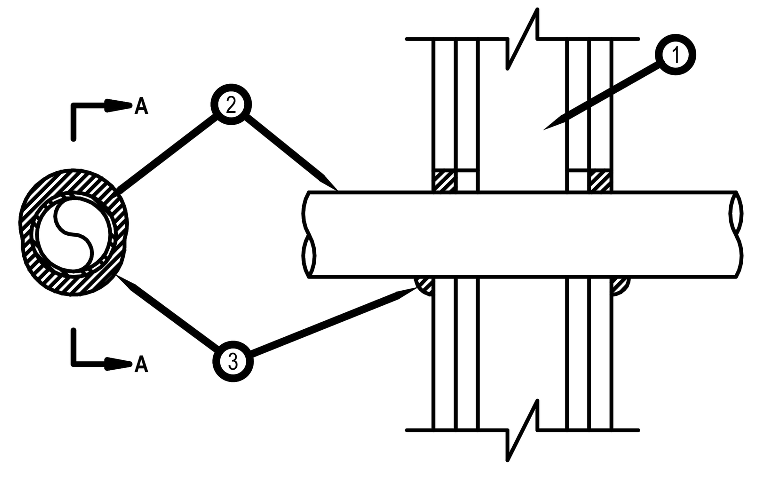
2 CABLE THROUGH STUD WALL

SCALE: N.T.S.

Classified by Underwriters Laboratories, Inc. to UL 1479

System No. W-L-2244

F Ratings -- 1 and 2 Hr (See Item 1)
T Ratings -- 1 and 2 Hr (See Item 1)
L Rating at Ambient - Less Than 1 CFM/sq ft
L Rating at 400 F - 2 CFM/sq ft



SECTION A-A

1. Wall Assembly — The 1 and 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, U400, V400 or W400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide by 1-3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC.
   B. Gypsum Board* — The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Series Design in the UL Fire Resistance Directory. Max diam of opening is 3 in. (76 mm).
   The hourly F and T Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.
2. Through Penetrant — One nonmetallic pipe, conduit or tubing installed either concentrically or eccentrically within the firestop system. The annular space between pipe and periphery of opening shall be min of 0 in. (point contact) to a max 5/8 in. .(16 mm). Pipe to be rigidly supported on both sides of wall assembly. The following types and sizes of nonmetallic pipes may be used:
   A. Polyvinyl Chloride (PVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) cellular or solid core Schedule 40 (or heavier) pipe for use in closed (process or supply) piping systems.
   B. Chlorinated Polyvinyl Chloride (CPVC) — Nom 2 in. (51 mm) diam (or smaller) SDR 13.5 CPVC pipe for use in closed (process or supply) piping systems.
3. Fill, Void or Cavity Material* - Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within annulus, flush with both surfaces of wall. At point contact location, a min 1/2 in. (13 mm) diam bead of fill material shall be applied to the wall/penetrant interface on both surfaces of the wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Hilti Firestop Systems

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1 CONDUIT THROUGH STUD WALL

SCALE: N.T.S.

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Solano CCD BLDG 300 Modernization

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REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET

MECHANICAL DETAILS

DATE 04.12.2023

JOB # 2022012 (SOBE 2201690)

SHEET #

AD2 - M5.01

SPLIT SYSTEM COOLING UNIT SCHEDULE

MARK	MAKE	MODEL	NOM. TONS	SUPPLY CFM	ESP (IN. WG)	EQUIPMENT CAPACITY HEAT BTU/HR	HSPF	COOLING BTU/HR	EER/ SEER	VOLT/PH/ HERTZ	MCA (AMPS)	MOCP (AMPS)	OPER. WEIGHT (LBS)	NOTES
FC-1	SAMSUNG	AM032MNQDCH/AA	3	706	0.40	33,400		31,700	-	208/1/60	-	-	48	THIS IS AN EXISTING UNIT. FAN COIL UNIT,DVM SERIES, WALL MOUNT, HORIZONTAL DISCHARGE. FURNISH COMPLETE WITH DISPOSABLE FILTER AND FILTER GRILLE. PROVIDE WITH PRIMARY AND SECONDARY CONDENSATE DRAINS. PROVIDE CONDENSATE PUMP 'ASPEN MINI ORANGE
FC-2	SAMSUNG	AM032MNQDCH/AA	3	706	0.40	33,400		31,700	-	208/1/60	-	-	48	
HP-1	SAMSUNG	AM072FXVAFHAA	6	-	-	81,000		72,000	13/29.70	208/3/60	28	35	425	THIS IS AN EXISTING UNIT. HEAT PUMP, OUTDOOR SECTION, MATCH WITH INDOOR FAN COIL UNIT AS INDICATED. FURNISH COMPLETE WITH FILTER DRIER, COMPRESSOR START ASSIST, COMPRESSOR START ASSIST CAPACITOR, LOW AMBIENT CONTROLLER, CRANKCASE HEATER, PRE-CHARGED REFIDGERANT SUCTION AND LIQUID LINES (WITH TAMPER PROOF CAP), HEATING AND COOLING THERMOSTAT AND ALL CONTROLL WIRING
FC-3	**MITSUBISHI**	**TPLFYP036EM140B**	**3**	**1,095**	**-**	**40,000**	**-**	**36,000**	**-**	**208/1/60**	**0.92**	**15**	**66**	**PROVIDE MERV 13 FILTER FOR THIS UNIT.**
FC-4	**MITSUBISHI**	**TPLFYP036EM140B**	**3**	**1,095**	**-**	**40,000**	**-**	**36,000**	**-**	**208/1/60**	**0.92**	**15**	**66**	**PROVIDE MERV 13 FILTER FOR THIS UNIT.**
HP-2	**MITSUBISHI**	**NTXMSM60A182AA**	**6**	**-**	**-**	**66,000**	**12.0**	**60,000**	**13.3/20.0**	**208/1/60**	**36**	**50**	**302**	**HEATING DEMAND IS 19,000 BTU/HR. COOLING DEMAND IS 45,000 BTU/HR**

EXHAUST FAN SCHEDULE (EXISTING FOR REFERENCE)

MARK	BLDG /RM NO.	MAKE	MODEL	CFM	RPM	ESP	HP	VOLT/PH/ HERTZ	OPER. WEIGHT (LBS)	NOTES
EF-1	ROOF	GREENHECK	GB-240-10	5100	731	0.625	1	460/3/60	123	1
~~EF-2~~	~~ROOF~~	~~GREENHECK~~	~~TCBRU-2-12-2~~	~~1,500~~	~~1,095~~	~~0.75~~	~~3/4~~	~~115/1/60~~	~~215~~	~~1~~
EF-3	ROOF	GREENHECK	GB-240-15	6,450	790	0.50	2	460/3/60	123	1, 3
~~EF-4~~	~~ROOF~~	~~GREENHECK~~	~~TCBRU-1-30-30~~	~~8,300~~	~~753~~	~~1.00~~	~~3~~	~~460/3/60~~	~~1126~~	~~1~~
EF-5	ROOF	GREENHECK	GB-240-5	3000	553	0.50	1/2	115/1/60	123	1
EF-6	ROOF	GREENHECK	TCBRU-1-30-30	8300	754	1.00	3	460/3/60	1126	1
EF-7	ROOF	GREENHECK	TCBRU-1-10-3	750	1746	0.75	1/3	115/1/60	283	1
EF-8	ROOF	GREENHECK	GB-160HP-4	900	953	0.625	1/4	115/1/60	90	1
EF-9	ROOF	GREENHECK	TCBRU-1-30-30	8300	734	1.00	3	460/3/60	1126	1
EF-10	ROOF	GREENHECK	GB-240-7	3600	587	0.50	3/4	460/3/60	123	1
REF-1	ROOF	GREENHECK	GB-081-3-X	-	-	-	-	-	-	2

NOTES:
1) PROVIDE CONTROL INTERFACE TO EMS SYSTEM
2) ~~ABANDON IN PLACE~~
3) REPLACE THE MOTOR TO 2 HP AND BALANCE THE EXHAUST FAN TO EXHAUST THE ADDITIONAL EXHAUST FROM ROOM 303.

VFD SCHEDULE

MARK	HP	MANUFACTURER	MODEL	VOLTAGE / PHASE / FREQ	BYPASS	ENCLOSURE	MOUNTING	WEIGHT (LB)	NOTES
HHWP-VFD	**5**	**ABB**	**ACH580**	**480/3/60**	**YES**	**NEMA 12**	**INDOOR**	**84**	**1 THRU 5**
CHWP-VFD	**7.5**	**ABB**	**ACH580**	**480/3/60**	**YES**	**NEMA 12**	**INDOOR**	**84**	**1 THRU 5**

NOTES:
1) VFD SHALL INCLUDE INTEGRAL 5% INPUT LINE REACTORS.
2) VFD SHALL HAVE BACNET INTERFACE CARD.
3) WARRANTY SHALL BE 30 MONTHS WITH ABB CERTIFIED START UP.
4) VFD SHALL INCLUDE SERVICE SWITCH FOR BYPASS.
5) VFD SHALL INCLUDE BLUETOOTH CONTROL PANEL.

AHU SCHEDULE (EXISTING FOR REFERENCE)

MARK	MAKE	MODEL	SUPPLY FAN CFM	RPM	ESP	HP	MIN. OA CFM	RETURN/EXHAUST FAN CFM	RPM	ESP	HP	CHW COIL	HTG COIL	VOLT/PH/ HERTZ	OPER. WEIGHT (LBS)	NOTES
AH-1	GOVERNAIR	PF02-40 NYB 12	17500	890	4.05	20	100%	-	-	-	-	CC-1	HC-1	460/3/60	8500	1,2,3
AH-2	GOVERNAIR	PF02-40 NYB 12	17500	890	4.05	20	100%	-	-	-	-	CC-1	HC-1	460/3/60	8500	1,2,3

NOTES:
1) PROVIDE DUCT SMOKE DETECTOR PER CMC 608
2) DUCT SMOKE DETECTOR SUPPLIED BY ELECTRICAL CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR
3) EXISTING AIR HANDLING UNITS

AHU COIL SCHEDULE (EXISTING FOR REFERENCE)

MARK	MAKE	MODEL	SUPPLY CFM	ENT DB (F)	ENT WB (F)	LVG DB (F)	LVG WB (F)	APD (IN.WG)	GPM	EWT (F)	LWT (F)	WPD (FT)	ROWS	FPF	NOTES
CC-1	GOVERNAIR	CUSTOM COOLING COIL	17,500	77	96	54	53	0.64	160	44	56	11	6	8	1
HC-1	GOVERNAIR	CUSTOM COOLING COIL	17,500	35	35	72	72	0.64	71	180	160	3	1	8	1

NOTES:
1) EXISTING COILS

PUMP SCHEDULE (EXISTING FOR REFERENCE)

MARK	SERVICE	MAKE	MODEL	GPM	TDH (Ft.)	HP	RPM	MIN. PUMP EFF.	SIZE	VOLT/PH/ HERTZ	MCA (AMPS)	MOCP (AMPS)	OPER. WEIGHT (LBS)	SUCT. DIFF.	TRIPLE DUTY	NOTES
P-1	CHILLED WATER	BELL & GOSSETT	1510	4710	165	250	1780	85.7%	10x12x14	460/3/60			4,000			
P-2	CHILLED WATER	BELL & GOSSETT	1510	4710	165	250	1780	85.7%	10x12x14	460/3/60			4,000			

NOTES

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PROJECT
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JAMES SANDERSON
M36408
MECHANICAL
STATE OF CALIFORNIA

STATE
DSA FILE NUMBER 48-C1
APPL # 02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET
MECHANICAL SCHEDULES

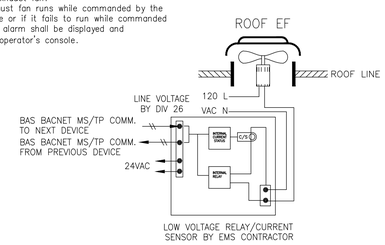
DATE 04.12.2023
JOB # 2022012 (SOBE 2201690)
SHEET # AD2 - M6.01

DDC POINTS LIST

Point I.D.	Control Device	Control Description	Control Device Location	AI	AO	DI	DO	B	NOTES
EXHAUST FANS									
EF-X S/S	RELAY	EXHAUST FAN START/STOP	ROOF				12		
EF-X STS	CURRENT SWITCH	EXHAUST FAN STATUS	ROOF			12			
CHWP									
CHWP-X SPEED FB	VFD	PUMP VFD SPEED FEEDBACK	MECHANICAL ROOM	1					
CHWP-X SPEED	VFD	PUMP VFD SPEED	MECHANICAL ROOM		1				
CHWP-X FLT	VFD	PUMP VFD FAULT	MECHANICAL ROOM			1			
CHWP-X MAINT	VFD	PUMP VFD MAINTENANCE STATUS	MECHANICAL ROOM			1			
CHWP-X KW	VFD	PUMP VFD POWER KW	MECHANICAL ROOM	1					
HHWP									
HHWP-X SPEED FB	VFD	HHW PUMP PCHWP-X VFD SPEED FEEDBACK	MECHANICAL ROOM	1					
HHWP-X SPEED	VFD	HHW PUMP PCHWP-X VFD SPEED	MECHANICAL ROOM		1				
HHWP-X FLT	VFD	HHW PUMP PHHWP-X VFD FAULT	MECHANICAL ROOM			1			
HHWP-X MAINT	VFD	HHW PUMP PHHWP-X VFD MAINTENANCE STATUS	MECHANICAL ROOM			1			
HHWP-X KW	VFD	HHW PUMP PCHWP-X VFD POWER KW	MECHANICAL ROOM	1					
SPLIT SYSTEM									
SPLSYS-S/S	BACNET	SPLIT SYSTEM START/STOP	FC-1,2 AND HP-1					1	
SPLSYS-RMTMP	BACNET	SPLIT SYSTEM ROOM TEMPERATURE	FC-1,2 AND HP-1					1	
SPLSYS-MODE	BACNET	SPLIT SYSTEM MODE AUTO/COOL/HEAT/FAN/DRY	FC-1,2 AND HP-1					1	
SPLSYS-FANSP	BACNET	SPLIT SYSTEM FAN SPEED	FC-1,2 AND HP-1					2	2
A									
HP-2-S/S	BACNET	SPLIT SYSTEM START/STOP	HP-2 AND FC-3,4					1	3,4
FC-3-RMTMP	BACNET	SPLIT SYSTEM ROOM TEMPERATURE	FC-3					1	3,4
FC-3-MODE	BACNET	SPLIT SYSTEM MODE AUTO/COOL/HEAT/FAN/DRY	FC-3					1	3,4
FC-3-FANSP	BACNET	SPLIT SYSTEM FAN SPEED	FC-3					1	3
FC-4-RMTMP	BACNET	SPLIT SYSTEM ROOM TEMPERATURE	FC-4					1	3,4
FC-4-MODE	BACNET	SPLIT SYSTEM MODE AUTO/COOL/HEAT/FAN/DRY	FC-4					1	3,4
FC-4-FANSP	BACNET	SPLIT SYSTEM FAN SPEED	FC-4					1	3,4
AIR HANDLING UNIT									
AHU-X DPT	DPT	DIFEERENTIAL PRESSURE AT FILTER	AHU-1 AND AHU-2	2					
AHU-X SAT	TEMP TRANSMITTER	DISCHARGE AIR SENSOR (10K TYPE 2)	AHU-1 AND AHU-2	2					
AHU-X OA DMPR	ACTUATOR	OUTSIDE AIR DAMPER ACTUATOR	AHU-1 AND AHU-2		2				
AHU-X S/S	MOTOR STARTER	SUPPLY FAN START/STOP	AHU-1 AND AHU-2				2		
AHU-X STS	CURRENT TRANSDUCER	SUPPLY FAN STATUS	AHU-1 AND AHU-2	2					
AHU-X CHW VLV	ACTUATOR	CONTROL COOLING	AHU-1 AND AHU-2		2				1
AHU-X CHWS TEMP	TEMP TRANSMITTER	CHW SUPPLY TEMPERATURE	AHU-1 AND AHU-2	2					
AHU-X CHWR TEMP	TEMP TRANSMITTER	CHW RETURN TEMPERATURE	AHU-1 AND AHU-2	2					
AHU-X HHW VLV	ACTUATOR	CONTROL HEATING	AHU-1 AND AHU-2		2				1
AHU-X HHWS TEMP	TEMP TRANSMITTER	HHW SUPPLY TEMPERATURE	AHU-1 AND AHU-2	2					
AHU-X HHWR TEMP	TEMP TRANSMITTER	HHW RETURN TEMPERATURE	AHU-1 AND AHU-2	2					
AHU-X SD	SMOKE DETECTOR	AUTOMATIC SHUTOFF	AHU-1 AND AHU-2			2			
REHEAT COILS									
RH-X RT	SENSOR	REHEAT ROOM TEMPERATURE	BLDG	20					
RH-X HHWVLV	ACTUATOR	REHEAT HHW CONTROL VALVE	BLDG		20				
METERING									
BTU-X MTR	BTU METER	ENERGY RATE	MECHANICAL ROOM	2					
BTU-X MTR	BTU METER	VOLUME RATE	MECHANICAL ROOM	2					
BTU-X MTR	BTU METER	SUPPLY TEMPERATURE	MECHANICAL ROOM	2					
BTU-X MTR	BTU METER	RETURN TEMPERATURE	MECHANICAL ROOM	2					
A				46	28	18	14	12	
			TOTAL	118					

NOTES:
1) REUSE EXISTING CONTROL.
A ~~2) THERE ARE TWO WALL MOUNTED FCU'S FOR THE ONE HEAT PUMP.~~
3) CONNECT NEW HEAT PUMP AND CEILING CASSETTE FCU'S TO INTELIWEB FRONTEND.
4) USE THE BACNET INTERFACE 'PAC-UKPRC001-CN-1' TO CONNECT CONTROL OF MITSUBISHI SPLIT SYSTEM TO THE BMS.

Exhaust Fan Operation
1. The exhaust fan will operate whenever AHU's are running.
2. Monitoring – The following conditions shall be monitored:
   a. Status of exhaust fan.
3. Alarm – If the exhaust fan runs while commanded by the EMS to the off state or if it fails to run while commanded to the on state, an alarm shall be displayed and annunciated at the operator's console.



1 **SINGLE PHASE EF**
SCALE: N.T.S. (TYPICAL OF 3)

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PROJECT
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STAMP
REGISTERED PROFESSIONAL ENGINEER
JAMES SANDERSON
M06408
MECHANICAL
STATE OF CALIFORNIA

STATE
DSA FILE NUMBER 48-C1
APPL # 02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET
MECHANICAL CONTROLS

DATE 04.12.2023
JOB # 2022012 (SOBE 2201690)
SHEET #
AD2 - MI1.01

PLUMBING FIXTURE SCHEDULE

PLUMBING FIXTURE SCHEDULE

FIXTURE ID	DESCRIPTION	MAKE/MODEL	ACCESSORY - MAKE/MODEL	CONNECTIONS				COMMENTS
				SS	VT	CW	DHW	
LAV-1	RESTROOM LAVATORY	AMERICAN STANDARD / LUCERNE 0356.439	SLOAN / EAF-200-PLG-CP-0.5GPM-AER-IR-IQ-FCT FAUCET	4"	2"	1-1/2"	1/2"	
SK-1	LABROOM SINK	DURCON / A26	ZURN / Z826U4 - XL LABORATORY FAUCET	2"	1-1/2"	1/2"	1/2"	PROVIDE WITH 5" DEPTH FOR ADA COMPLIANCE. FLOW RATE SHALL NOT EXCEED 0.5 GPM AT 60 PSI
SK-2	LABROOM SINK	DURCON / A26	T & S / BL-5709-08 LABORATORY FAUCET	2"	1-1/2"	1/2"	1/2"	PROVIDE WITH 5" DEPTH FOR ADA COMPLIANCE FLOW RATE SHALL NOT EXCEED 0.5 GPM AT 60 PSI
SK-3	LABROOM SINK	DURCON / A26	T & S / BL-5709-08 LABORATORY FAUCET	2"	1-1/2"	1/2"	1/2"	PROVIDE WITH 11" DEPTH FOR NON-ADA COMPLIANCE. FLOW RATE SHALL NOT EXCEED 0.5 GPM AT 60 PSI.
SK-4	LABROOM SINK	ELKAY/ EHS-18-SSX	ZURN/ Z826U4-XL LABORATORY FAUCET	2"	1-1/2"	1/2"	1/2"	PROVIDE WITH 5" DEPTH FOR ADA COMPLIANCE. FLOW RATE SHALL NOT EXCEED 0.5 GPM AT 60 PSI
SK-5	ROOM 303 BREAKROOM KITCHEN SINK	ELKAY/ ELUHAD211550PD	ZURN/ Z871A4-XL FAUCET	2"	1-1/2"	1/2"	1/2"	PROVIDE WITH 5" DEPTH FOR ADA COMPLIANCE. FLOW RATE SHALL NOT EXCEED 1.8 GPM AT 60 PSI
~~WC-1~~	~~WATER CLOSET~~	~~ZURN / Z5065 BWN~~	-	4"	2"	1-1/2"	-	~~THE WATER CLOSETS SHALL NOT EXCEED 1.28 GALLONS PER FLUSH~~
DF-1	DRINKING FOUNTAIN	ELKAY / LZSTLDDWSSK	-	-	-	-	-	SEE ELECTRICAL DRAWINGS FOR POWER CONNECTIONS.

CONSTRUCTION PHOTOGRAPHIC RECORDS

THE CONTRACTOR SHALL PROVIDE PRECONSTRUCTION DIGITAL PHOTOGRAPHS AND VIDEO RECORDINGS PRIOR TO COMMENCEMENT OF WORK ON THE SITE. BEFORE CONSTRUCTION MAY START, CONTRACTOR SHALL DOCUMENT ANY EXISTING CONDITIONS THAT ARE NOT COVERED BY THE CONTRACT DOCUMENTS (DAMAGED CONCRETE, WALLS, LANDSCAPE, ETC.). FAILURE TO DOCUMENT EXISTING DAMAGE WILL RESULT IN CONTRACTOR REPAIRS TO SURFACE TO MATCH ADJACENT AFTER CONSTRUCTION ACTIVITIES. ADDITIONAL PRECONSTRUCTION PHOTOGRAPHS/VIDEOS SHALL BE TAKEN AT LOCATIONS TO BE DESIGNATED BY THE OWNER'S REPRESENTATIVE.

CONTRACTOR SHALL MAKE A VIDEO RECORDING OF ALL PROPOSED ROUTINGS FOR INFRASTRUCTURE WORK, NOTING CONDITIONS OF EXISTING SURFACES AND ADJACENT IMPROVEMENTS. ONE COPY OF COMPLETE VIDEO SHALL BE TRANSMITTED TO THE OWNER'S REPRESENTATIVE.

CONSTRUCTION PHOTOGRAPHS

THE CONTRACTOR SHALL PROVIDE CONSTRUCTION PHOTOGRAPHS SHOWING THE PROGRESS OF THE WORK AND AS MAY BE DIRECTED BY THE OWNER'S REPRESENTATIVE. PHOTOGRAPHS/VIDEOS SHALL BE FORMATTED, IDENTIFIED, AND DELIVERED AS DESCRIBED ABOVE FOR DIGITAL PHOTOS AND VIDEOS. STARTING ONE MONTH AFTER THE DATE OF THE PRECONSTRUCTION PHOTOGRAPHS AND CONTINUING AS LONG AS THE WORK IS IN PROGRESS, APPROXIMATELY 40 MONTHLY PHOTOGRAPHS SHALL BE TAKEN, CATALOGED AND CROSS REFERENCED TO DRAWINGS/PLANS.

ANY WORK TO BE CONCEALED (BURIED, BEHIND WALLS, ABOVE CEILING, BELOW SLAB, ETC.) SHALL BE PHOTO DOCUMENTED AFTER ANY TESTING AND INSPECTION AND PRIOR TO CONCEALING TO CLEARLY INDICATE THE WORK. DOCUMENT ON PLANS THE LOCATION AND ORIENTATION FOR EACH PHOTO DOCUMENTING CONCEALED WORK.

FOR FINAL COMPLETION, DOCUMENT ALL PUNCH LIST ITEM COMPLETION BY PHOTOGRAPH OR VIDEO.

DELIVER CONSTRUCTION PHOTOGRAPHS AND VIDEOS WITHIN 10 DAYS OF CREATION. ALL PHOTOS AND VIDEOS SHALL BE OF SUFFICIENT QUALITY TO CLEARLY DEPICT WORK.

SCHOOL EQUIPMENT ANCHORAGE

M/E/P COMPONENT ANCHORAGE NOTE:

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON-THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC SECTION 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTION EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.

B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTION 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP ☐ MD ☐ PP ☒ E ☐ — OPTION 1: DETAIL ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP ☐ MD ☐ PP ☐ E ☐ — OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM #) # _____.

GENERAL NOTES

1. ALL WORK SHALL CONFORM WITH ALL APPLICABLE LOCAL, STATE, AND NATIONAL CODES.
2. PATCH EXISTING AND NEW OPENINGS SO FINISH PROFILES, FIXTURES, ETC. MATCH ADJACENT UNDISTURBED WORK.
3. ALL DIMENSIONS ARE APPROXIMATE. THE DRAWINGS ARE DIAGRAMMATIC TO THE EXTENT THAT ALL FITTINGS, OFFSETS, ETC., ARE NOT SHOWN. THESE DRAWINGS ARE FOR THE GUIDANCE OF THE CONTRACTOR. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD FOR FABRICATION OF PENETRATIONS, CONDUIT, WIRING, AND ALL COMPONENTS INTO A COMPLETE AND OPERABLE SYSTEM.
4. WHERE DISCREPANCIES OCCUR BETWEEN THE PLANS AND SPECIFICATIONS, CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES IN WRITING. ANY ADJUSTMENT OF THE CONTRACT DOCUMENTS WITHOUT A DETERMINATION BY THE OWNER'S REPRESENTATIVE SHALL BE AT THE CONTRACTOR'S OWN RISK AND EXPENSE. THE MOST STRINGENT REQUIREMENTS SHALL APPLY AS DETERMINED BY THE OWNER'S REPRESENTATION.
5. CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
6. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH ALL LISTED APPLICABLE CODES. (SEE APPLICABLE CODES LISTED BELOW.) SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED IN THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH ALL APPLICABLE CODES, A CHANGE ORDER, OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING WITH THE WORK.
7. CONTRACTOR TO LEGALLY DISPOSE OF OR RECYCLE PROJECT DEBRIS.
8. ALL ITEMS IN THIS CONTRACT ARE NEW U.O.N
9. ALL GENERAL NOTES ARE THE MINIMUM STANDARDS. IF MORE COMPLETE INFORMATION IS ENCOUNTERED IN OTHER PARTS OF THE CONSTRUCTION DOCUMENTS, THE CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH THE MOST STRINGENT REQUIREMENT.
10. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING BUILDING CONDITIONS AND NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING OF ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENT AND EXISTING CONDITIONS.
12. THE CONTRACTOR SHALL, DURING THE COURSE OF CONSTRUCTION, PROTECT ADJACENT AREAS FROM DAMAGE, NOISE, CONSTRUCTION, AIRBORNE DUST AND FUMES AS A RESULT OF THE WORK.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL SUB-CONTRACTORS AND SHALL BE SOLELY RESPONSIBLE FOR AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES IN ACCORDANCE WITH THE GENERAL CONDITIONS OF THE CONTRACT.
14. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE OWNER WITH A COMPLETE SET OF RECORD DRAWING, INCLUDING THE WORK OF ALL SUBCONTRACTORS.
15. ALL PRODUCTS AND MATERIALS USED ON THIS PROJECT SHALL BE FREE OF ASBESTOS.
16. NO PRODUCT WILL BE ACCEPTED ON THE JOB SITE WITHOUT PRIOR APPROVAL BY THE OWNER. THE CONTRACTOR SHALL SUBMIT CATALOG SHEETS OF ALL FIXTURES, PIPING, VALVES AND ETC., FOR REVIEW.
17. ALL PRODUCT SUBSTITUTIONS SHALL HAVE PRIOR APPROVAL BEFORE INSTALLATION. THE CONTRACTOR SHALL PAY ALL COSTS INCURRED FOR REVIEW, DESIGN AND INSTALLATION OF SUBSTITUTIONS. ACCEPTANCE OF SUBSTITUTIONS BY THE OWNER'S REPRESENTATIVE DOES NOT ALTER THE REVIEW REQUIREMENT.
18. PENETRATIONS OF DUCTS, PIPES, CONDUITS, ETC. IN WALLS AND FLOOR-CEILING ASSEMBLIES REQUIRING PROTECTED OPENINGS SHALL BE FIRE STOPPED, PER THE U.L. FIRE LISTINGS. FIRE STOP MATERIAL SHALL BE A TESTED ASSEMBLY. SEE PLANS FOR ADDITIONAL REQUIREMENTS. SUBMIT U.L. FIRE RATED ASSEMBLIES TO FIRE MARSHALL FOR APPROVAL.
19. THE INSTALLATION OF PIPING AND EQUIPMENT SHALL BE MADE IN SUCH A MANNER TO CLEAR BEAMS AND OBSTRUCTIONS. DO NOT CUT INTO OR REDUCE THE SIZE OF PLATES OR ANY LOAD CARRYING MEMBERS WITHOUT APPROVAL OF THE ARCHITECT AND ENGINEER OF RECORD. COORDINATE WITH WORK OF OTHERS TO PREVENT INTERFERENCE.
20. ALL LOCATIONS OF PIPING AND EQUIPMENT ARE SHOWN DIAGRAMMATICALLY TO THE EXTENT THAT ALL FITTINGS, OFFSETS, ETC. ARE NOT SHOWN. ADHERE TO LOCATIONS AS CLOSELY AS POSSIBLE. HOWEVER, RUNS OR SHAPE OF PIPING CAN VARY, AS REQUIRED TO MEET FOUNDATION, STRUCTURAL AND OTHER INTERFERENCES. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD FOR FABRICATION OF THE PIPING, PENETRATIONS, AND ALL COMPONENTS INTO A COMPLETE AND OPERABLE SYSTEM.
21. SUPPORT AND RESTRAIN PIPING PER CALIFORNIA MECHANICAL CODE AND ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. ALL SUPPORTING RODS, STRUT AND OTHER HARDWARE SHALL BE HOT DIPPED GALVANIZED UNLESS OTHERWISE SPECIFIED.
22. ALL SOLDER AND PLUMBING FIXTURES SHALL CONFORM TO NON LEAD STANDARDS.
23. PROVIDE ACCESS PANELS WHERE SHUT OFF VALVES AND WATER HAMMER ARRESTERS ARE LOCATED IN WALLS OR ABOVE HARD CEILINGS.
24. CONTRACTOR SHALL VERIFY EXISTING PIPE SIZES AND FUNCTION BEFORE COMMENCING WORK. REPORT DISCREPANCIES TO THE ARCHITECT.
25. INSULATE TRAP, ANGLE STOP VALVES AND HOT WATER SUPPLY PIPING TO FIXTURES BELOW HANDICAPPED ACCESSIBLE LAVS WITH APPROVED INSULATION AND PVC JACKETING.
26. ALL PIPING IN THIS CONTRACT SHALL BE LABELED ACCORDING TO ANSI A13.1, CHAPTER 13, CPC, 2019 AND NFPA 99. FURNISH FLOW ARROWS INDICATING DIRECTION OF FLOW FOR LIQUID PHASE MATERIALS. PIPE LABELS SHALL BE VISIBLE FROM FLOOR LEVEL. ALL VALVES IN THIS CONTRACT OTHER THAN MEDICAL VACUUM, SHALL BE LABELED WITH BRASS TAGS. ALL MEDICAL VACUUM VALVES SHALL BE LABELED PER CHAPTER 13, CPC, 2019 AND NFPA 99.
27. EXACT LOCATION OF EXISTING UTILITIES HAVE NOT BEEN INDEPENDENTLY VERIFIED. CONTRACTOR SHALL FIELD VERIFY ALL CONNECTION POINTS AND LOCATIONS. VERIFICATION OF ADEQUATE FALL FOR WASTE LINE SHALL BE DONE PRIOR TO BEGINNING WORK OF THIS CONTRACT.

APPLICABLE CODES

UNLESS OTHERWISE INDICATED OR SPECIFIED, PERFORM THE WORK IN CONFORMANCE WITH THE LATEST EDITIONS OF ALL APPLICABLE REGULATORY REQUIREMENTS, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

1. CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24): 2022
2. CALIFORNIA BUILDING CODE (PART 2, TITLE 24): 2018 IBC WITH 2019 CA AMENDMENTS
3. CALIFORNIA ELECTRICAL CODE (PART 3, TITLE 24): 2017 NEC WITH 2019 CA AMENDMENTS
4. CALIFORNIA MECHANICAL CODE (PART 4, TITLE 24): 2018 UMC WITH 2019 CA AMENDMENTS
5. CALIFORNIA PLUMBING CODE (PART 5, TITLE 24) 2018 UPC WITH 2019 CA AMENDMENTS
6. CALIFORNIA ENERGY CODE (PART 6, TITLE 24): 2019
7. CALIFORNIA HISTORICAL BUILDING CODE, (PART 8, TITLE 24): 2019
8. CALIFORNIA FIRE CODE (PART 9, TITLE 24): 2018 IFC WITH 2019 CA AMENDMENTS
9. CALIFORNIA EXISTING BUILDING CODE (PART 10, TITLE 24): 2019 (2018 INTERNATIONAL EXISTING BUILDING CODE WITH 2019 CA AMENDMENTS)
10. CALIFORNIA GREEN BUILDING STANDARDS CODE OR CAL GREEN (PART 11, TITLE 24): 2019
11. CALIFORNIA REFERENCED STANDARDS CODE (PART 12, TITLE 24): 2019
12. PUBLIC SAFETY (CCR TITLE 19), STATE FIRE MARSHAL: CURRENT REVISION
13. NFPA 72, NATIONAL FIRE ALARM CODE, 2016 EDITION

SUMMARY OF WORK

1. REPLACE BATHROOM FIXTURES. (A)
2. DEMOLISH PLUMBING IN ROOM 303.
3. ADD KITCHEN SINK AND FAUCET AT ROOM 303.
4. ADD CONDENSATE DRAIN LINES FOR REFRIGERANT COOLED CEILING CASSETTES.

SYMBOLS

GENERAL

- EXTENT OF DEMOLITION (POD)
- NEW TO EXISTING CONNECTION (POC)
- PLUMBING REFERENCE SHEET NOTE
- REVISION NUMBER
- DETAIL DESIGNATION — DETAIL NUMBER / DRAWING NUMBER (IF BLANK, SAME SHEET)
- EQUIPMENT DESIGNATION — EQUIPMENT TYPE / EQUIPMENT NUMBER
- TO BE DEMOLISHED

PLUMBING

- WASTE BELOW FLOOR OR GRADE
- WASTE ABOVE FLOOR
- VENT
- COLD WATER
- HOT WATER
- HOT WATER RETURN
- CIRCUIT SETTER
- BALL TYPE SHUTOFF VALVE
- GATE VALVE
- WATER HAMMER ARRESTER
- ELBOW, TURNED UP
- ELBOW, TURNED DOWN
- CAPPED PIPE
- CONNECTION, BOTTOM
- CONNECTION, TOP
- GRADE CLEAN OUT/ FLOOR CLEAN OUT
- WALL HYDRANT
- WALL CLEANOUT
- HOSE BIBB
- BREAK
- VALVE IN RISER

LINE LEGEND

- EXISTING PIPING (ABOVE GRADE OR FLOOR)
- EXISTING PIPING (BELOW GRADE OR FLOOR)
- NEW PIPING (ABOVE GRADE OR FLOOR)
- NEW PIPING (BELOW GRADE OR FLOOR)
- PIPE TO BE REMOVED (ABOVE GRADE OR FLOOR)
- PIPE TO BE REMOVED (BELOW GRADE OR FLOOR)

ABBREVIATIONS

A	COMPRESSED AIR	MFR	MANUFACTURER
ABV	ABOVE	MIN	MINIMUM
ADA	AMERICAN DISABILITIES ACT	OFD	OVER FLOW DRAIN
AFF	ABOVE FINISHED FLOOR	<N>	NEW
AFG	ABOVE FINISHED GRADE	NTS	NOT TO SCALE
AP	ACCESS PANEL	PD	PLANTER DRAIN
ARCH	ARCHITECTURAL	POC	POINT OF CONNECTION
AV	ACID VENT	POD	POINT OF DISCONNECTION
AW	ACID WASTE	PSI	POUNDS PER SQUARE INCH
BEL	BELOW	PTR	PRESSURE TEMPERATURE RELIEF
BFP	BACK FLOW PREVENTER	PVC	POLYVINYL CHLORIDE
BLDG	BUILDING	RH	RIGHT HAND
BOP	BOTTOM OF PIPE	RM	ROOM
CD	CONDENSATE DRAIN	SK	SINK
CI	CAST IRON	SOV	SHUT-OFF VALVE
CP	CHROME PLATED	SS	SANITARY SEWER
CW	COLD WATER	STS	STAINLESS STEEL
DIA	DIAMETER	TV	TEMPERING VALVE
DN	DOWN	TYP	TYPICAL
DIP	DUCTILE IRON PIPE	U	URINAL
DN	DOWN	U.O.N.	UNLESS OTHERWISE NOTED
DWG	DRAWING	V	VENT
<E>	EXISTING	VIF	VERIFY IN FIELD
EQ	EQUAL	VTR	VENT THROUGH ROOF
EQUIP.	EQUIPMENT	W	WASTE
EXT	EXTERIOR	WC	WATER CLOSET
<F>	FUTURE	WCO	WALL CLEANOUT
FCO	FLOOR CLEANOUT	WHA	WATER HAMMER ARRESTER
FD	FLOOR DRAIN	W/	WITH
FH	FUME HOOD	W/O	WITHOUT
FT	FEET OR FLUSH TANK	WT	WEIGHT
FU	FIXTURE UNITS		
FV	FLUSH VALVE		
G	GAS		
GA	GAUGE		
GAL	GALLONS		
GCO	GRADE CLEANOUT		
GPM	GALLONS PER MINUTE		
GSM	GALVANIZED SHEET METAL		
GV	GATE VALVE		
HB	HOSE BIBB		
HT	HEIGHT		
HW	HOT WATER		
HWR	HOT WATER RETURN		
LH	LEFT HAND		
LAV	LAVATORY		
LBS	POUNDS		
LPG	LOW PRESSURE NATURAL GAS		
MAX	MAXIMUM		
MFG	MANUFACTURING		
MFR	MANUFACTURER		

PLUMBING DRAWING INDEX

SHT NO.	DESCRIPTION
(A) AD2 - P0.00	PLUMBING GENERAL NOTES, SYMBOLS & ABBREVIATIONS
PD2.01	PLUMBING PARTIAL FLOOR PLANS LEVEL 1 - DEMO
(A) P2.02	PLUMBING PARTIAL FLOOR PLANS LEVEL 1 - NEW
AD2 - P4.01	PLUMBING ENLARGED FLOOR PLANS

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PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE DISTRICT

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National Strength. Local Action.

STAMP
REGISTERED PROFESSIONAL ENGINEER — JAMES SANDERSON — M08408 — MECHANICAL — STATE OF CALIFORNIA

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET
PLUMBING GENERAL NOTES, SYMBOLS & ABBREVIATIONS

DATE 04.12.2023

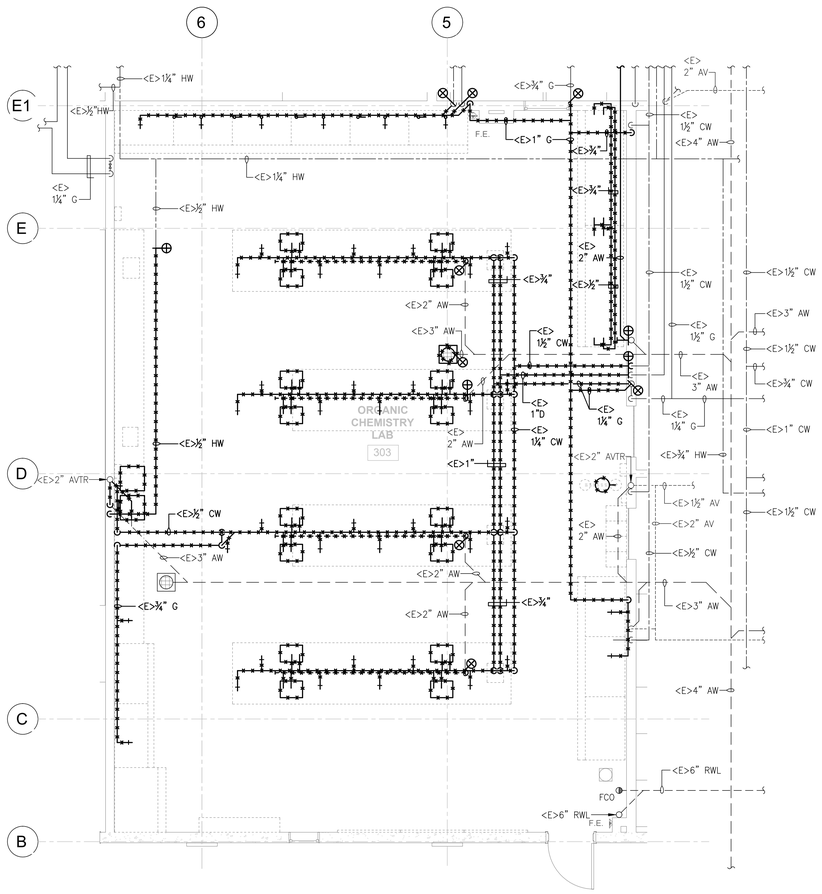
JOB # 2022012 (SOBE 2201690)

SHEET #
AD2 - P0.00

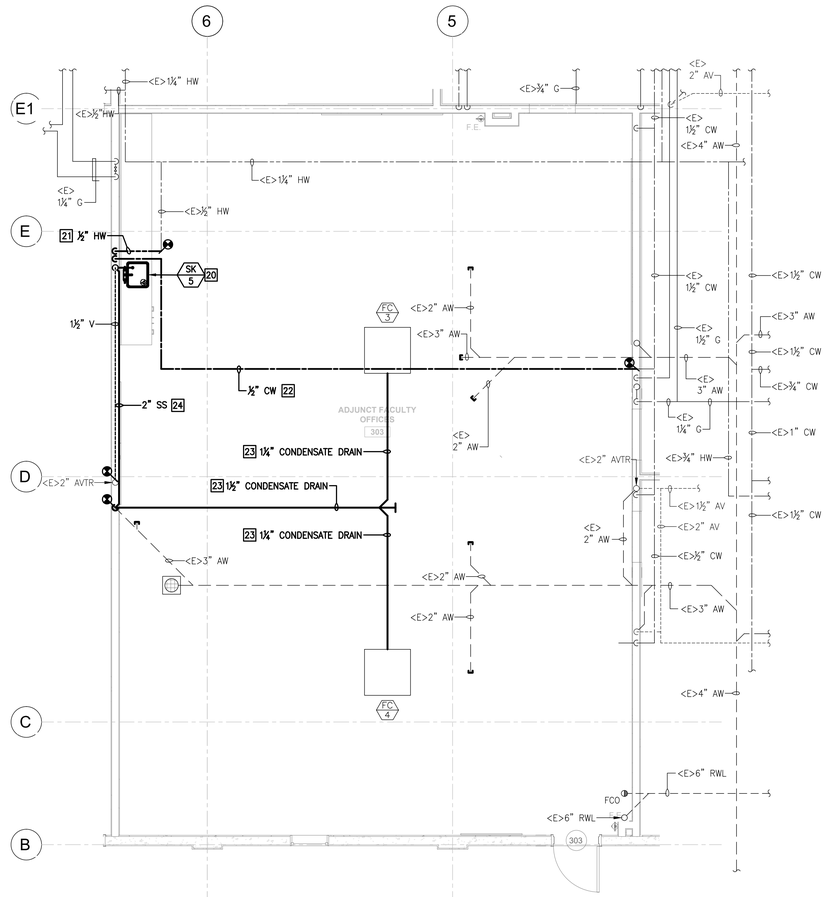
ASBESTOS NOTE:
ASBESTOS CONTAINING PRODUCT ARE PRESENT IN THE EXISTING BUILDING CONSTRUCTION. REFER TO ASBESTOS AND LEAD BASED PAINT SURVEY REPORT PREPARED BY PMP ENVIRONMENTAL CONSULTING ON NOVEMBER 18, 2019 AS WELL AS THE REVISED REPORT AND SPECIFICATION ISSUED ON APRIL 12, 2023 FOR SOLANO COMMUNITY COLLEGE.

MATERIALS WHICH CONTAIN ASBESTOS INCLUDE GRAY PUTTY ASSOCIATED WITH BLACK SINKS, CEMENT RESIN COUNTERTOPS, TRANSITE PANELS WITHIN FUME HOODS, BEIGE HVAC TAPING LOCATED IN PLENUM AREA, ALL VINYL FLOOR TILE AND MASTIC.

IF ADDITIONAL SUSPECT MATERIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER' S REPRESENTATIVE FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH ADDITIONAL WORK. THE CONTRACTOR SHALL IMMEDIATLY POST NOTICES AND TAKE PRECAUTIONS NECESSARY TO ENSURE THE HEALTH AND SAFETY OF ALL WORKERS, THE STAFF AND THE PUBLIC.



1 **FLOOR PLAN RM 303 ORGANIC CHEMISTRY LAB - DEMO**
SCALE: 1/4" = 1'-0"



2 **FLOOR PLAN RM 303 ADJUNCT FACULTY OFFICES - NEW**
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES

A. CONFIRM WORK AREA IS CLEAN OF ANY ACID WASTE PRIOR TO LEAVING JOB SITE.

REFERENCE SHEET NOTES

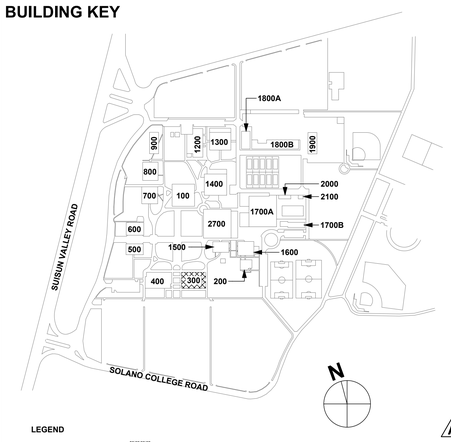
DEMO:

1. DEMO HOT WATER PIPE BACK TO NEW CONNECTION FOR NEW SINK.
2. DEMOLISH LABORATORY GAS BACK TO THE MAIN GAS LINE.
3. DEMO COLD WATER PIPE BACK TO MAIN LINE.
4. DEMO ALL ABOVE GRADE ACID WASTE PIPES. PIPE IS TO BE DEMO'D BENEATH SLAB, CAPPED, AND CONCRETE POURED OVER TOP.

NEW:

20. PROVIDE AND INSTALL SINK.
21. PROVIDE AND INSTALL HOT WATER PIPING ROUTED ABOVE CEILING TO THE SINK.
22. PROVIDE AND INSTALL COLD WATER PIPING ROUTED ABOVE CEILING TO THE SINK.
23. PROVIDE AND INSTALL CONDENSATE DRAIN ROUTED ABOVE CEILING FROM CEILING CASSETTES TO THE ACID WASTE PIPE.
24. PROVIDE AND INSTALL SANITARY SEWER PIPE HORIZONTALLY IN WALL ROUTED FROM SINK TO THE ACID WASTE PIPE. INSTALL PIPE IS SLOPE MINIMUM OF 1/8" PER FOOT.

BUILDING KEY



LEGEND
BUILDINGS IN SCOPE

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PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE DISTRICT

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M094408
MECHANICAL
STATE OF CALIFORNIA

STATE
DSA FILE NUMBER 48-C1
APPL # 02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET
PLUMBING ENLARGED FLOOR PLANS

DATE 04.12.2023
JOB # 2022012 (SOBE 2201690)
SHEET # A AD2 - P4.01

K:\drawings\Aedis\2201690 B300 HVAC Modernization\2201690P4.01.dwg 4/18/2023 3:27 PM Rick Poduo

GENERAL NOTES

1. CONTRACTOR IS RESPONSIBLE TO OBTAIN A COMPLETE SET OF CONTRACT DOCUMENTS, ADDENDA, DRAWINGS, AND SPECIFICATIONS. PRIOR TO SUBMITTING PROPOSAL, CONTRACTOR SHALL EXAMINE ARCHITECTURAL, STRUCTURAL AND MECHANICAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS AND SHALL HAVE VISITED THE CONSTRUCTION SITE. HE/SHE SHALL BE FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH HE/SHE WILL HAVE TO OPERATE AND WHICH WILL IN ANY WAY AFFECT THE WORK UNDER THIS CONTRACT. NO SUBSEQUENT ALLOWANCE WILL BE MADE IN THIS CONNECTION IN BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLIGENCE ON HIS/HER PART. DETERMINE THE SEQUENCE OF CONSTRUCTION THROUGHOUT THE PROJECT, INCLUDING TEMPORARY FACILITIES AND CONNECTIONS REQUIRED FOR THE DURATION OF THE PROJECT.

2. ALL TEMPORARY CONNECTIONS SHALL BE CONSIDERED PART OF THIS CONTRACT AND NO EXTRA CHARGES WILL BE ALLOWED. THIS SHALL INCLUDE MINOR ITEMS OF MATERIAL OR EQUIPMENT NECESSARY TO MEET THE REQUIREMENTS AND INTENT OF THE PROJECT.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONS AND PROPERTY AND SHALL PROVIDE INSURANCE COVERAGE AS NECESSARY FOR LIABILITY, PERSONAL, AND PROPERTY DAMAGE, TO FULLY PROTECT THE OWNER, ARCHITECT, AND ENGINEER FROM ANY AND ALL CLAIMS RESULTING FROM THIS WORK.

4. THE CONTRACTOR SHALL PROVIDE TO THE ARCHITECT A CONSTRUCTION SCHEDULE OF ALL ELECTRICAL WORK. THE CONSTRUCTION SCHEDULE SHALL IDENTIFY ALL SIGNIFICANT MILESTONES WITH COMPLETION DATES.

5. THE CONTRACTOR SHALL MAINTAIN RECORD DRAWINGS AT THE PROJECT SITE INDICATING ALL MODIFICATIONS TO ELECTRICAL SYSTEMS. THE CONTRACTOR SHALL, AT THE CONCLUSION OF THE PROJECT, PROVIDE A SET OF REPRODUCIBLE (AUTOCAD), ACCURATE AND NEAT "AS-BUILT" DRAWINGS ACCEPTABLE TO THE ARCHITECT.

6. THESE DRAWINGS DO NOT REPRESENT THE EXACT LOCATIONS, SIZES OR EXTENT OF UTILITIES ON SITE. CONTRACTOR SHALL TAKE STANDARD PRECAUTIONS FOR WORK IN EXISTING FACILITIES.

7. EXISTING ELECTRICAL WIRING WHICH WILL NOT BE MADE OBSOLETE AND WHICH WILL BE DISTURBED DUE TO CONSTRUCTION CHANGES REQUIRED BY THIS CONTRACT SHALL BE RESTORED TO OPERATING CONDITION, AS REQUIRED AND/OR DIRECTED. WHERE REQUIRED, SHOWN AND/OR DIRECTED, OUTLETS AND CONDUIT RUNS SHALL BE RELOCATED. IN SOME CASES IT MAY BE NECESSARY TO EXTEND CONDUITS AND PULL IN NEW WIRING OR INSTALL JUNCTION BOXES AND SPLICE IN NEW WIRING OR REPLACE OLD WIRING WITH NEW.

8. CERTAIN REMODELING OF ELECTRICAL FACILITIES WILL BE REQUIRED IN THE EXISTING BUILDING. EXISTING CONDUIT RUNS ARE GENERALLY NOT SHOWN, ALTHOUGH A FULL ATTEMPT HAS BEEN MADE TO SHOW SOME EXISTING CONDITIONS, OF WHICH INFORMATION HAS BEEN TAKEN FROM EXISTING RECORD DRAWINGS AND/OR LIMITED FIELD INVESTIGATIONS. THE DRAWINGS SHOWING LOCATION OF EXISTING EQUIPMENT, OUTLETS, FIXTURES, ETC., ARE APPROXIMATE ONLY (CONTRACTOR TO FIELD VERIFY).

9. ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY AND SHALL BE INSTALLED AS PER LISTING OR LABELING (IE. MAXIMUM FUSE SIZE MEANS FUSE PROTECTION IS REQUIRED).

10. ALL ELECTRICAL EQUIPMENT AND INSTALLATION SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
    a. AMERICAN STANDARD ASSOCIATION (ASA)
    b. AMERICAN NATIONAL STANDARD INSTITUTE (ANSI)
    c. AMERICAN SOCIETY OF TESTING MATERIALS (ASTM)
    d. CALIFORNIA CODE OF REGULATIONS TITLE 24 (CCR)
    e. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
    f. INSULATED POWER CABLE ENGINEERS ASSOCIATIONS (IPCEA)
    g. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATIONS (NEMA)
    h. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
    i. ALL LOCAL CODE HAVING JURISDICTION

11. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, INSPECTIONS AND INCIDENTAL COSTS NECESSARY FOR EXECUTION AND COMPLETION OF ELECTRICAL WORK, INCLUDING ALL CHARGES BY STATE, COUNTY AND LOCAL GOVERNMENTAL AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR THE ELECTRICAL UTILITY SYSTEM SHUT-DOWNS AND START-UP. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION REQUIRED WITH OTHER AGENCIES AND UTILITY COMPANIES.

12. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CROSSINGS ON NEW UTILITIES WITH THAT OF EXISTING ON SITE AND IN ADJACENT PROPERTIES. NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS OR DISCREPANCIES FROM THIS PLAN.

13. CONTRACTOR SHALL COORDINATE HIS/HER WORK WITH OTHER TRADE ON SITE. ANY COST TO PERFORM WORK TO ACCOMPLISH SAID COORDINATION WHICH DIFFERS FROM THE WORK AS SHOWN ON THE DRAWINGS SHALL BE INCURRED BY THE CONTRACTOR. ANY DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT DURING BID TIME FOR CLARIFICATIONS. ANY SUCH CONFLICTS NOT CLARIFIED PRIOR TO BID SHALL BE SUBJECT TO THE INTERPRETATION OF THE ARCHITECT/ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

14. COORDINATE WITH OTHER TRADES AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT. PROVIDE POWER AND CONNECTION TO MOTORS AND EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS AS INDICATED ON ELECTRICAL DRAWINGS AND DRAWINGS OF OTHER TRADES. CONTRACTOR SHALL REVIEW DRAWINGS OF OTHER TRADES FOR CONTROL DIAGRAMS, SIZE AND LOCATION OF EQUIPMENT. DISCONNECT SWITCHES, STARTERS, AND CONDUITS FOR CONTROL WIRING FOR MECHANICAL AND PLUMBING EQUIPMENT SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING MANUFACTURER'S SHOP DRAWINGS PRIOR TO ROUGHING IN ALL CONDUITS TO THIS EQUIPMENT.

15. BEFORE ROUGH-IN, VERIFY ALL MOUNTING HEIGHTS AND EXACT LOCATIONS FOR ALL EQUIPMENT, ELECTRICAL CONNECTIONS, STUB-UPS, RECEPTACLES, OUTLETS, CONDUIT RUNS, ETC. WITH ARCHITECT AND OWNER. PLACE DEVICES LOCATED ABOVE COUNTERS, SHELVING, ETC. AND IN BATHROOMS SO AS NOT TO CONFLICT WITH EDGES OF WAINSCOTING, COUNTER SPLASH, SHELVING, ETC. ARCHITECTURAL DRAWINGS SHALL GOVERN. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATIONS OF ELECTRICAL DEVICES

16. MOUNTING HEIGHTS OF ALL CONTROL DEVICES TO BE USED BY OCCUPANT OF THE ROOM OR AREA SHALL BE MOUNTED AT THE FOLLOWING HEIGHTS:
    RECEPTACLES OUTLETS : +18" (TO BOTTOM OF OUTLETS)
    TELEPHONE/TV/DATA OUTLETS : +18" (TO BOTTOM OF OUTLETS)
    LIGHT SWITCHES : +44" (TO HIGHEST OPERABLE PART)
    OUTLETS ABOVE COUNTER : +44" (TO HIGHEST OPERABLE PART)
    MOUNTING HEIGHTS OF ALL DEVICES AND EQUIPMENT ARE FROM FINISHED FLOOR TO LOCATION OF DEVICE AS NOTED. EQUIPMENT INSTALLED IN LOCATIONS NOT APPROVED BY THE ARCHITECT SHALL BE RELOCATED AS DIRECTED BY THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.

17. COORDINATE ALL OUTLET BOX INSTALLATION WITH ARCHITECTURAL WALL FINISH SCHEDULES. SPACE BETWEEN FACEPLATE AND DEVICE BOX SHALL NOT EXCEED 1/8".

18. FOR RENOVATION WORK, THE CONTRACTOR SHALL CONCEAL ALL WORK WHERE POSSIBLE. ALL EXPOSED RACEWAY AND BOXES IN OCCUPIED AREAS OR ON EXTERIOR WALLS SHALL BE PAINTED TO MATCH ADJACENT FINISHES.

19. THE CONTRACTOR SHALL BE HELD FULLY RESPONSIBLE FOR THE PROPER RESTORATION OF ALL EXISTING SURFACES REQUIRING PATCHING, PLASTERING, PAINTING AND/OR OTHER REPAIR DUE TO THE INSTALLATION OF ELECTRICAL WORK UNDER THE TERMS OF THIS SPECIFICATION. CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETC., AS REQUIRED.

20. SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS AND CEILINGS. FURNISH AND INSTALL FIRE RATED BACKBOXES AS REQUIRED, MAINTAINING FIRE RATING OF CEILING OR WALLS WHERE RECESSED ELECTRIC EQUIPMENT SUCH AS LIGHT FIXTURES, SWITCHES, RECEPTACLES, PANEL, ETC. ARE INSTALLED IN RATED WALL OR CEILINGS. PENETRATIONS OF FIRE RATED WALLS, CEILINGS, OR FLOORS SHALL COMPLY WITH CBC CHAPTER 7 (714) REQUIREMENTS. CONDUIT PENETRATIONS THAT ARE NOT STUBBED-OUT INSIDE THE WALL SHALL MEET F AND T RATING. ALL FIRE PROOFING METHODS SHALL BE UL APPROVED.

21. ALL EXTERIOR EQUIPMENT SHALL BE NEMA 3R RATED. ALL WALL PENETRATIONS TO EXTERIOR WALLS SHALL BE SEALED WATER TIGHT.

22. PULLING TAPES: ALL RACEWAY WITHOUT CABLE OR WIRE SHALL BE INSTALLED WITH A MINIMUM 1100 LBS. STRENGTH TEST POLYESTER PULLING TAPE. PULLING TAPES SHALL BE DETECTABLE MULE-TAPE WITH SEQUENTIAL FOOTAGE MARKING.

23. RUN NO MORE THAN 3 CURRENT CARRYING CONDUCTORS IN ANY WIREWAY UNLESS DE-RATING IS APPROVED BY ENGINEER OR SHOWN ON DRAWINGS.

24. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER, #10 AWG MINIMUM, RATED FOR 600V, THHN/THWN, 75 DEGREE CELSIUS. ALL CONDUCTORS SHALL BE STRANDED, SOFT DRAWN ANNEALED COPPER WIRE 98% CONDUCTIVITY, BEARING THE UL LABEL. SYSTEM VOLTAGE SHALL BE IDENTIFIED AS TO VOLTAGE AND PHASE CONNECTIONS BY MEANS OF COLOR IMPREGNATED INSULATION OR APPROVED COLORED MARKING TAPE.

25. WHERE MULTI-HOMERUNS ARE INDICATED ON DRAWINGS INDICATING THE SAME CIRCUIT NUMBER, PROVIDE A JUNCTION BOX ABOVE THE ACCESSIBLE CEILING AND ROUTE ONE SET OF WIRES TO THE CIRCUIT BREAKER.

26. REFER TO THE SINGLE LINE DIAGRAM FOR THE CONDUIT AND CONDUCTOR SIZES HOMERUN TO ELECTRICAL PANELS. CONDUIT RUNS MAY NOT BE SHOWN ON DRAWINGS, BUT ARE PART OF THIS CONTRACT.

27. ALL CONDUIT RUNS INCLUDING STRAIGHT FEEDER AND BRANCH CIRCUIT SHALL BE PROVIDED WITH SUFFICIENT PULL BOXES OR JUNCTION BOXES TO LIMIT THE MAXIMUM LENGTH OF ANY SINGLE CABLE PULL TO 100 FEET. PULL BOXES SHALL BE SIZED PER CODE OR AS INDICATED ON DRAWINGS. LOCATIONS SHALL BE DETERMINED IN THE FIELD OR AS INDICATED ON THE DRAWINGS.

28. FINAL CONNECTIONS TO ALL EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS, AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIAL AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.

29. DO NOT COMBINE DIFFERENT SYSTEM VOLTAGES IN SAME CONDUIT (EG., 120/208V VS. 277/480V), UNLESS APPROVED BY ENGINEER OR SHOWN ON DRAWINGS.

30. ELECTRICAL SYSTEMS SHALL BE INSTALLED FOR FINAL INSPECTIONS. PROVIDE NEUTRAL TEST AND PROOF OF TORQUE DURING FINAL INSPECTION FOR ALL UNITS. FINAL TERMINATIONS OF CONDUCTORS TO ELECTRICAL EQUIPMENT AND DEVICES SHALL BE TORQUE WRENCH TIGHTENED TO THE MANUFACTURER'S RECOMMENDED SPECIFICATION, NO EXCEPTION.

31. CIRCUIT BREAKER TERMINALS IN SWITCHBOARDS AND LOAD CENTER SHALL BE UL LISTED AND APPROVED FOR USE WITH COPPER 75 DEGREE CELSIUS CONDUCTORS.

32. SIZES OF BREAKERS, SWITCHES, FUSES AND FEEDERS ARE BASED ON DESIGNED EQUIPMENT SIZES. THESE SIZES SHALL BE ADJUSTED TO SATISFY REQUIREMENTS OF ACTUAL INSTALLED OR SUBSTITUTE EQUIPMENT. UP SIZING OR DOWNSIZING OF FEEDERS SHALL BE PROVIDED WITHOUT ADDITIONAL COST TO THE OWNER.

33. AS REQUIRED ALL OVERSIZED FEEDERS THAT WERE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP SHALL BE PROVIDED WITH ADAPTER LUGS OR SPLICE BOX. ADAPTER LUGS SHALL BE PROVIDED IF SIZE IS AVAILABLE. OTHERWISE PROVIDE CABLE SPLICES IN THE SPLICE BOX TO REDUCE CABLES TO THE MAXIMUM SIZE THAT THE BREAKER LUGS CAN ACCOMMODATE.

34. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAW-CUTTING, TRENCHING, BACKFILLING, COMPACTION AND PATCHING OF CONCRETE AND ASPHALT AS REQUIRED TO COMPLETE WORK. USE EXTREME CAUTION WHEN TRENCHING NEAR EXISTING UNDERGROUND UTILITY LINES. CONTRACTOR SHALL PROVIDE ALL REQUIRED CUTTING, PATCHING, PAINTING, AND REPAIRS NECESSARY TO RESTORE DAMAGED SURFACES TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS EXISTING AT THE START OF WORK.

35. ALL ELECTRICAL EQUIPMENT SHALL BE BRACED OR ANCHORED TO RESIST HORIZONTAL FORCE ACTING IN ANY DIRECTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF ASCE7.

36. ALL INTERIOR AND ABOVE GRADE EXTERIOR CONDUIT INSTALLATION SHALL BE RIGID GALVANIZED STEEL, UNLESS EXCEPTED BY NOTE 37 BELOW.

37. ELECTRICAL METALLIC TUBING (EMT) MAY BE USED IN THE FOLLOWING CONDITIONS: INTERIOR APPLICATIONS, SMALLER THAN 2" TRADE SIZE DIAMETER AND INSTALLED EIGHT (8) FEET FROM FINISHED FLOOR OR HIGHER, OR INTERIOR APPLICATIONS, SMALLER THAN 2" TRADE SIZE DIAMETER AND ENTERING A PANEL FROM ABOVE.

38. CONNECTIONS TO VIBRATING EQUIPMENT (MOTOR, TRANSFORMER ENCLOSURE, ETC.) AND SEISMIC SEPARATIONS SHALL BE PROVIDED WITH LIQUID-TIGHT FLEXIBLE STEEL CONDUIT WITH WATERTIGHT CONNECTORS. MAXIMUM LENGTH OF CONDUIT SHALL BE SIX FEET, UNLESS OTHERWISE NOTED.

39. POLYVINYL CHLORIDE (PVC) SCHEDULE 40 MAY BE INSTALLED BENEATH SLAB AND UNDERGROUND INSTALLATION. INSTALL PVC COATED RIGID STEEL CONDUIT FOR TRANSITION FROM UNDERGROUND TO ABOVE GRADE INSTALLATION.

40. CONTRACTOR SHALL PROVIDE TERMINATIONS FOR ALL DATA/VOICE CABLES INDICATED AT OUTLET LOCATIONS INDICATED ON DRAWINGS.

41. CONTRACTOR SHALL PROVIDE AND INSTALL ACCESS PANELS IN NON-ACCESSIBLE CEILINGS WHERE REQUIRED TO ACCESS ELECTRICAL EQUIPMENT IN CEILING SPACE. ACCESS DOORS SHALL HAVE FIRE RATING EQUAL TO THE CEILING ASSEMBLY IN WHICH THEY ARE INSTALLED.

42. ALL FIRE LIFE SAFETY EQUIPMENT, SUCH AS FIRE ALARM CONTROL PANEL AND REMOTE POWER SUPPLIES SHALL BE PROVIDED WITH DEDICATED CIRCUITS. IDENTIFY CIRCUIT DESIGNATION AND PROVIDE PERMANENT LABELING, "FIRE ALARM CIRCUIT" ON ELECTRICAL PANEL. PROVIDE LOCKABLE CIRCUIT BREAKER.

43. CONTROL CONDUIT FOR ENERGY/BUILDING MANAGEMENT SYSTEM (E/BMS) SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.

44. ROUTE CONDUIT PARALLEL AND PERPENDICULAR TO WALLS AND ADJACENT PIPING. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND TO PRESENT A NEAT APPEARANCE.

45. WHEN A DISCREPANCY IN QUANTITY OR SIZE OF CONDUIT, WIRE, EQUIPMENT, CIRCUIT BREAKERS, ETC., ARISES ON THE DRAWINGS OR SPECIFICATIONS, CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL REQUIRED BY THE MOST STRINGENT CONDITIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS TO PROVIDE A COMPLETE AND OPERABLE SYSTEM, OR AS DIRECTED BY ENGINEER.

46. FOR SMALL AC MOTORS NOT HAVING BUILT-IN THERMAL OVERLOAD PROTECTION, PROVIDE MANUAL MOTOR STARTERS WITH OVERLOAD HEATER ELEMENTS SIZED PER MANUFACTURER'S RECOMMENDATION. FOR SMALL AC MOTORS WITH BUILT-IN THERMAL OVERLOAD PROTECTION, PROVIDE A HORSEPOWER RATED TOGGLE DISCONNECT SWITCH.

47. DISCONNECT SAFETY SWITCHES SHALL BE HEAVY DUTY AND BE RATED FOR THE NUMBER OF POLES, VOLTAGE, CURRENT AND HORSEPOWER RATING AS REQUIRED. PROVIDE FUSE PROTECTION BASED ON THE MOTOR NAMEPLATE RATINGS.

48. PROVIDE PERMANENT IDENTIFICATION (NAMEPLATES) FOR ALL ELECTRICAL PANELS, SWITCHBOARDS, MOTOR CONTROL CENTERS, DISCONNECT SWITCHES, TRANSFORMERS, TERMINAL CABINETS, ETC.

49. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO VERIFY TYPE OF CEILING SYSTEMS AND TO FURNISH APPROVED LIGHTING FIXTURES OF THE TYPE REQUIRED FOR MOUNTING IN SUBJECT CEILING. PROVIDE ALL NECESSARY MOUNTING KIT/HARDWARE TO PROVIDE A COMPLETE WORKING LIGHTING SYSTEM.

50. ALL FINAL ELECTRICAL CONNECTIONS TO OWNER FURNISHED EQUIPMENT SHALL BE MADE BY THE ELECTRICAL CONTRACTOR.

51. ALL SPLICES AND TERMINALS SHALL BE COMPRESSION TYPE, OF SEAMLESS PURE COPPER, TIN PLATED, LONG BARREL, INSPECTION WINDOW, TERMINALS WITH TWO-HOLE PAD (WITH NEMA DRILLING). CLEAN ALL SURFACES AND INSTALL WITH OXIDE INHIBITING COMPOUND BURNDY PENETROX-E OR EQUAL. APPLY COMPOUND BETWEEN BUS BAR AND LUG PAD AND BETWEEN CONDUCTOR AND LUG BARREL. INSTALL COMPRESSION CONNECTORS WITH A FULLY CIRCUMFERENTIAL COMPRESSION DIE BURNDY HYPRESS OR EQUAL.

52. LABEL ALL CONDUIT WHERE IT BEGINS, AND WHERE IT TERMINATES INTO A BOX, PANEL, DEVICE, LOAD, OR DISCONNECT. CONDUIT SHALL BE LABELED EVERY 30 FEET OR LESS. CONDUIT SHALL BE LABELED WHERE IT PENETRATES ANY WALL OR FLOOR. LABEL SHALL BE PERMANENT PRINTED LABELS (DESCRIBING SOURCE, CIRCUIT, AND LOAD) LEGIBLE FROM FLOOR WHERE POSSIBLE (STANDING POSITION).

53. CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS, EQUIPMENT OR INSTALLATION METHODS.

54. PROVIDE ARC-FLASH HAZARD WARNING LABELS ON ALL AFFECTED ELECTRICAL EQUIPMENT, INCLUDING SWITCHBOARDS, PANEL BOARDS, INDUSTRIAL CONTROL PANELS, METER SOCKET ENCLOSURES, AND MOTOR CONTROL CENTERS. MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS. LABEL SHALL BE FACTORY PRE-PRINTED OR MACHINE-PRINTED SELF-ADHESIVE VINYL MATERIAL; UV, CHEMICAL, WATER, HEAT AND ABRASION RESISTANT; PRODUCED USING MATERIALS RECOGNIZED BY UL 969. MINIMUM SIZE: 3.5 BY 5 INCHES.

55. UNLESS OTHERWISE NOTED, ARRANGE, PAY FOR, COORDINATE AND PROVIDE ALL PERMITS NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.

56. ALL WORK IS <N> UNLESS OTHERWISE NOTED.

57. ELECTRICAL CONDUCTORS SERVING EQUIPMENT SUPPLIED BY POWER CONVERSION EQUIPMENT AS PART OF A VARIABLE FREQUENCY DRIVE (VFD) SYSTEM AND/OR A SERVO DRIVE SYSTEM SHALL HAVE THERMOSET INSULATION TYPE XHHW, OR XHHW-2

DEMOLITION NOTES

1. REMOVE EXISTING EQUIPMENT IN CONFLICT WITH NEW CONDITIONS. REMOVE ALL WIRE NOT IN SERVICE AND FROM ABANDONED RACEWAYS. PROTECT EXISTING CIRCUITING PASSING THROUGH DEMOLITION AREAS. EXTEND AND/OR RELOCATE AS NECESSARY.

2. EXISTING SYSTEMS SHALL REMAIN ON AT ALL TIMES. CONTRACTOR MUST REQUEST THE SHUTDOWN DATE 30 DAYS IN ADVANCE PRIOR TO ANY EQUIPMENT SHUTDOWN. THERE SHALL BE A MAXIMUM OF TWO SHUTDOWNS OF 8 HOURS EACH. INFORM THE CITY IF DOWNTIME IS TO EXCEED THIS TIME AND/OR IF ADDITIONAL SHUTDOWNS WILL BE NECESSARY.

3. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO DISCONNECT AND REMOVE ALL EXISTING ELECTRICAL EQUIPMENT AFFECTED BY THE PROJECT. THIS INCLUDES REROUTING OR THE EXTENSION OF EXISTING CONDUIT AND FEEDER WHERE NECESSARY TO MAINTAIN OPERATIONAL OF ANY EXISTING EQUIPMENT.

4. CIRCUIT NUMBERS AND CONDUIT HOMERUNS SHOWN ON THESE DRAWINGS WERE TAKEN FROM EXISTING RECORD DRAWINGS. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO VERIFY EXISTING CIRCUITING AND CONDUIT HOMERUNS. ADJUST CIRCUIT NUMBERS ACCORDING TO THE ACTUAL CONDITIONS.

5. WHERE EXISTING CONDUIT IS TO BE ABANDONED OR DEMOLISHED, THE CONDUIT SHALL BE REMOVED IF IT IS EXPOSED, IN A CRAWL SPACE OR IN AN ACCESSIBLE CEILING. ABANDONED OR DEMOLISHED CONDUIT FEEDS UP THROUGH THE FLOOR SHALL BE CUT OFF AND PLUGGED FLUSH WITH THE FLOOR.

6. ALL ELECTRICAL EQUIPMENT INCLUDING LIGHT, RECEPTACLE, DATA, FIRE ALARM, ETC., THAT ARE TO BE REMOVED, SHALL BE REMOVED COMPLETELY, INCLUDING CONDUIT AND WIRING BACK TO THE LAST DEVICE REMAINING IN SERVICE, OR SOURCE.

7. EXISTING CIRCUITS WHICH ARE REMOVED AND NOT REUSED SHALL BE IDENTIFIED ON THE PANEL SCHEDULE AS "SPARE".

8. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OWNER PRIOR TO REMOVAL OF EXISTING ELECTRICAL EQUIPMENT AND TURN OVER REMOVED EQUIPMENT THAT THE OWNER REQUESTS IN AN "AS-FOUND" CONDITION.

9. ALL DEMOLITION WORK SHOWN, IF ANY, WAS PREPARED FOR THE CONVENIENCE OF THE CONTRACTOR. NO REPRESENTATION HAS BEEN MADE THAT ALL ITEMS THAT MAY REQUIRE DEMOLITION HAVE BEEN SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CAREFULLY EXAMINE THE SITE AND THE CONTRACT DOCUMENTS AND TO PERFORM ALL DEMOLITION AND RECONSTRUCTION WHICH MAY BE REQUIRED FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK.

10. WHEN CALLED FOR, OR SCOPE OF WORK REQUIRES ELECTRICAL EQUIPMENT TO BE REMOVED, ALL CONDUIT, WIRE, BOXES, HANGERS, ETC. SHALL BE REMOVED COMPLETELY. ALL OPENINGS SHALL BE PATCHED, SEALED AND PAINTED TO MATCH THE ADJACENT FINISH.

SHUTDOWN NOTES

1. POWER INTERRUPTION OF THE ELECTRICAL SWITCHBOARDS WILL AFFECT:

   THE ENTIRE EMERGENCY DISTRIBUTION SYSTEM IN THE BUILDING. LOADS VARY FROM IDF ROOMS, OFFICES, UTILITY ROOMS, AC UNITS, ELEVATORS, CAFÉ, EXHIBITS, ETC.

2. CONTRACTOR SHALL COORDINATE SHUTDOWN AND RECONNECTION WITH THE DISTRICT PROJECT MANAGER PRIOR TO BEGINNING WORK. ALL ELECTRICAL CONNECTIONS REQUIRING AN OUTAGE SHALL BE MADE DURING AN APPROVED TIME PERIOD, AT THE CONVENIENCE OF THE CITY.

3. DETAILED METHOD OF PROCEDURE (DMOP) SHALL BE SUBMITTED, REVIEWED AND APPROVED BEFORE THE REQUEST FOR SHUTDOWN.

4. CONTRACTOR SHALL REQUEST THE SHUTDOWN DATE 60 DAYS IN ADVANCE PRIOR TO ANY EQUIPMENT SHUTDOWN. DURING THE SHUTDOWN, SYSTEMS OUTSIDE THE SCOPE OF WORK SHALL REMAIN ON AT ALL TIMES. THERE SHALL BE A MAXIMUM OF ONE SHUTDOWN:
   a. 4 HOUR FOR THE BUILDING.
   b. INFORM THE CITY IF DOWNTIME IS TO EXCEED THIS TIME AND/OR IF ADDITIONAL SHUTDOWNS WILL BE NECESSARY.

5. ANY SHUTDOWNS MUST BE PERFORMED ON THE WEEKENDS; SUNDAY EARLY MORNING CONFIRM EXACT TIME WITH THE CITY. POWER MUST BE RESTORED BY 5:30 AM.

6. PRIOR TO DISCONNECTION OF ELECTRICAL EQUIPMENT AND/OR CABLES, CONTRACTOR SHALL VERIFY AND TEST EQUIPMENT FOR FUNCTIONALITY AND NOTIFY CITY OF ABNORMALITIES.

7. CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING CITY AND OSHA SAFETY STANDARDS APPLICABLE TO THIS PROJECT.

8. CONTRACTOR SHALL PROVIDE FIRE WATCH FOR THE ENTIRE DURATION OF THE SHUTDOWN.

CONSTRUCTION PHOTOGRAPHIC RECORDS

THE CONTRACTOR SHALL PROVIDE PRECONSTRUCTION DIGITAL PHOTOGRAPHS AND VIDEO RECORDINGS PRIOR TO COMMENCEMENT OF WORK ON THE SITE. BEFORE CONSTRUCTION MAY START, CONTRACTOR SHALL DOCUMENT ANY EXISTING CONDITIONS THAT ARE NOT COVERED BY THE CONTRACT DOCUMENTS (DAMAGED CONCRETE, WALLS, LANDSCAPE, ETC.). FAILURE TO DOCUMENT EXISTING DAMAGE WILL RESULT IN CONTRACTOR REPAIRS TO SURFACE TO MATCH ADJACENT AFTER CONSTRUCTION ACTIVITIES. ADDITIONAL PRECONSTRUCTION PHOTOGRAPHS/VIDEOS SHALL BE TAKEN AT LOCATIONS TO BE DESIGNATED BY THE OWNER'S REPRESENTATIVE.

CONTRACTOR SHALL MAKE A VIDEO RECORDING OF ALL PROPOSED ROUTINGS FOR INFRASTRUCTURE WORK, NOTING CONDITIONS OF EXISTING SURFACES AND ADJACENT IMPROVEMENTS. ONE COPY OF COMPLETE VIDEO SHALL BE TRANSMITTED TO THE OWNER'S REPRESENTATIVE.

CONSTRUCTION PHOTOGRAPHS

THE CONTRACTOR SHALL PROVIDE CONSTRUCTION PHOTOGRAPHS SHOWING THE PROGRESS OF THE WORK AND AS MAY BE DIRECTED BY THE OWNER'S REPRESENTATIVE. PHOTOGRAPHS/VIDEOS SHALL BE FORMATTED, IDENTIFIED, AND DELIVERED AS DESCRIBED ABOVE FOR DIGITAL PHOTOS AND VIDEOS. STARTING ONE MONTH AFTER THE DATE OF THE PRECONSTRUCTION PHOTOGRAPHS AND CONTINUING AS LONG AS THE WORK IS IN PROGRESS, APPROXIMATELY 40 MONTHLY PHOTOGRAPHS SHALL BE TAKEN, CATALOGED AND CROSS REFERENCED TO DRAWINGS/PLANS.

ANY WORK TO BE CONCEALED (BURIED, BEHIND WALLS, ABOVE CEILING, BELOW SLAB, ETC.) SHALL BE PHOTO DOCUMENTED AFTER ANY TESTING AND INSPECTION AND PRIOR TO CONCEALING TO CLEARLY INDICATE THE WORK. DOCUMENT ON PLANS THE LOCATION AND ORIENTATION FOR EACH PHOTO DOCUMENTING CONCEALED WORK.

FOR FINAL COMPLETION, DOCUMENT ALL PUNCH LIST ITEM COMPLETION BY PHOTOGRAPH OR VIDEO.

DELIVER CONSTRUCTION PHOTOGRAPHS AND VIDEOS WITHIN 10 DAYS OF CREATION. ALL PHOTOS AND VIDEOS SHALL BE OF SUFFICIENT QUALITY TO CLEARLY DEPICT WORK.

SYMBOLS

- EXTENT OF DEMOLITION
- NEW TO EXISTING CONNECTION
- BRANCH CIRCUIT WIRING IN CONDUIT EXPOSED ON ROOF OR BUILDING EXTERIOR.
- BRANCH CIRCUIT WIRING IN CONDUIT CONCEALED UNDER FLOOR OR UNDERGROUND
- BRANCH CIRCUIT HOME RUN TO PANEL. CONCEALED IN CEILING SPACE OR WHERE POSSIBLE.
- CIRCUIT BREAKER
- REFERENCE SHEET NOTE.
- LOAD IN KVA
- FEEDER SIZE
- DETAIL TAG. REFER TO DETAIL 1 ON SHEET E4.01.
- ELECTRICAL PANEL
- PULLBOX
- CONDUIT STUBOUT
- TRANSFORMER
- JUNCTION BOX
- FUSE
- LIGHTING CIRCUIT DESIGNATION
- AUDIO – WALL MOUNTED
- SPEAKER – CEILING MOUNTED
- POWER CORD – CEILING MOUNTED
- PTZ DOME CCTV CAMERA
- FIRE ALARM HORN – CEILING MOUNTED
- STROBE – CEILING MOUNTED
- PENDANT LIGHT – CEILING MOUNTED
- WIRELESS ACCESS POINT
- SECURITY CAMERA
- SWITCH, HORSE POWER RATED, COMMERCIAL TYPE
- RACK WIREWAY
- WALL-MOUNTED DUPLEX RECEPTACLE 20A, 125V, 3WG, (2) NEMA 10-20R, ±18" UON
- WALL-MOUNTED DUPLEX RECEPTACLE MOUNTED AT 44" A.F.F. 20A, 125V, 3WG, NEMA 10-20R, UON
- GFI — DUPLEX GFI RECEPTACLE, MOUNTED AT 4" A.F.F., GROUND FAULT INTERRUPTER
- CR — CARD READER, MOUNT ON J-BOX AND PROVIDE MIN ¾" CONDUIT FROM ACCESS CONTROL PANEL
- GFI/WP — DUPLEX GFI RECEPTACLE, WEATHER RESISTANT , GROUND FAULT INTERRUPTER WITH WEATHER PROOF WHILE-IN-USE METALLIC COVER
- (2) RJ-45 DATA OUTLETS W/FACEPLATE

SCHOOL EQUIPMENT ANCHORAGE

M/E/P COMPONENT ANCHORAGE NOTE:

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON-THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC SECTION 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTION EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTION 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP ☐ MD ☐ PP ☐ E ☒ — OPTION 1: DETAIL ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP ☐ MD ☐ PP ☐ E ☐ — OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM #) # ______.

ABBREVIATIONS

A	AMPS
AC	ALTERNATING CURRENT
AF	AMP FRAME
AFF	ABOVE FINISH FLOOR
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CLG	CEILING
CKT	CIRCUIT
C.O.	CONDUIT ONLY
DN	DOWN
DSW	FUSED DISCONNECT SWITCH
<E>	EXISTING
ELEC	ELECTRICAL
EM	EMERGENCY
EMH	ELECTRICAL MAN-HOLE
FL	FLOOR
FT	FEET
FS	FIRE SHUTTER
G	GROUNDING CONDUCTOR
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
KVA	KILOVOLT AMPS
LTG	LIGHTING
LTS	LIGHTS
MSB	MAIN SWITCHBOARD
NTS	NOT TO SCALE
P	POWER
PNL	PANEL
PRKLTS	PARKING LIGHTS
PWR	POWER
<R>	REMOVE
<RRN>	REMOVE AND REPLACE WITH NEW
REC	RECEPTACLE
RPS	REMOTE POWER SUPPLY
S.E.D.	SEE ELECTRICAL DRAWINGS
SLD	SINGLE LINE DIAGRAM
SWBD	SWITCHBOARD
T	TRIP
TB	TICKET BOOTH
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
V	VOLTS
W	WIRE, WATTS
WAP	WIRELESS ACCESS POINT
WP	WEATHERPROOF
XFMR	TRANSFORMER

APPLICABLE CODES

UNLESS OTHERWISE INDICATED OR SPECIFIED, PERFORM THE WORK IN CONFORMANCE WITH THE LATEST EDITIONS OF ALL APPLICABLE REGULATORY REQUIREMENTS, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

1. CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24): 2022
2. CALIFORNIA BUILDING CODE (PART 2, TITLE 24): 2018 IBC WITH 2019 CA AMENDMENTS
3. CALIFORNIA ELECTRICAL CODE (PART 3, TITLE 24): 2017 NEC WITH 2019 CA AMENDMENTS
4. CALIFORNIA MECHANICAL CODE (PART 4, TITLE 24): 2018 UMC WITH 2019 CA AMENDMENTS
5. CALIFORNIA PLUMBING CODE (PART 5, TITLE 24) 2018 UPC WITH 2019 CA AMENDMENTS
6. CALIFORNIA ENERGY CODE (PART 6, TITLE 24): 2019
7. CALIFORNIA HISTORICAL BUILDING CODE, (PART 8, TITLE 24): 2019
8. CALIFORNIA FIRE CODE (PART 9, TITLE 24): 2018 IFC WITH 2019 CA AMENDMENTS
9. CALIFORNIA EXISTING BUILDING CODE (PART 10, TITLE 24): 2019 (2018 INTERNATIONAL EXISTING BUILDING CODE WITH 2019 CA AMENDMENTS)
10. CALIFORNIA GREEN BUILDING STANDARDS CODE OR CAL GREEN (PART 11, TITLE 24): 2019
11. CALIFORNIA REFERENCED STANDARDS CODE (PART 12, TITLE 24): 2019
12. PUBLIC SAFETY (CCR TITLE 19), STATE FIRE MARSHAL: CURRENT REVISION
13. NFPA 72, NATIONAL FIRE ALARM CODE, 2016 EDITION

SUMMARY OF WORK

1. PROVIDE ELECTRICAL CONNECTIONS IN SUPPORT OF MECHANICAL AND CONTROLS EQUIPMENT INCLUDING BUT NOT LIMITED TO VFD, DRINKING FOUNTAIN, ETC.
2. DEMOLISH EXISTING RESTROOM LIGHT FIXTURES AND CONTROL.
3. FURNISH AND INSTALL NEW LIGHT FIXTURES AND CONTROLS.
4. FURNISH AND INSTALL POWER FOR FIRE ALARM SYSTEM.

ELECTRICAL DRAWING INDEX

SHT NO.	DESCRIPTION
AD2 – E0.00	ELECTRICAL GENERAL NOTES, SYMBOLS & ABBREVIATIONS
AD2 – E0.01	ELECTRICAL TITLE 24
AD2 – ED2.01	ELECTRICAL FLOOR PLAN LEVEL 1 – DEMO
AD2 – E2.01	ELECTRICAL FLOOR PLAN LEVEL 1 – NEW
AD2 – ED2.02	ELECTRICAL ROOF PLAN – DEMO
AD2 – E2.02	ELECTRICAL ROOF PLAN – NEW
AD2 – E4.01	ELECTRICAL ENLARGED FLOOR PLANS – POWER
AD2 – E4.02	ELECTRICAL ENLARGED FLOOR PLANS – LIGHTING
E5.01	ELECTRICAL DETAILS
AD2 – E6.01	ELECTRICAL SCHEDULES

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PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE
SOLANO COMMUNITY COLLEGE DISTRICT

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National Strength. Local Action.

STAMP
REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — MECHANICAL

STATE
DSA FILE NUMBER 48-C1
APPL # 02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET
ELECTRICAL GENERAL NOTES, SYMBOLS & ABBREVIATIONS

DATE 04.12.2023
JOB # 2022012 (SOBE 2201690)
SHEET # AD2 - E0.00

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 7/19) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-E

This document is used to demonstrate compliance with requirements in §110.9, §110.12(c), §130.0, §130.1, §140.6, and §141.0(b)2 for indoor lighting scopes using the prescriptive path.

Project Name:	Solano CCD BLDG 300	Report Page:	Page 1 of 6
Project Address:	4000 Suisun Valley Rd, Fairfield, CA 94534	Date Prepared:	10/6/2022

A. GENERAL INFORMATION

01	Project Location (city)	Fairfield	04	Total Conditioned Floor Area (ft²)	20,575
02	Climate Zone	9	05	Total Unconditioned Floor Area (ft²)	7,403
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	

☐ Office ☐ Retail ☐ Warehouse ☐ Hotel/Motel ☑ School ☐ Support Areas
☐ Parking Garage ☐ High-Rise Residential ☐ Relocatable ☐ Healthcare ☐ Other (write in):

B. PROJECT SCOPE

Table Instructions: Include any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6 or §141.0(b)2 for alterations. WARNING: Changing the Calculation Method in this table will result in the deletion of data previously input. If you need to change the calculation method, please open a new form or use "Save As".

Scope of Work	Conditioned Spaces		Unconditioned Spaces	
01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☐ New Lighting System				
☑ Altered Lighting System	Area Category	104		
Total Area of Work (ft²):	104			

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per §140.6(b):	Allowed Lighting Power per §140.6(b) (Watts)						Adjusted Lighting Power per §140.6(a) (Watts)				Compliance Results
	01	02	03	04		05	06	07		08	09
	Complete Building §140.6(c)1 (See Table I)	Area Category §140.6(c)2 (See Table I)	Area Category Additional §140.6(c)2G (+) (See Table J)	Tailored §140.6(c)3 (+) (See Table K)	=	Total Allowed (Watts)	≥ Total Designed (Watts) (See Table F)	Adjustments: PAF Control Credits §140.6(a)2 (-) (See Table P)	=	Total Adjusted (Watts) *Includes Adjustments	05 Must be ≥ 08 §140.6
Conditioned:		63.85			=	63.85	≥ 56		=	56	COMPLIES
Unconditioned:					=		≥		=		

Table Continued

Controls Compliance (See Table H for Details)	COMPLIES
Rated Power Reduction Compliance (See Table Q for Details)	Not Applicable

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

Selections made in Table U have been changed by the permit applicant. See Table E. Additional Remarks for permit applicant's explanation.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. INDOOR LIGHTING FIXTURE SCHEDULE

Table Instructions: Include all permanent designed lighting and all portable lighting in offices.

Designed Wattage: Conditioned Spaces

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per luminaire[2]	How Wattage is determined	Total number luminaires	Exempt per §140.6(a)3	Design Watts	Field Inspector: Pass	Fail
A	HP-4-4FT	☐	☐	28.4	Mfr. Spec[2]	1	☐	28.4	☐	☐
A1	HP-4-2FT	☐	☐	14.2	Mfr. Spec[2]	1	☐	14.2	☐	☐
B	CEILING MOUNTED	☐	☐	13.4	Mfr. Spec[2]	1	☐	13.4	☐	☐
							Total Designed Watts CONDITIONED SPACES:	56		

[1] *FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per §140.6(a)4B is adjusted to be 75% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.*
[2] *Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c) Wattage used must be the maximum rated for the luminaire, not the lamp.*

G. MODULAR LIGHTING SYSTEMS

This Section Does Not Apply

H. INDOOR LIGHTING CONTROLS (Not Including PAFs)

*Table Instructions: Please include lighting controls for conditioned and unconditioned spaces in this table. When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Building Level Controls

01	02	03	
Mandatory Demand Response §110.12(c)	Shut-Off Controls §130.1(c)	Field Inspector: Pass	Fail
Not Required - Installing as PAF	See Area/Space Level Controls	☐	☐

Area Level Controls

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Area Controls §130.1(a)	Multi-Level Controls §130.1(b)	Shut-Off Controls §130.1(c)	Primary/Skylit Daylighting §130.1(d)	Secondary Daylighting §140.6(d)	Interlocked Systems §140.6(a)1	Field Inspector: Pass	Fail
RESTROOM	Restroom	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
STORAGE	All Other Space Types	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.
EX: Conference 1: Primary/Skylight Daylighting: Exempt because less than 120 watts of general lighting; EXCEPTION 1 to §130.1(d)2

13
Plan Sheet Showing Daylit Zones:

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Table Instructions: Complete the table for each area complying using the Complete Building or Area Category Methods per §140.6(b). Indicate if additional lighting power allowances per §140.6(c) or adjustments per §140.6(a) are being used.

Conditioned Spaces

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowances / Adjustment: Area Category	PAF
RESTROOM	Restroom	0.65	89	57.85	☐	☐
STORAGE	All Other Space Types	0.4	15	6	☐	☐
		TOTAL:	104	63.85	See Tables J or P for detail	

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowances / Adjustment: Area Category	PAF

J. ADDITIONAL LIGHTING ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM

This Section Does Not Apply

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE

This Section Does Not Apply

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY

This Section Does Not Apply

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING

This Section Does Not Apply

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS

This Section Does Not Apply

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This Section Does Not Apply

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))

This Section Does Not Apply

Q. RATED POWER REDUCTION COMPLIANCE FOR ALTERATIONS

This Section Does Not Apply

R. 80% LIGHTING POWER FOR ALTERATIONS - CONTROLS EXCEPTIONS

This Section Does Not Apply

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)

This Section Does Not Apply

T. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://ww2.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRC/

YES	NO	Form/Title	Field Inspector: Pass	Fail
◉	○	NRCI-LTI-01-E - Must be submitted for all buildings	☐	☐
○	◉	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐	☐

U. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

YES	NO	Form/Title	Field Inspector: Pass	Fail
◉	○	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐	☐
○	◉	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐	☐
○	◉	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐	☐
○	◉	NRCA-LTI-05-A - Must be submitted for institutional tuning power adjustment factor (PAF).	☐	☐
○	◉	NRCA-ENV-03-F - Must be submitted for daylighting design power adjustment factors (PAF).	☐	☐

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

Documentation Author Name:	George Harbieh	Documentation Author Signature:	
Company:	Salas O Brien	Signature Date:	10/6/2022
Address:	305 S 11th St	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	San Jose/CA/95112	Phone:	408-684-3792

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. **The information provided on this Certificate of Compliance is true and correct.**
2. **I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)**
3. **The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.**
4. **The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.**
5. **I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.**

Responsible Designer Name:	Hugh King	Responsible Designer Signature:	
Company :	Salas O Brien	Date Signed:	10/6/2022
Address:	305 S 11th St	License:	E20539
City/State/Zip:	San Jose/CA/95112	Phone:	408-899-3115

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fax: (408)-300-5121

PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE DISTRICT

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WWW.SALASOBRIEN.COM
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STAMP
REGISTERED PROFESSIONAL ENGINEER — HUGH L. KING — No. E20539 — ELECTRICAL — STATE OF CALIFORNIA

STATE
DSA FILE NUMBER 48-C1
APPL # 02-120607

REVISIONS

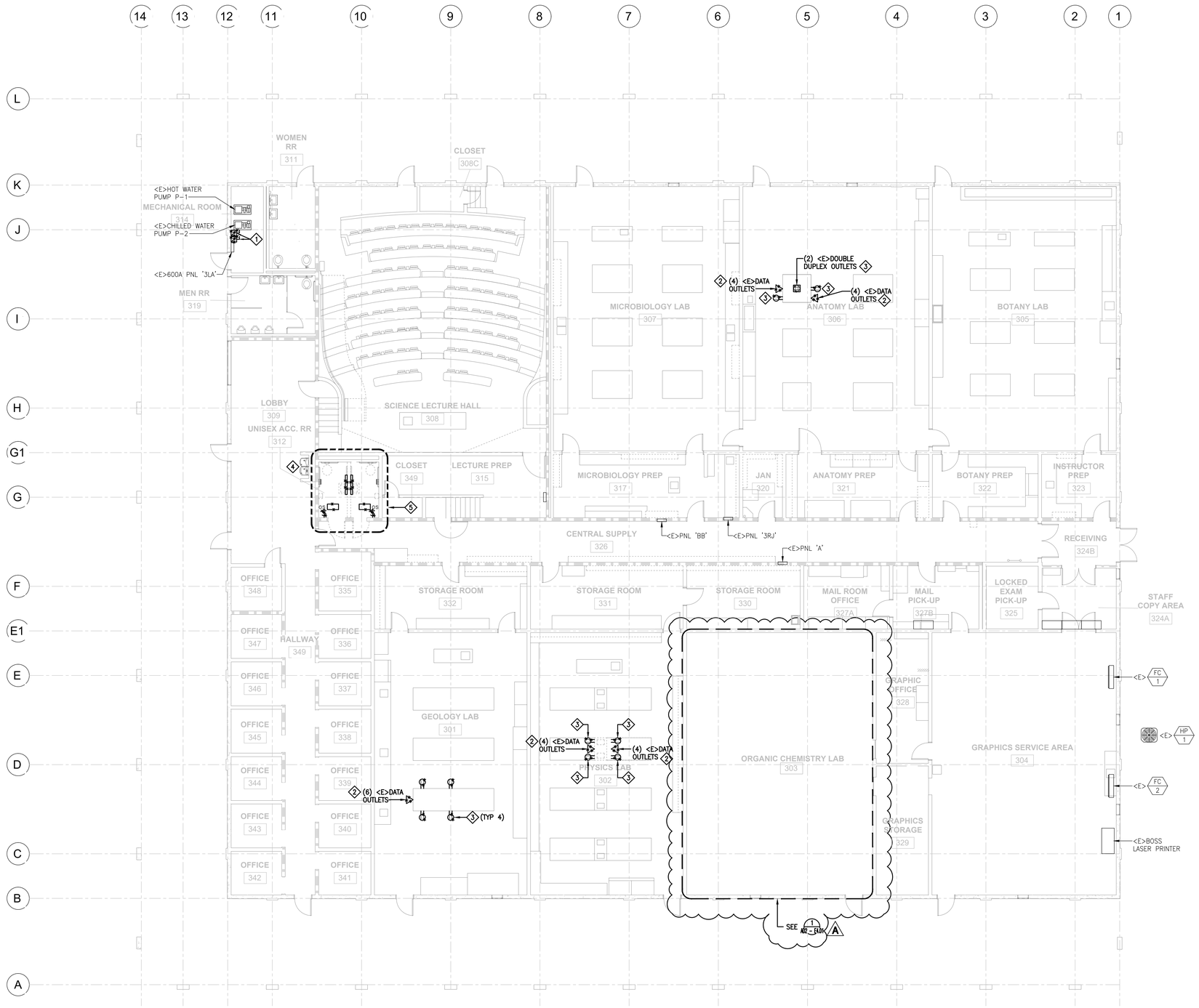
No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET
ELECTRICAL TITLE 24

DATE 04.12.2023
JOB # 2022012 (SOBE 2201690)
SHEET # AD2 - E0.01



1 **FLOOR PLAN LEVEL 1 - DEMO**
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

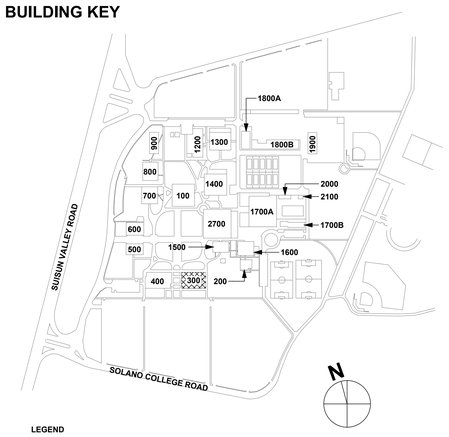
A. PREPARE A SPECIAL METHOD OF PROCEDURE AND COORDINATE THE SHUTDOWN OF ANY DEVICE WITH FACILITIES ENGINEERS. SHUTDOWN MUST BE PERFORMED AFTER HOURS, OR APPROVED TIME BY THE OWNER.

B. DEVICE SHOWN AS EXISTING SHALL REMAIN CONNECTED UNLESS OTHERWISE NOTED. WIRING DEVICES THAT MAY BE AFFECTED BY DEMOLITION AND NEW WORK SHALL BE RECONNECTED.

REFERENCE SHEET NOTES

1. ELECTRICAL CONTRACTOR TO FIELD VERIFY AND REMOVE ALL ELECTRICAL CONNECTIONS TO PUMPS P-1 AND P-2 INCLUDING BUT NOT LIMITED TO: STARTERS, DISCONNECTS CONDUIT AND WIRES BACK TO PANEL '3 LA' . EXITING CIRCUIT BREAKERS TO BE REUSED.
2. EXISTING DATA OUTLET TO BE REMOVED.
3. EXISTING POWER OUTLET TO BE REMOVED.
4. EXISTING DRINKING FOUNTAIN TO BE REPLACED. DISCONNECT AND PROTECT POWER CONNECTION DURING CONSTRUCTION. SEE ARCHITECTURAL DRAWINGS.
5. DEMOLISH LIGHTING FIXTURES AND ASSOCIATED WIRING AND CONTROLS. EXISTING LIGHTING CIRCUIT TO BE MODIFIED AND USED TO FEED NEW LIGHTING FIXTURES, SEE NEW WORK.

BUILDING KEY



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HUGH L. KING
No. E20639
ELECTRICAL
STATE OF CALIFORNIA

STATE
DSA FILE NUMBER 48-C1
APPL # 02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

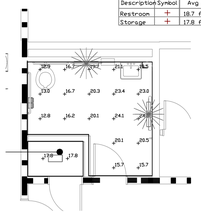
SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET
ELECTRICAL FLOOR PLAN LEVEL 1 - DEMO

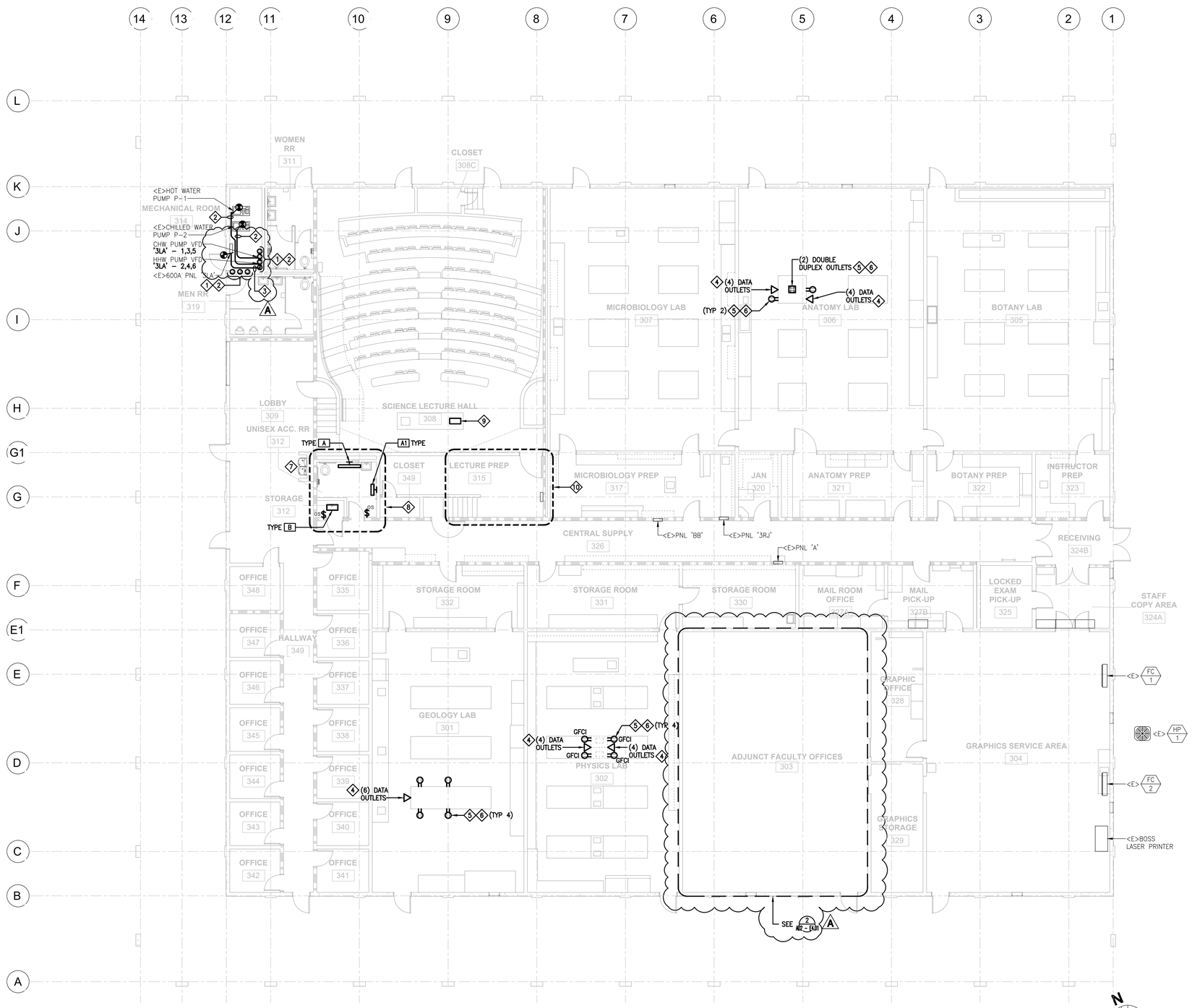
DATE 04.12.2023
JOB # 2022012 (SOBE 2201690)
SHEET # AD2 - ED2.01

K:\drawings\Aedis\2201690 B300 HVAC Modernization\2201690ED2.01.dwg 4/18/2023 3:27 PM Rick Podua

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Restroom	+	18.7 fc	24.3 fc	12.8 fc	1.9:1	1.5:1
Storage	+	17.8 fc	17.8 fc	17.8 fc	1.0:1	1.0:1



2 PARTIAL LIGHTING PLAN - PHOTOMETRIC
SCALE: 3/16" = 1'-0"



1 FLOOR PLAN LEVEL 1 - NEW
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

A. CONTRACTOR RESPONSIBLE FOR MAINTAINING CONNECTIVITY TO ALL EXISTING SYSTEM AFFECTED BY NEW WORK, INCLUDING INTERCEPTING AND EXTENDING EXISTING CIRCUITS AS NEEDED. CONTRACTOR RESPONSIBLE FOR TERMINATIONS AND RETESTING OF SYSTEMS.

B. ROUTE 3/4"C. - (2)#10 + #10GND MIN. FOR EACH CIRCUIT U.O.N.

C. DEVICE LOCATION SHOW IS DIAGRAMMATIC, FIELD VERIFY EXACT LOCATION AND COUNT, ADJUST LOCATION +/- 10' AT NO ADDITIONAL COST.

D. FIRE SEAL ALL RATED PENETRATIONS.

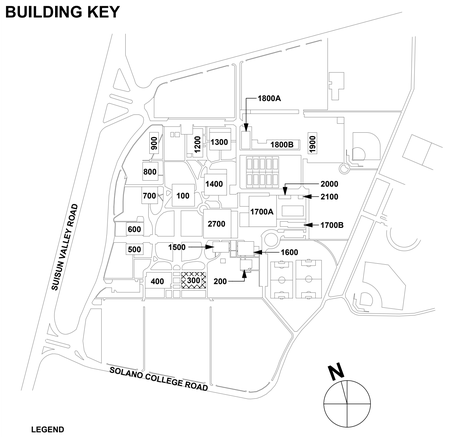
E. CONTRACTOR SHALL BE RESPONSIBLE FOR RETURNING ANY SURFACE DISTURBED BY CONSTRUCTION TO THE CONDITION AND FINISH OF THE ADJACENT SURFACES.

F. LABEL ALL DATA AND POWER RECEPTACLES WITH SOURCE LOCATION AND UNIQUE ID. REFER TO DETAILS FOR REQUIREMENTS.

REFERENCE SHEET NOTES

1. PROVIDE POWER 120V FROM PANEL 'A' TO J BOX FOR MECHANICAL EQUIPMENT AND CONTROLS. COORDINATE WITH MECHANICAL ON EXACT LOCATION.
2. ROUTE 3/4"C. - (3)#10 + #10 GND.
3. ROUTE 1"C. - 2 SETS OF (3)#10 + #10 GND.
4. PROVIDE NEW DATA RECEPTACLE. TEST TERMINATIONS AND RECONNECT TO EXITING WIRES TO NEW ADA LAB TABLE, MAKE ALL NECESSARY ADJUSTMENTS, FINAL LOCATION SHALL BE COORDINATED WITH OWNER.
5. PROVIDE NEW, TEST TERMINATIONS AND RECONNECT TO EXITING WIRES TO NEW ADA LAB TABLE, MAKE ALL NECESSARY ADJUSTMENTS, FINAL LOCATION SHALL BE COORDINATED WITH OWNER.
6. PROVIDE NEW FACE PLATE, COORDINATE COLOR WITH OWNER.
7. MAKE ALL NECESSARY ADJUSTMENTS AND RECONNECT POWER TO NEW DRINKING FOUNTAIN.
8. INSTALL NEW LIGHTING FIXTURES. INTERCEPT EXISTING CIRCUIT. EXTEND WIRING TO NEW FIXTURES AND CONTROLS. REFER TO LIGHTING FIXTURE SCHEDULE AND CONTROL.
9. ASSISTIVE LISTENING DEVICE TRANSMITTER MODEL NO. LT-800-072-01 DISTRICT PROVIDED. COORDINATE LOCATION WITH OWNER. CONTRACTOR SHALL PROVIDE ALL NECESSARY CONNECTIONS AND PROGRAMMING FOR A FULLY OPERATIONAL SYSTEM SUCH AS BUT NOT LIMITED TO:120VAC, ANTENNA, SOUND SYSTEM. CONTACT LISTEN TECHNOLOGIES WWW.LISTENTECH.COM (1 801 233 8992) FOR ADDITIONAL DETAILS.
10. FIELD VERIFY AND REUSE EXISTING POWER CONNECTION TO BMS CONTROLLER. SEE M2.01 DRAWINGS.

BUILDING KEY



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DSA FILE NUMBER	48-C1
APPL #	02-120607

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A	Addendum 2	04/12/23

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DSA SUB	10.28.2022
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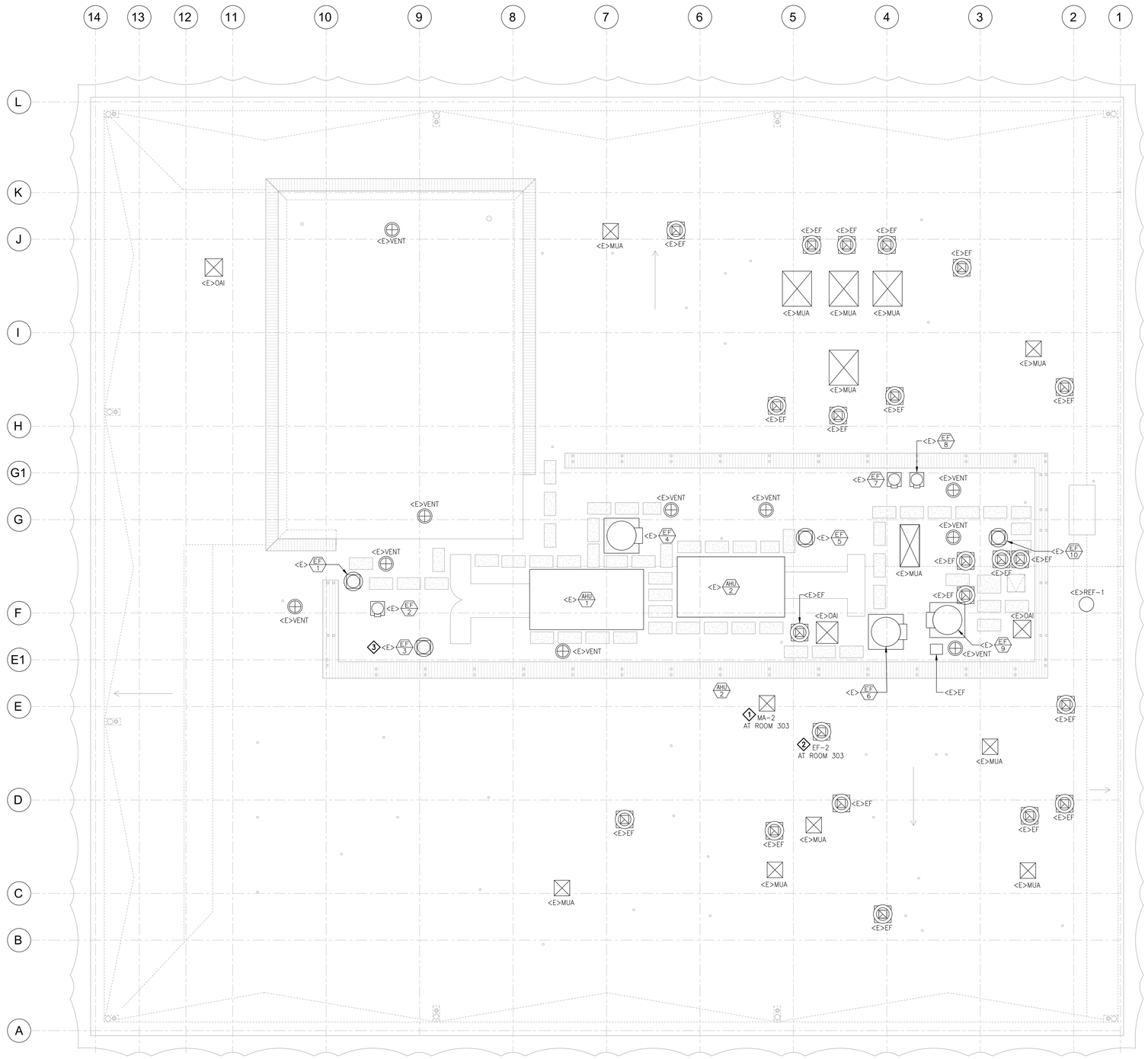
SHEET
ELECTRICAL FLOOR PLAN LEVEL 1 - NEW

DATE 04.12.2023

JOB # 2022012 (SOBE 2201690)

SHEET #
AD2 - E2.01



1 **ROOF PLAN - DEMO**
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

A. CONTRACTOR TO VERIFY POWER TO EXHAUST FANS THAT SERVE CLASSROOM SPACES.

B. CONTROLS CONTRACTOR SHALL PROVIDE LOW VOLTAGE CONTROL WIRING AND TRANSFORMER PANELS.

C. ELECTRICAL CONTRACTOR SHALL PROVIDE 120V POWER AND CONDUITS FOR CONTROLLERS.

D. HYDRONIC PIPING TO REMAIN UNCHANGED. ONLY PUMPS AND CONTROL VALVES ARE TO BE REPLACED.

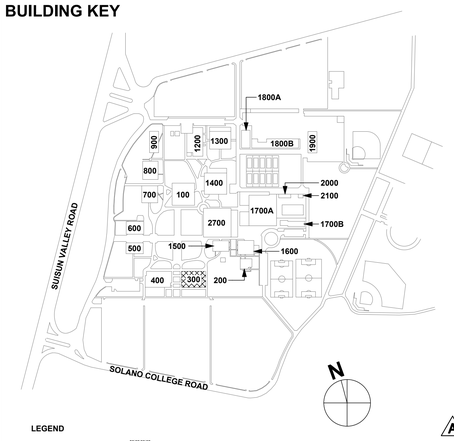
E. NO MODIFICATIONS TO THE DUCTWORK FOR THIS PROJECT.

F. CONTRACTOR SHALL MEASURE AIRFLOW AT ALL OPERABLE AHU'S AND EF'S PRIOR TO PERFORMING ANY WORK. THE SYSTEM AIRFLOWS SHALL BE KEPT THE SAME FOR THE CONTROLS UPGRADE.

REFERENCE SHEET NOTES

1. EXISTING MAKE UP AIR UNIT TO BE DISCONNECTED AND ABANDONED PER MECHANICAL PLANS. CAP CONDUIT ON ROOF AND SEAL WEATHERPROOF. REMOVE CONDUCTORS BACK TO EXISTING DISCONNECT START/STOP SWITCHES AND PANEL CIRCUIT BREAKER.
2. EXISTING EXHAUST FAN 2 TO BE DISCONNECTED AND ABANDONED PER MECHANICAL PLANS. CAP CONDUIT ON ROOF AND SEAL WEATHERPROOF. REMOVE CONDUCTORS BACK TO EXISTING DISCONNECT START/STOP SWITCHES AND PANEL CIRCUIT BREAKER.
3. EXISTING EXHAUST FAN 3 MOTOR TO BE REPLACED PER MECHANICAL PLANS. REFER TO NEW WORK FOR ADDITIONAL INFORMATION.

BUILDING KEY



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DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET

ELECTRICAL ROOF PLAN - DEMO

DATE 04.12.2023

JOB # 2022012 (SOBE 2201690)

SHEET # A AD2 - ED2.02

1 **ROOF PLAN - NEW**
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

A. CONTRACTOR TO VERIFY POWER TO EXHAUST FANS THAT SERVE CLASSROOM SPACES.

B. CONTROLS CONTRACTOR SHALL PROVIDE LOW VOLTAGE CONTROL WIRING AND TRANSFORMER PANELS.

C. ELECTRICAL CONTRACTOR SHALL PROVIDE 120V POWER AND CONDUITS FOR CONTROLLERS.

D. HYDRONIC PIPING TO REMAIN UNCHANGED. ONLY PUMPS AND CONTROL VALVES ARE TO BE REPLACED.

E. NO MODIFICATIONS TO THE DUCTWORK FOR THIS PROJECT.

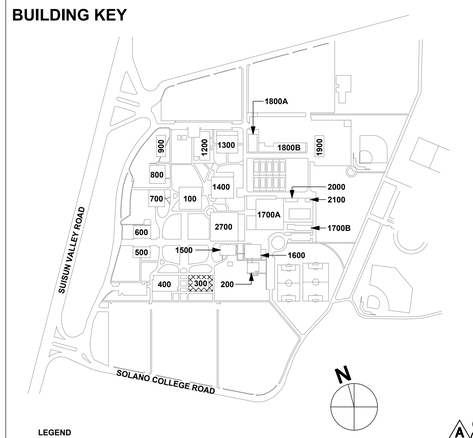
F. CONTRACTOR SHALL MEASURE AIRFLOW AT ALL OPERABLE AHU'S AND EF'S PRIOR TO PERFORMING ANY WORK. THE SYSTEM AIRFLOWS SHALL BE KEPT THE SAME FOR THE CONTROLS UPGRADE.

REFERENCE SHEET NOTES

1. FURNISH AND INSTALL NEW EXHAUST FAN MOTOR PER MECHANICAL PLANS. ELECTRICAL CONTRACTOR TO COORDINATE WITH MECHANICAL CONTRACTOR FOR DISCONNECT SWITCH INSTALLATION.

2. FURNISH AND INSTALL NEW 50A, SINGLE POLE FUSED HEAVY DUTY DISCONNECT. HOMERUN 3/4"C. - (2)#6 + #6GND TO PANEL 'A' IN HALLWAY.

BUILDING KEY



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SHEET

ELECTRICAL ROOF PLAN - NEW

DATE 04.12.2023

JOB # 2022012 (SOBE 2201690)

SHEET # A AD2 - E2.02

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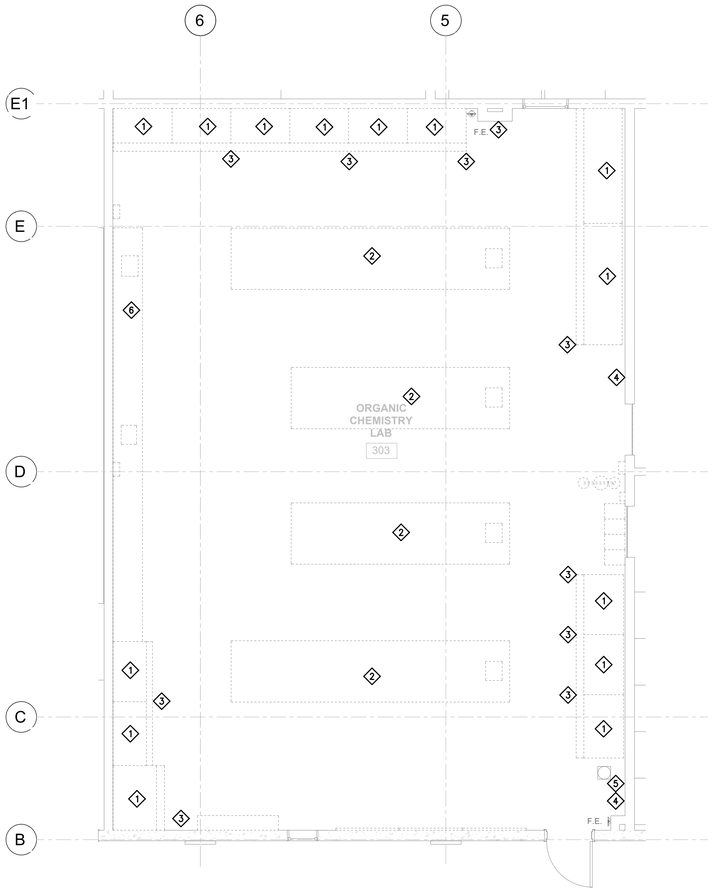
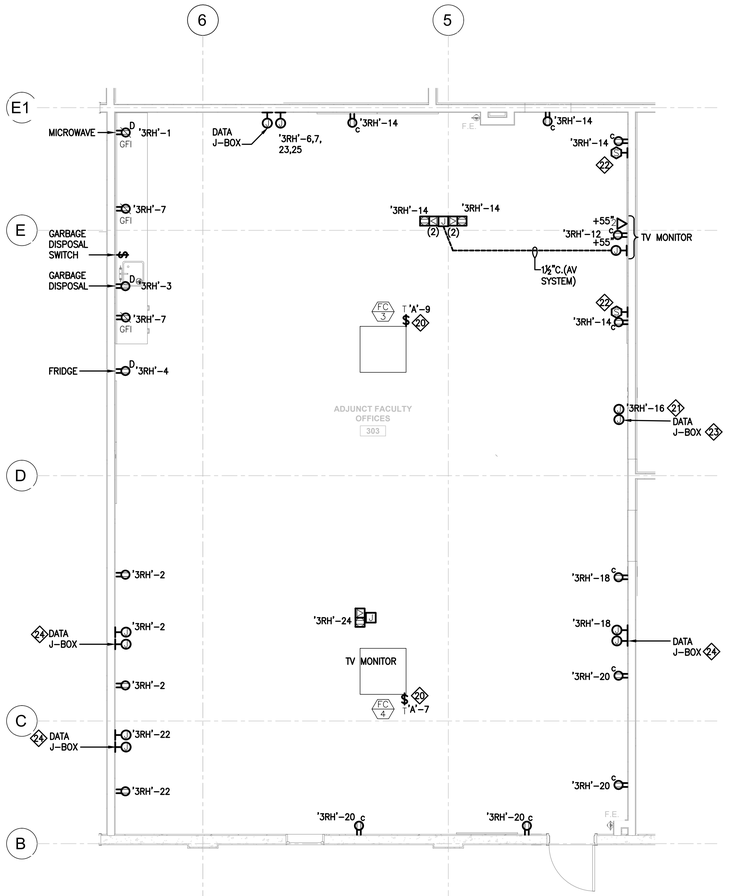


1 **FLOOR PLAN RM 303 ORGANIC CHEMISTRY LABS - DEMO**
SCALE: 1/4" = 1'-0"



2 **FLOOR PLAN RM 303 ADJUNCT FACULTY OFFICES - NEW**
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES

A. CONTRACTOR RESPONSIBLE FOR MAINTAINING CONNECTIVITY TO ALL EXISTING SYSTEM AFFECTED BY NEW WORK, INCLUDING INTERCEPTING AND EXTENDING EXISTING CIRCUITS AS NEEDED. CONTRACTOR RESPONSIBLE FOR TERMINATIONS AND RETESTING OF SYSTEMS.

B. ROUTE 3/4"C. - (2)#10 + #10GND MIN. FOR EACH CIRCUIT U.O.N.

C. DEVICE LOCATION SHOW IS DIAGRAMMATIC, FIELD VERIFY EXACT LOCATION AND COUNT, ADJUST LOCATION +/- 10' AT NO ADDITIONAL COST.

D. FIRE SEAL ALL RATED PENETRATIONS.

E. CONTRACTOR SHALL BE RESPONSIBLE FOR RETURNING ANY SURFACE DISTURBED BY CONSTRUCTION TO THE CONDITION AND FINISH OF THE ADJACENT SURFACES.

F. LABEL ALL DATA AND POWER RECEPTACLES WITH SOURCE LOCATION AND UNIQUE ID. REFER TO DETAILS FOR REQUIREMENTS.

REFERENCE SHEET NOTES

DEMO :

1. EXISTING FUME HOOD TO BE DEMOLISHED. DISCONNECT EXISTING BRANCH CIRCUITS FEEDING THE HOOD AND REMOVE CONDUIT AND WIRES BACK TO SOURCE. TURN OFF CIRCUIT BREAKER. REFER TO PANEL SCHEDULE FOR NEW LOADS ON EXISTING CIRCUIT BREAKERS. UPDATE PANEL SCHEDULE. REFER TO NEW WORK FOR ADDITIONAL INFORMATION.

2. EXISTING LAB DESK TO BE REMOVED. DISCONNECT RECEPTACLES AND DATA OUTLETS IN PEDESTALS ON TOP OF DESK AND REMOVE BACK TO CONDUIT STUB UP IN FLOOR. REMOVE WIRES BACK TO SOURCE. CAP EXISTING CONDUIT IN UNDERGROUND TRENCH. TURN OFF CIRCUIT BREAKER. REFER TO PANEL SCHEDULE FOR NEW LOADS ON EXISTING CIRCUIT BREAKERS. UPDATE PANEL SCHEDULE. REMOVE DATA CABLES BACK TO EXISTING IDF IN LAB PREP ROOM 315. PATCH PANEL PORTS TO BE REUSED WITH NEW CAT6 DATA CABLES. REFER TO NEW WORK FOR ADDITIONAL INFORMATION.

3. DISCONNECT AND REMOVE EXISTING DISCONNECT SWITCH AND START/STOP SWITCHES THAT ARE IN PLACE FOR MAKE UP AIR #2 AND EF-2 THAT ARE BEING REMOVED PER MECHANICAL PLANS. REMOVE CONDUIT AND WIRES BACK TO SOURCE AND TURN OFF CIRCUIT BREAKER. REFER TO PANEL SCHEDULES FOR NEW LOADS ON EXISTING CIRCUIT. REFER TO NEW WORK FOR ADDITIONAL INFORMATION.

4. EXISTING ELECTRICAL RECEPTACLE TO REMAIN. REMOVE EXISTING COVER PLATE FOR NEW INSTALLATION OF NEW GYPBOARD PER ARCHITECTURAL PLANS. PROVIDE AN EXTENSION TO MATCH WALL THICKNESS. CLEAN STAINLESS COVER PLATE AND RE-INSTALL.

5. EXISTING EMERGENCY STOP, PANIC EXHAUST FAN PUSH BUTTON TO BE DISCONNECTED AND REMOVED. REMOVE WIRES BACK TO SOURCE.

6. EXISTING UNDER COUNTER RECEPTACLE TO BE DEMOLISHED. REMOVE CONDUITS AND WIRES BACK TO SOURCE.

7. EXISTING HORN STROBE TO BE REMOVED. DISCONNECT HORN STROBE. COIL HORN STROBE CIRCUIT AT JUNCTION BOX FOR RECONNECTION TO NEW FIRE ALARM EQUIPMENT.

NEW :

20. SWITCH TO BE PROVIDED BY MECHANICAL CONTRACTOR.

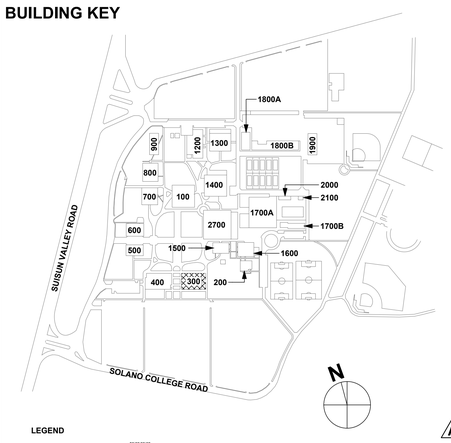
21. FURNISH AND INSTALL 2 J-BOXES ONE FOR POWER AND ONE FOR DATA.

22. RELOCATE AND REINSTALL EXISTING WALL MOUNTED SPEAKERS. CONTRACTOR TO COORDINATE WITH IT ON SPEAKER SYSTEM LOCATION. CONTRACTOR TO PROVIDE ALL NECESSARY WIRING TO ENSURE A FULL WORKING A/V SYSTEM WITH CONNECTION TO SPEAKERS, TVS AND CONTROLS.

23. DATA OUTLETS SHALL HAVE (2) PORTS. HOMERUN (2) CAT6 CABLES TO MDF LOCATED IN ROOM 328.

24. (2) DATA OUTLETS. HOMERUN (8) CAT6 CABLES TO MDF LOCATED IN ROOM 328.

BUILDING KEY



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DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

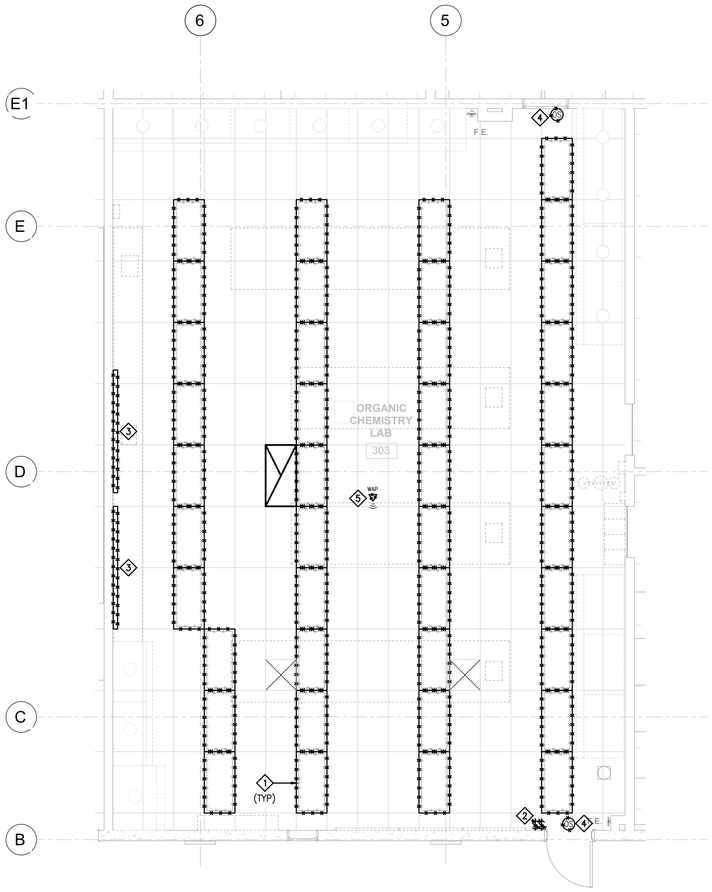
SHEET

ELECTRICAL ENLARGED FLOOR PLANS - POWER

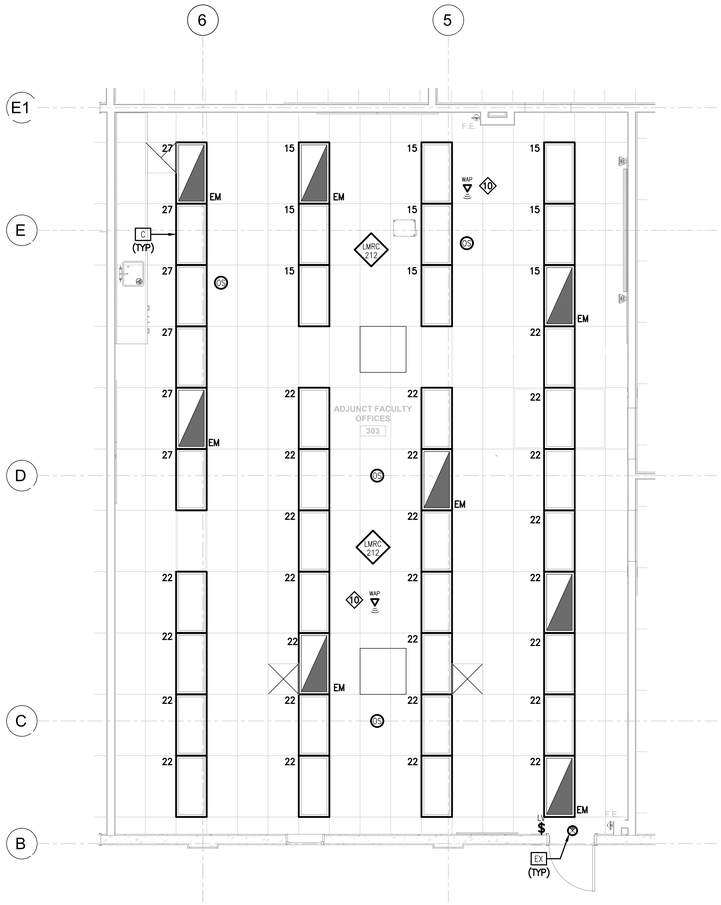
DATE 04.12.2023

JOB # 2022012 (SOBE 2201690)

SHEET # A AD2 - E4.01



1 **FLOOR PLAN RM 303 ADJUNCTS FACULTY OFFICES - DEMO**
SCALE: 1/4" = 1'-0"



2 **FLOOR PLAN RM 303 ADJUNCTS FACULTY OFFICES - NEW**
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES

A. CONTRACTOR RESPONSIBLE FOR MAINTAINING CONNECTIVITY TO ALL EXISTING SYSTEM AFFECTED BY NEW WORK, INCLUDING INTERCEPTING AND EXTENDING EXISTING CIRCUITS AS NEEDED. CONTRACTOR RESPONSIBLE FOR TERMINATIONS AND RETESTING OF SYSTEMS.

B. ROUTE 3/4"C. - (2)#10 + #10GND MIN. FOR EACH CIRCUIT U.O.N.

C. DEVICE LOCATION SHOW IS DIAGRAMMATIC, FIELD VERIFY EXACT LOCATION AND COUNT, ADJUST LOCATION +/- 10' AT NO ADDITIONAL COST.

D. FIRE SEAL ALL RATED PENETRATIONS.

E. CONTRACTOR SHALL BE RESPONSIBLE FOR RETURNING ANY SURFACE DISTURBED BY CONSTRUCTION TO THE CONDITION AND FINISH OF THE ADJACENT SURFACES.

F. LABEL ALL DATA AND POWER RECEPTACLES WITH SOURCE LOCATION AND UNIQUE ID. REFER TO DETAILS FOR REQUIREMENTS.

G. CONTRACTOR SHALL BE RESPONSIBLE IN INTERCEPTING AND EXTENDING NEW LIGHTING CONTROL SYSTEM TO EXISTING LIGHTING CONTROL PANEL. CONTRACTOR TO PROVIDE ANY NECESSARY WIRES, CONDUITS AND PARTS IN ORDER TO HAVE A FULLY FUNCTIONAL LIGHTING CONTROL SYSTEM.

REFERENCE SHEET NOTES

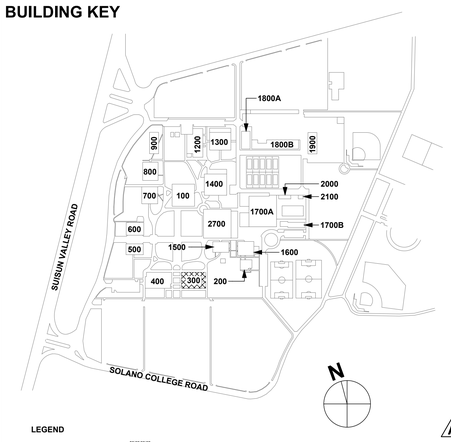
DEMO :

1. EXISTING LIGHT FIXTURE TO BE REPLACED WITH NEW LED LIGHT FIXTURE. DISCONNECT, REMOVE AND DISPOSE EXISTING LIGHT FIXTURE. COIL LIGHTING CIRCUIT AT JUNCTUION BOX FOR RECONNECTION TO NEW LIGHT FIXTURES. REFER TO NEW WORK FOR ADDITIONAL INFORMATION. CONTRACTOR SHALL DISPOSE OF LAMPS AND BALLAST PER LOCAL AND STATE REGULATIONS. BALLAST MAY CONTAIN PCB'S.
2. EXISTING LIGHT SWITCH TO BE REMOVED. DISCONNECT AND REMOVE CONDUITS AND WIRES.
3. EXISTING SCREEN TO BE REMOVED.
4. EXISTING OCCUPANCY SENSOR TO BE REMOVED. DISCONNECT AND REMOVE WIRES BACK TO SOURCE.
5. EXISTING ACCESS POINT TO BE REMOVED. DISCONNECT AND REMOVE WIRES AND CONDUIT BACK TO SOURCE.

NEW:

10. FURNISH AND INSTALL WALL MOUNTED WIRELESS ACCESS POINT. ROUTE (2) CAT6 CABLES FROM MDF.

BUILDING KEY



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STAMP
REGISTERED PROFESSIONAL ENGINEER
HUGH L. KING
No. E20639
ELECTRICAL
STATE OF CALIFORNIA

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET
ELECTRICAL ENLARGED FLOOR PLANS - LIGHTING

DATE 04.12.2023
JOB # 2022012 (SOBE 2201690)
SHEET # A AD2 - E4.02

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FIXTURE SCHEDULE

FIXTURE SCHEDULE

TYPE	SYMBOL	MANUFACTURER	CATALOG NO.	VOLTAGE	MAX VA	LAMPING	MOUNTING	TYPE
A		FINELITTE	HP-4-WM-ID-48-S-S-840-ASY-R-DAO-R-SSA-277-SC-FC-10%-MB	MVOLT	28.4	LED	WALL MOUNT	HP-4 / 3514 LUMEN / 28.4W / 40K / 80CRI /4 FEET / 13.6LBS.
A1		FINELITTE	HP-4-WM-ID-24-S-S-840-ASY-R-DAO-R-SSA-277-SC-FC-10%-MB BATTERY KIT: LQD10W	MVOLT	14.2	LED	WALL MOUNT	HP-4 / 1702 LUMEN / 20W / 40K / 80CRI / 9LBS.
B		LITHONIA	FEM-L24-2000LM-IMAFL-WD-MVOLT-GZ10-40K-80CRI MOUNTING KIT: FEMSMB	MVOLT	13.4	LED	SURFACE MOUNT	2000 LUMEN / 13.4W / 40K / 80CRI / 0-10V DIMMING / 11.9LBS.
C		ARCHITECTURAL LIGHTING	WHSPR-LCTR-QS-2X4-4000LM-40K-80CRI-MIN10-0-10V-MVOLT-SWC BATTERY PACK: E10WLCP	MVOLT	34	LED	RECESSED	4000 LUMEN / 34W / 40K / 80CRI / 0-10V DIMMING /
EX		LITHONIA	EDGR-1-G-EL-SD (IN LAB ROOM USE EDG TYPE)	120	1	LED	SURFACE	EXIT LIGHT: SELF DIAGNOSTICS, GREEN LETTERING, 90 MINUTE BATTERY BACK UP

CONTROL SCHEDULE

SYMBOL	MODEL #	DESCRIPTION
CEILING MOUNT OCCUPANCY SENSOR		
OS	LMDC-100	DUAL TECHNOLOGY CEILING SENSOR
ROOM CONTROLLER		
LMRC 212	LMRC-212	ON/OFF 0-10V DIMMING ROOM CONTROLLER WITH 2 RELAYS
CONFIGURATION TOOLS, NETWORKING, INTERFACES AND ACCESSORIES		
LMBC	LMBC-300	NETWORK BRIDGE
PERSONAL CONTROLS		
$LV	LMDM-101	DIMMING WALL SWITCH
$OS	DSW-301-W	DUAL TECHNOLOGY PIR WALL SWITCH OCCUPANCY SENSOR

NOTES:

1. PRIOR TO ORDERING AND INSTALLING FIXTURES, CONFIRM AND COORDINATE THE FOLLOWING WITH THE OWNER/ARCHITECT:
   a. EXACT MOUNTING ELEVATIONS.
   b. EXACT LOCATION OF FIXTURES; ADJUST AS NECESSARY.
   c. COLOR AND FINISHES.
   d. VOLTAGES.
2. ADHERE TO MANUFACTURER'S WIRING INSTRUCTIONS.
3. BASIS OF DESIGN OF CONTROL SYSTEM IS WATTSTOPPER.
4. CONTRACTOR IS RESPONSIBLE FOR LOW VOLTAGE WIRING (0-10 DIMMING)
5. ALL LIGHT FIXTURES ARE LESS THAN 20LBS. REFER TO SCHEDULE FOR EXACT WEIGHT.

PANEL SCHEDULE

<E>PANEL 'A'
LOCATION HALLWAY
AIC RATING 22 KAIC
VOLTAGE 120/ 208 V
TYPE
FED FROM
PHASE 3
WIRE 4

	DESCRIPTION	BRKR P	BRKR T	LCL	KVA LOAD A	KVA LOAD B	KVA LOAD C	KVA LOAD A	KVA LOAD B	KVA LOAD C	LCL	BRKR P	BRKR T	DESCRIPTION	
1	-----	-	-	X 0.4	1.7			2.5		0.6	X	-	-	-----	2
3	<E> EQUIPMENT 41 RM 304	3	30	X 0.4		1.7			2.5	0.6	X	2	30	POWER POLE EQUIPMENT 50	4
5	-----	-	-	X 0.4			1.7		0.6	0.2	X	1	20	PP RECPT EQ. 30	6
7	-----	-	-	X 0.0	0.1			0.1		0.0	X	-	-	-----	8
9	<E>EF-1	3	20	X 0.0		0.1			0.1	0.0	X	3	20	MA-1 RM 302	10
11	-----	-	-	X 0.0			0.1			0.1 0.0	X	-	-	-----	12
13	**FC-4**	**1**	**20**	**X 0.0**	**0.1**					**0.0**		-	-	-----	14
15	**FC-3**	**1**	**20**	**X 0.0**		**0.1**				**0.0**		**3**	**20**	**SPARE**	16
17	**HP-2**	**1**	**50**	**X 1.8**			**7.0**			**0.0**		-	-	-----	18
19	-----	-	-	X 0.0	0.1			0.1		0.0	X	-	-	-----	20
21	EF-8 RM 307	3	20	X 0.0		0.1			0.1	0.0	X	3	20	MA-6 RM 307	22
23	-----	-	-	X 0.0			0.1			0.1 0.0	X	-	-	-----	24
25	-----	-	-	X 0.0	0.1			0.3		0.1	X	-	-	-----	26
27	MA-5 RM 305	3	20	X 0.0		0.1			0.3	0.1	X	3	20	EF-7 RM 306	28
29	-----	-	-	X 0.0			0.1			0.3 0.1	X	-	-	-----	30
31	-----	-	-	X 0.0	0.1			0.1		0.0	X	-	-	-----	32
33	EF-5 RM 305	3	20	X 0.0		0.1			0.1	0.0	X	3	20	EF-6 RM 305	34
35	-----	-	-	X 0.0			0.1			0.1 0.0	X	-	-	-----	36
37	POWER POLE EQUIPMENT 50	2	30	X 0.6	2.5			2.5		0.6	X	2	30	POWER POLE EQUIPMENT 50	38
39	-----	-	-	X 0.6		2.5			2.5	0.6	X	-	-	-----	40
41	PP RECEPTACLE EQ. 31	1	20	X 0.1			0.4		0.4	0.1	X	1	20	POWER POLE RECEPT	42
	SUBTOTAL			4.7	5	5	10	6	6	2 3.2				SUBTOTAL	

MCB OR MLO	MLO	TOTAL LOAD PHASE A	10 KVA
MAIN CIRCUIT BREAKER RATING		TOTAL LOAD PHASE B	10 KVA
BUS RATING	225 AMPS	TOTAL LOAD PHASE C	11 KVA
MOUNTING	FLUSHED	TOTAL LCL (NEC/CEC 215.2.A.1)	8 KVA
ENCLOSURE	NEMA 1	TOTAL PANEL LOAD (KVA)	40 KVA
		TOTAL PANEL LOAD (AMPS)	110 AMPS

V.19

<E> PANEL '3RH'
LOCATION RM #328
AIC RATING 10 KAIC
VOLTAGE 120/ 208 V
TYPE
FED FROM
PHASE 3
WIRE 4

	DESCRIPTION	BRKR P	BRKR T	LCL	KVA LOAD A	KVA LOAD B	KVA LOAD C	KVA LOAD A	KVA LOAD B	KVA LOAD C	LCL	BRKR P	BRKR T	DESCRIPTION	
1	**MICROWAVE**	**1**	**20**	**0.0**	**0.2**			**0.2**			**0.0**	**1**	**20**	**CUBICAL OFFICE WEST**	2
3	**GARBAGE DISPOSAL**	**1**	**20**	**0.0**		**0.2**			**0.5**		**0.0**	**1**	**20**	**FRIDGE**	4
5	**CONFERENCE RM**	**1**	**20**	**0.0**			**0.2**			**0.2**	**0.0**	**1**	**20**	**CONFERENCE RM**	6
7	**KITCHEN RECEPTACLES**	**1**	**20**	**0.0**	**0.2**			**0.5**			0.0	1	20	<E> RECEPTS 327 W. 303 E	8
9	<E> RECEPTS 327 N. WALL	1	20	X 0.1		0.5			**0.2**		0.0	1	20	<E> RECEPTS 327 W. WALL	10
11	<E> RECEPTS 327 W. WALL	1	20	X 0.1			0.5			**0.2**	**0.0**	**1**	**20**	**MEETING AREA MONITOR**	12
13	<E> RECEPTS 327 N. WALL	1	20	X 0.1	0.5			**0.2**			**0.0**	**1**	**20**	**CONFERENCE RM**	14
15	<E> RECEPTS 329 W. WALL	1	20	X 0.1		0.5			**0.5**		**0.0**	**1**	**20**	**WIGGLE RM**	16
17	<E> RECEPTS 303, 329 S.W.	1	20	X 0.1			0.5			**0.2**	**0.0**	**1**	**20**	**CUBICAL OFFICES EAST**	18
19	<E> RECEPTS 327 N. W RT	1	20	X 0.1	0.5			**0.2**			**0.0**	**1**	**20**	**COMMON AREA RECEPTACLES**	20
21	<E> RECEPTS 327 N. W RT	1	20	X 0.1		0.5			**0.2**		**0.0**	**1**	**20**	**CUBICAL OFFICES WEST**	22
23	**PRINTER**	**1**	**20**	**0.0**			**0.5**			**0.2**	**0.0**	**1**	**20**	**MEETING AREA**	24
25	**PRINTER**	**1**	**20**	**0.0**	**0.5**			**0.2**			**0.1**	**X 1**	**20**	**SPARE**	26
27	**SPARE**	**1**	**20**	**0.0**							0.0	**1**	**20**	**SPARE**	28
29	**SPARE**	**1**	**20**	**0.0**							0.0	**1**	**20**	**SPARE**	30
31	**SPARE**	**1**	**20**	**0.0**							0.0	**1**	**20**	**SPARE**	32
33	**SPARE**	**1**	**20**	**0.0**							0.0	**1**	**20**	**SPARE**	34
35	**SPARE**	**1**	**20**	**0.0**							0.0	**1**	**20**	**SPARE**	36
37	**SPARE**	**1**	**20**	**0.0**							0.0	**1**	**20**	**SPARE**	38
39	**SPARE**	**1**	**20**	**0.0**					4.2		0.0		40/2	EXIST. STILL	40
41	**SPARE**	**1**	**20**	**0.0**						4.2	0.0		-	.....	42
	SUBTOTAL			0.9	2	2	2	1	6	5 0.1				SUBTOTAL	

MCB OR MLO	MLO	TOTAL LOAD PHASE A	3 KVA
MAIN CIRCUIT BREAKER RATING		TOTAL LOAD PHASE B	7 KVA
BUS RATING	100 AMPS	TOTAL LOAD PHASE C	7 KVA
MOUNTING	RECESSED	TOTAL LCL (NEC/CEC 215.2.A.1)	1 KVA
ENCLOSURE	NEMA 1	TOTAL PANEL LOAD (KVA)	18 KVA
		TOTAL PANEL LOAD (AMPS)	50 AMPS

V.19

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PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE DISTRICT

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SHEET
ELECTRICAL SCHEDULES

DATE 04.12.2023
JOB # 2022012 (SOBE 2201690)
SHEET # A AD2 - E6.01

GENERAL NOTES

1. CONTRACTOR IS RESPONSIBLE TO OBTAIN A COMPLETE SET OF CONTRACT DOCUMENTS, ADDENDA, DRAWINGS, AND SPECIFICATIONS. PRIOR TO SUBMITTING PROPOSAL, CONTRACTOR SHALL EXAMINE ARCHITECTURAL, STRUCTURAL AND MECHANICAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS AND SHALL HAVE VISITED THE CONSTRUCTION SITE. HE/SHE SHALL BE FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH HE/SHE WILL HAVE TO OPERATE AND WHICH WILL IN ANY WAY AFFECT THE WORK UNDER THIS CONTRACT. NO SUBSEQUENT ALLOWANCE WILL BE MADE IN THIS CONNECTION IN BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLIGENCE ON HIS/HER PART. DETERMINE THE SEQUENCE OF CONSTRUCTION THROUGHOUT THE PROJECT, INCLUDING TEMPORARY FACILITIES AND CONNECTIONS REQUIRED FOR THE DURATION OF THE PROJECT.

2. ALL TEMPORARY CONNECTIONS SHALL BE CONSIDERED PART OF THIS CONTRACT AND NO EXTRA CHARGES WILL BE ALLOWED. THIS SHALL INCLUDE MINOR ITEMS OF MATERIAL OR EQUIPMENT NECESSARY TO MEET THE REQUIREMENTS AND INTENT OF THE PROJECT.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONS AND PROPERTY AND SHALL PROVIDE INSURANCE COVERAGE AS NECESSARY FOR LIABILITY, PERSONAL, AND PROPERTY DAMAGE, TO FULLY PROTECT THE OWNER, ARCHITECT, AND ENGINEER FROM ANY AND ALL CLAIMS RESULTING FROM THIS WORK.

4. THE CONTRACTOR SHALL PROVIDE TO THE ARCHITECT A CONSTRUCTION SCHEDULE OF ALL ELECTRICAL WORK. THE CONSTRUCTION SCHEDULE SHALL IDENTIFY ALL SIGNIFICANT MILESTONES WITH COMPLETION DATES.

5. THE CONTRACTOR SHALL MAINTAIN RECORD DRAWINGS AT THE PROJECT SITE INDICATING ALL MODIFICATIONS TO ELECTRICAL SYSTEMS. THE CONTRACTOR SHALL, AT THE CONCLUSION OF THE PROJECT, PROVIDE A SET OF REPRODUCIBLE (AUTOCAD), ACCURATE AND NEAT "AS-BUILT" DRAWINGS ACCEPTABLE TO THE ARCHITECT.

6. THESE DRAWINGS DO NOT REPRESENT THE EXACT LOCATIONS, SIZES OR EXTENT OF UTILITIES ON SITE. CONTRACTOR SHALL TAKE STANDARD PRECAUTIONS FOR WORK IN EXISTING FACILITIES.

7. EXISTING ELECTRICAL WIRING WHICH WILL NOT BE MADE OBSOLETE AND WHICH WILL BE DISTURBED DUE TO CONSTRUCTION CHANGES REQUIRED BY THIS CONTRACT SHALL BE RESTORED TO OPERATING CONDITION, AS REQUIRED AND/OR DIRECTED. WHERE REQUIRED, SHOWN AND/OR DIRECTED, OUTLETS AND CONDUIT RUNS SHALL BE RELOCATED. IN SOME CASES IT MAY BE NECESSARY TO EXTEND CONDUITS AND PULL IN NEW WIRING OR INSTALL JUNCTION BOXES AND SPLICE IN NEW WIRING OR REPLACE OLD WIRING WITH NEW.

8. CERTAIN REMODELING OF ELECTRICAL FACILITIES WILL BE REQUIRED IN THE EXISTING BUILDING. EXISTING CONDUIT RUNS ARE GENERALLY NOT SHOWN, ALTHOUGH A FULL ATTEMPT HAS BEEN MADE TO SHOW SOME EXISTING CONDITIONS, OF WHICH INFORMATION HAS BEEN TAKEN FROM EXISTING RECORD DRAWINGS AND/OR LIMITED FIELD INVESTIGATIONS. THE DRAWINGS SHOWING LOCATION OF EXISTING EQUIPMENT, OUTLETS, FIXTURES, ETC., ARE APPROXIMATE ONLY (CONTRACTOR TO FIELD VERIFY).

9. ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY AND SHALL BE INSTALLED AS PER LISTING OR LABELING (IE. MAXIMUM FUSE SIZE MEANS FUSE PROTECTION IS REQUIRED).

10. ALL ELECTRICAL EQUIPMENT AND INSTALLATION SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
    a. AMERICAN STANDARD ASSOCIATION (ASA)
    b. AMERICAN NATIONAL STANDARD INSTITUTE (ANSI)
    c. AMERICAN SOCIETY OF TESTING MATERIALS (ASTM)
    d. CALIFORNIA CODE OF REGULATIONS TITLE 24 (CCR)
    e. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
    f. INSULATED POWER CABLE ENGINEERS ASSOCIATIONS (IPCEA)
    g. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATIONS (NEMA)
    h. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
    i. ALL LOCAL CODE HAVING JURISDICTION

11. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, INSPECTIONS AND INCIDENTAL COSTS NECESSARY FOR EXECUTION AND COMPLETION OF ELECTRICAL WORK, INCLUDING ALL CHARGES BY STATE, COUNTY AND LOCAL GOVERNMENTAL AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR THE ELECTRICAL UTILITY SYSTEM SHUT-DOWNS AND START-UP. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION REQUIRED WITH OTHER AGENCIES AND UTILITY COMPANIES.

12. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CROSSINGS ON NEW UTILITIES WITH THAT OF EXISTING ON SITE AND IN ADJACENT PROPERTIES. NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS OR DISCREPANCIES FROM THIS PLAN.

13. CONTRACTOR SHALL COORDINATE HIS/HER WORK WITH OTHER TRADE ON SITE. ANY COST TO PERFORM WORK TO ACCOMPLISH SAID COORDINATION WHICH DIFFERS FROM THE WORK AS SHOWN ON THE DRAWINGS SHALL BE INCURRED BY THE CONTRACTOR. ANY DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT DURING BID TIME FOR CLARIFICATIONS. ANY SUCH CONFLICTS NOT CLARIFIED PRIOR TO BID SHALL BE SUBJECT TO THE INTERPRETATION OF THE ARCHITECT/ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

14. COORDINATE WITH OTHER TRADES AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT. PROVIDE POWER AND CONNECTION TO MOTORS AND EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS AS INDICATED ON ELECTRICAL DRAWINGS AND DRAWINGS OF OTHER TRADES. CONTRACTOR SHALL REVIEW DRAWINGS OF OTHER TRADES FOR CONTROL DIAGRAMS, SIZE AND LOCATION OF EQUIPMENT. DISCONNECT SWITCHES, STARTERS, AND CONDUITS FOR CONTROL WIRING FOR MECHANICAL AND PLUMBING EQUIPMENT SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING MANUFACTURER'S SHOP DRAWINGS PRIOR TO ROUGHING IN ALL CONDUITS TO THIS EQUIPMENT.

15. BEFORE ROUGH-IN, VERIFY ALL MOUNTING HEIGHTS AND EXACT LOCATIONS FOR ALL EQUIPMENT, ELECTRICAL CONNECTIONS, STUB-UPS, RECEPTACLES, OUTLETS, CONDUIT RUNS, ETC. WITH ARCHITECT AND OWNER. PLACE DEVICES LOCATED ABOVE COUNTERS, SHELVING, ETC. AND IN BATHROOMS SO AS NOT TO CONFLICT WITH EDGES OF WAINSCOTING, COUNTER SPLASH, SHELVING, ETC. ARCHITECTURAL DRAWINGS SHALL GOVERN. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATIONS OF ELECTRICAL DEVICES.

16. MOUNTING HEIGHTS OF ALL CONTROL DEVICES TO BE USED BY OCCUPANT OF THE ROOM OR AREA SHALL BE MOUNTED AT THE FOLLOWING HEIGHTS:
    RECEPTACLES OUTLETS: +18" (TO BOTTOM OF OUTLETS)
    TELEPHONE/TV/DATA OUTLETS: +18" (TO BOTTOM OF OUTLETS)
    LIGHT SWITCHES: +44" (TO HIGHEST OPERABLE PART)
    OUTLETS ABOVE COUNTER: +44" (TO HIGHEST OPERABLE PART)
    MOUNTING HEIGHTS OF ALL DEVICES AND EQUIPMENT ARE FROM FINISHED FLOOR TO +44 LOCATION OF DEVICE AS NOTED. EQUIPMENT INSTALLED IN LOCATIONS NOT APPROVED BY THE ARCHITECT SHALL BE RELOCATED AS DIRECTED BY THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.

17. COORDINATE ALL OUTLET BOX INSTALLATION WITH ARCHITECTURAL WALL FINISH SCHEDULES. SPACE BETWEEN FACEPLATE AND DEVICE BOX SHALL NOT EXCEED 1/8".

18. FOR RENOVATION WORK, THE CONTRACTOR SHALL CONCEAL ALL WORK WHERE POSSIBLE. ALL EXPOSED RACEWAY AND BOXES IN OCCUPIED AREAS OR ON EXTERIOR WALLS SHALL BE PAINTED TO MATCH ADJACENT FINISHES.

19. THE CONTRACTOR SHALL BE HELD FULLY RESPONSIBLE FOR THE PROPER RESTORATION OF ALL EXISTING SURFACES REQUIRING PATCHING, PLASTERING, PAINTING AND/OR OTHER REPAIR DUE TO THE INSTALLATION OF ELECTRICAL WORK UNDER THE TERMS OF THIS SPECIFICATION. CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETC., AS REQUIRED.

20. SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS AND CEILINGS. FURNISH AND INSTALL FIRE RATED BACKBOXES AS REQUIRED, MAINTAINING FIRE RATING OF CEILING OR WALLS WHERE RECESSED ELECTRIC EQUIPMENT SUCH AS LIGHT FIXTURES, SWITCHES, RECEPTACLES, PANEL, ETC. ARE INSTALLED IN RATED WALL OR CEILINGS. PENETRATIONS OF FIRE RATED WALLS, CEILINGS, OR FLOORS SHALL COMPLY WITH CBC CHAPTER 7 (714) REQUIREMENTS. CONDUIT PENETRATIONS THAT ARE NOT STUBBED-OUT INSIDE THE WALL SHALL MEET F AND T RATING. ALL FIRE PROOFING METHODS SHALL BE UL APPROVED.

21. ALL EXTERIOR EQUIPMENT SHALL BE NEMA 3R RATED. ALL WALL PENETRATIONS TO EXTERIOR WALLS SHALL BE SEALED WATER TIGHT.

22. PULLING TAPES: ALL RACEWAY WITHOUT CABLE OR WIRE SHALL BE INSTALLED WITH A MINIMUM 1100 LBS. STRENGTH TEST POLYESTER PULLING TAPE. PULLING TAPES SHALL BE DETECTABLE MULE-TAPE WITH SEQUENTIAL FOOTAGE MARKING.

23. RUN NO MORE THAN 3 CURRENT CARRYING CONDUCTORS IN ANY WIREWAY UNLESS DE-RATING IS APPROVED BY ENGINEER OR SHOWN ON DRAWINGS.

24. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER, #10 AWG MINIMUM, RATED FOR 600V, THHN/THWN, 75 DEGREE CELSIUS. ALL CONDUCTORS SHALL BE STRANDED, SOFT DRAWN ANNEALED COPPER WIRE 98% CONDUCTIVITY, BEARING THE UL LABEL. SYSTEM VOLTAGE SHALL BE IDENTIFIED AS TO VOLTAGE AND PHASE CONNECTIONS BY MEANS OF COLOR IMPREGNATED INSULATION OR APPROVED COLORED MARKING TAPE.

25. WHERE MULTI-HOMERUNS ARE INDICATED ON DRAWINGS INDICATING THE SAME CIRCUIT NUMBER, PROVIDE A JUNCTION BOX ABOVE THE ACCESSIBLE CEILING AND ROUTE ONE SET OF WIRES TO THE CIRCUIT BREAKER.

26. 2REFER TO THE SINGLE LINE DIAGRAM FOR THE CONDUIT AND CONDUCTOR SIZES HOMERUN TO ELECTRICAL PANELS. CONDUIT RUNS MAY NOT BE SHOWN ON DRAWINGS, BUT ARE PART OF THIS CONTRACT.

27. ALL CONDUIT RUNS INCLUDING STRAIGHT FEEDER AND BRANCH CIRCUIT SHALL BE PROVIDED WITH SUFFICIENT PULL BOXES OR JUNCTION BOXES TO LIMIT THE MAXIMUM LENGTH OF ANY SINGLE CABLE PULL TO 100 FEET. PULL BOXES SHALL BE SIZED PER CODE OR AS INDICATED ON DRAWINGS. LOCATIONS SHALL BE DETERMINED IN THE FIELD OR AS INDICATED ON THE DRAWINGS.

28. FINAL CONNECTIONS TO ALL EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS, AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIAL AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.

29. DO NOT COMBINE DIFFERENT SYSTEM VOLTAGES IN SAME CONDUIT (EG., 120/208V VS. 277/480V), UNLESS APPROVED BY ENGINEER OR SHOWN ON DRAWINGS.

30. ELECTRICAL SYSTEMS SHALL BE INSTALLED FOR FINAL INSPECTIONS. PROVIDE NEUTRAL TEST AND PROOF OF TORQUE DURING FINAL INSPECTION FOR ALL UNITS. FINAL TERMINATIONS OF CONDUCTORS TO ELECTRICAL EQUIPMENT AND DEVICES SHALL BE TORQUE WRENCH TIGHTENED TO THE MANUFACTURER'S RECOMMENDED SPECIFICATION, NO EXCEPTION.

31. CIRCUIT BREAKER TERMINALS IN SWITCHBOARDS AND LOAD CENTER SHALL BE UL LISTED AND APPROVED FOR USE COPPER 75 DEGREE CELSIUS CONDUCTORS.

32. SIZES OF BREAKERS, SWITCHES, FUSES AND FEEDERS ARE BASED ON DESIGNED EQUIPMENT SIZES. THESE SIZES SHALL BE ADJUSTED TO SATISFY REQUIREMENTS OF ACTUAL INSTALLED OR SUBSTITUTE EQUIPMENT. UP SIZING OR DOWNSIZING OF FEEDERS SHALL BE PROVIDED WITHOUT ADDITIONAL COST TO THE OWNER.

33. AS REQUIRED ALL OVERSIZED FEEDERS THAT WERE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP SHALL BE PROVIDED WITH ADAPTER LUGS OR SPLICE BOX. ADAPTER LUGS SHALL BE PROVIDED IF SIZE IS AVAILABLE. OTHERWISE PROVIDE CABLE SPLICES IN THE SPLICE BOX TO REDUCE CABLES TO THE MAXIMUM SIZE THAT THE BREAKER LUGS CAN ACCOMMODATE.

34. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAW-CUTTING, TRENCHING, BACKFILLING, COMPACTION AND PATCHING OF CONCRETE AND ASPHALT AS REQUIRED TO COMPLETE WORK. USE EXTREME CAUTION WHEN TRENCHING NEAR EXISTING UNDERGROUND UTILITY LINE. CONTRACTOR SHALL PROVIDE ALL REQUIRED CUTTING, PATCHING, PAINTING, AND REPAIRS NECESSARY TO RESTORE DAMAGED SURFACES TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS EXISTING AT THE START OF WORK.

35. ALL ELECTRICAL EQUIPMENT SHALL BE BRACED OR ANCHORED TO RESIST HORIZONTAL FORCE ACTING IN ANY DIRECTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF ASCE.

36. RIGID GALVANIZED STEEL CONDUIT SHALL BE USED FOR ALL EXTERIOR APPLICATIONS, ALL CONDUITS LARGER THAN 2" TRADE DIAMETER, AND ALL INDOOR CONDUITS BELOW EIGHT (8) FEET FROM FINISHED FLOOR.

37. ELECTRICAL METALLIC TUBING (EMT) IS ONLY ALLOWED IN INTERIOR LOCATION ABOVE EIGHT (8) FEET FROM FINISHED FLOOR AND WHEN ENTERING A PANEL FROM ABOVE.

38. CONNECTIONS TO VIBRATING EQUIPMENT (MOTOR, TRANSFORMER ENCLOSURE, ETC.) AND SEISMIC SEPARATIONS SHALL BE PROVIDED WITH LIQUID-TIGHT FLEXIBLE STEEL CONDUIT WITH WATERTIGHT CONNECTORS. MAXIMUM LENGTH OF CONDUIT SHALL BE SIX FEET, UNLESS OTHERWISE NOTED.

39. CONTRACTOR SHALL PROVIDE TERMINATIONS FOR ALL DATA/VOICE CABLES INDICATED AT OUTLET LOCATIONS INDICATED ON DRAWINGS.

40. CONTRACTOR SHALL PROVIDE AND INSTALL ACCESS PANELS IN NON-ACCESSIBLE CEILINGS WHERE REQUIRED TO ACCESS ELECTRICAL EQUIPMENT IN CEILING SPACE. ACCESS DOORS SHALL HAVE FIRE RATING EQUAL TO THE CEILING ASSEMBLY IN WHICH THEY ARE INSTALLED.

41. ALL FIRE LIFE SAFETY EQUIPMENT, SUCH AS FIRE ALARM CONTROL PANEL AND REMOTE POWER SUPPLIES SHALL BE PROVIDED WITH DEDICATED CIRCUITS. IDENTIFY CIRCUIT DESIGNATION AND PROVIDE PERMANENT LABELING, "FIRE ALARM CIRCUIT " ON ELECTRICAL PANEL. PROVIDE PERMANENT LOCK-ON DEVICE.

42. CONTROL CONDUIT FOR ENERGY/BUILDING MANAGEMENT SYSTEM (E/BMS) SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.

43. ROUTE CONDUIT PARALLEL AND PERPENDICULAR TO WALLS AND ADJACENT PIPING. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND TO PRESENT A NEAT APPEARANCE.

44. WHEN A DISCREPANCY IN QUANTITY OR SIZE OF CONDUIT, WIRE, EQUIPMENT, CIRCUIT BREAKERS, ETC., ARISES ON THE DRAWINGS OR SPECIFICATIONS, CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL REQUIRED BY THE MOST STRINGENT CONDITIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS TO PROVIDE A COMPLETE AND OPERABLE SYSTEM, OR AS DIRECTED BY ENGINEER.

45. FOR SMALL AC MOTORS NOT HAVING BUILT-IN THERMAL OVERLOAD PROTECTION, PROVIDE MANUAL MOTOR STARTERS WITH OVERLOAD HEATER ELEMENTS SIZED PER MANUFACTURER'S RECOMMENDATION. FOR SMALL AC MOTORS WITH BUILT-IN THERMAL OVERLOAD PROTECTION, PROVIDE A HORSEPOWER RATED TOGGLE DISCONNECT SWITCH.

46. DISCONNECT SAFETY SWITCHES SHALL BE HEAVY DUTY AND BE RATED FOR THE NUMBER OF POLES, VOLTAGE, CURRENT AND HORSEPOWER RATING AS REQUIRED. PROVIDE FUSE PROTECTION BASED ON THE MOTOR NAMEPLATE RATINGS.

47. PROVIDE PERMANENT IDENTIFICATIONS (NAMEPLATES) FOR ALL ELECTRICAL PANELS, SWITCHBOARDS, MOTOR CONTROL CENTERS, DISCONNECT SWITCHES, TRANSFORMERS, TERMINAL CABINETS, ETC.

48. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO VERIFY TYPE OF CEILING SYSTEMS AND TO FURNISH APPROVED LIGHTING FIXTURES OF THE TYPE REQUIRED FOR MOUNTING IN SUBJECT CEILING. PROVIDE ALL NECESSARY MOUNTING KIT/HARDWARE TO PROVIDE A COMPLETE WORKING LIGHTING SYSTEM.

49. ALL FINAL ELECTRICAL CONNECTIONS TO OWNER FURNISHED EQUIPMENT SHALL BE MADE BY THE ELECTRICAL CONTRACTOR.

50. ALL SPLICES AND TERMINALS SHALL BE COMPRESSION TYPE, OF SEAMLESS PURE COPPER, TIN PLATED, LONG BARREL, INSPECTION WINDOW, TERMINALS WITH TWO-HOLE PAD (WITH NEMA DRILLING). CLEAN ALL SURFACES AND INSTALL WITH OXIDE INHIBITING COMPOUND BURNDY PENETROX-E OR EQUAL. APPLY COMPOUND BETWEEN BUS BAR AND LUG PAD AND BETWEEN CONDUCTOR AND LUG BARREL. INSTALL COMPRESSION CONNECTORS WITH A FULLY CIRCUMFERENTIAL COMPRESSION DIE BURNDY HYPRESS OR EQUAL.

51. LABEL ALL CONDUIT WHERE IT BEGINS, AND WHERE IT TERMINATES INTO A BOX, PANEL, DEVICE, LOAD, OR DISCONNECT. CONDUIT SHALL BE LABELED EVERY 30 FEET OR LESS. CONDUIT SHALL BE LABELED WHERE IT PENETRATES ANY WALL OR FLOOR. LABEL SHALL BE PERMANENT PRINTED LABELS (DESCRIBING SOURCE, CIRCUIT, AND LOAD) LEGIBLE FROM FLOOR WHERE POSSIBLE (STANDING POSITION).

52. CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS, EQUIPMENT OR INSTALLATION METHODS.

53. PROVIDE ARC-FLASH HAZARD WARNING LABELS ON ALL AFFECTED ELECTRICAL EQUIPMENT, INCLUDING, BUT NOT LIMITED TO SWITCHBOARDS, PANEL BOARDS, INDUSTRIAL CONTROL PANELS, METER SOCKET ENCLOSURES, AND MOTOR CONTROL CENTERS. MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS. LABEL SHALL BE FACTORY PRE-PRINTED OR MACHINE-PRINTED SELF-ADHESIVE VINYL MATERIAL; UV, CHEMICAL, WATER, HEAT AND ABRASION RESISTANT; PRODUCED USING MATERIALS RECOGNIZED BY UL 969. MINIMUM SIZE: 3.5 BY 5 INCHES.

54. WORK SHALL COMPLY WITH THE PROVISIONS OF CHAPTER 33 OF CBC & CFC "FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION".

55. NON-METALLIC RACEWAY COLOR TO BE COORDINATED WITH OWNER.

56. NOTIFICATION DEVICES SHALL BE RED, PULL STATIONS SHALL BE RED, DETECTORS SHALL BE WHITE.

WIRE SCHEDULE

ITEM NO.	INDICATOR	NO. OF CONDUTORS	WIRE SIZE	COLOR	WIRE TYPE	DESCRIPTION
01	M#	1 PAIR	#14 AWG	RED/BLK	FPLP, UTP SLC	INITIATION CIRCUIT
02	C	1 PAIR	#12 AWG	RED/BLK	FPLP, STRANDED	STROBE CIRCUIT
03	E	* (1) FIBER OPTIC CABLE WITH CONNECTOR	N/A	N/A	N/A	CONNECTION CABLE

NOTES:

1. CONDUIT RUN CONCEALED IN CEILING OR WALL, MIN. 1"C.
2. OUTDOOR WIRING TO BE LISTED FOR WET LOCATIONS.

* FIBER OPTIC CABLE TYPE AND CONNECTORS SHALL BE COORDINATED WITH OWNER.

FIRE ALARM GENERAL NOTES

1. ALL WORK IS NEW UON. CONCEAL CONDUITS ABOVE CEILING AND BEHIND WALLS. WHERE EXPOSED, OBTAIN APPROVAL FROM ENGINEER.

2. ALL WIRING SHALL BE IN CONDUITS UON. UNDERGROUND AND OUTDOOR CONDUITS SHALL BE WATERTIGHT AND FREE OF MOISTURE. CABLE NOT IN CONDUIT OR ROUTED UNDERGROUND SHALL BE INSULATED AND OUTDOOR RATED. USE SHIELDED WIRES FOR INITIATION CIRCUITS ROUTED UNDERGROUND EXPOSED CONDUITS SHALL BE PAINTED TO MATCH FINISH.

3. FIRE ALARM DEVICES SHALL BE SYNCHRONIZED. PROVIDE MODULES AND WIRES AS NECESSARY.

4. ALL REQUIREMENTS OF CONTRACT SPECIFICATIONS AND DRAWINGS APPLY.

5. SEE MANUFACTURER FIELD WIRING SPECIFICATIONS FOR ADDITIONAL INSTALLATION REQUIREMENTS.

6. 120VAC 60HZ INPUT POWER FOR FIRE ALARM CONTROL SHALL BE A DEDICATED CIRCUIT WITH LOCKING BREAKER PROPERLY LABELED OR "EMERGENCY POWER FROM THE MAIN DISTRIBUTION PANEL AND LOCAL LOCKABLE BREAKER AT FACP, & TAC PANELS.

7. ALL WIRING, INCLUDING SHIELDS, MUST BE DRY AND FREE OF SHORTS AND GROUNDS. NO SPLICES SHALL BE MADE IN UNDERGROUND BOXES.

8. PROVIDE DISTRICT WITH ONE COPY OF "AS BUILT" DRAWINGS SHOWING LOCATION OF JUNCTION BOXES AND SPLICE BOXES SO THAT ACCURATE DOCUMENTATION MAY BE MAINTAINED.

9. 120VAC IS NOT PERMITTED IN SAME CONDUIT WITH LOW VOLTAGE WIRING. FA CONDUIT SHALL BE DEDICATED TO THE FA SYSTEM.

10. DO NOT APPLY POWER EXCEPT IN THE PRESENCE OF A FACTORY TRAINED MANUFACTURER TECHNICAL REPRESENTATIVE.

11. ANY SMOKE DETECTOR HEAD INSTALLED BEFORE BUILDING IS CLEANED AND ACCEPTED SHALL BE COVERED TO PROTECT FROM DUST. ANY FALSE ALARMS DUE TO DIRT CONTAMINATED HEADS SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

12. THERE WILL BE NO CONDUIT ENTRY ALLOWED 18" OR LOWER ON THE SIDE PANELS OR THROUGH THE BOTTOM OF ALL CONTROL EQUIPMENT BACKBOXES.

13. MANUAL PULL STATIONS SHALL BE MOUNTED NO HIGHER THAN 48" ABOVE FINISHED FLOOR. VISIBLE NOTIFICATION APPLIANCES MOUNTING HEIGHTS SHALL BE AS PER DRAWINGS.

14. FINAL FIRE ALARM TEST SHALL BE MADE WITH THE DSA INSPECTOR OF RECORD (IOR). LOCAL FIRE AUTHORITY SHALL BE NOTIFIED OF DATE AND TIME OF FINAL FIRE ALARM TESTING AND SHALL ASSIST/WITNESS SUCH TESTING WHEN ABLE.

15. ALL WIRE, PANEL AND DEVICE TERMINATIONS, CONDUIT, PHYSICAL MOUNTING, ETC., SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR.

16. U.L. CERTIFICATION FOR THE FIRE ALARM SYSTEM WILL BE PROVIDED BY MANUFACTURER.

17. AUDIBLE FIRE ALARM EVACUATION SIGNAL SHALL BE A UNIFORM CODED THREE – PULSE TEMPORAL PATTERN PER NFPA-72.

18. ALL CONDUITS SHALL HAVE COMPRESSING TYPE. MINIMUM SIZE 3/4". PAINT ALL CONDUITS TO MATCH THE WALLS. PAINT JUNCTION BOXES RED. COORDINATE WITH DISTRICT PAINT STANDARDS.

19. UNDERGROUND AND EXTERIOR CONDUITS WILL HAVE WATER-TIGHT FITTINGS (CEC 110-11 AND 300-6).

20. AUDIBLE FIRE ALARM SOUND LEVEL SHALL BE AT LEAST 15dBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL IN ALL OCCUPIABLE AREAS. (2016 NFPA 72 SEC. 18.4.3.1) (i.e. CLASSROOM AVERAGE AMBIENT ROOM NOISE IS 45dBA PLUS 15dBA EQUALS = 60dBA MINIMUM ALARM TONE REQUIRED).

21. STROBE SHALL FLASH AT A RATE OF NOT EXCEEDING TWO FLASHES PER SECOND NOT BE LESS THAN ONE FLASH EVERY SECOND. (2016 NFPA 72 SEC. 18.5.2.1).

22. AT THE END OF THE WORKDAY, REMOVE ALL DEBRIS AND CLEAN THE WORK AREA.

23. IN AREAS WHERE CONDUIT CAN NOT BE CONCEALED, ALL CONDUITS IN THE CORRIDORS AND CLASSROOMS SHALL BE INSTALLED ON WALLS, CLOSED TO THE CEILING AND THEY SHOULD BE EITHER PARALLEL OR 90 DEGREE TO THE WALLS. USE OF CEILING FOR SUPPORT OF CONDUITS HAS TO BE APPROVED BY THE ENGINEER.

24. MARK THE LOCATION OF ALL DEVICES (USE DIFFERENT COLOR TAPE FOR DIFFERENT DEVICES) AND CONDUIT RUN AT SITE. THE LOCATION OF DEVICES AND CONDUIT RUN MUST BE APPROVED BY THE ENGINEER/INSPECTOR PRIOR TO INSTALLATION.

25. TAG ALL WIRE AT JUNCTION BOXES AND AT TERMINATION, AND LABEL ALL DEVICES.

26. AS THE DRAWINGS ARE SCHEMATICS IN NATURE, AFTER FINALIZING THE LOCATION OF THE DEVICES AND THE CONDUIT ROUTING, MARK THE CONSTRUCTION DRAWINGS AND MEET WITH DISTRICT. THEY WILL PROVIDE YOU WITH THE INFORMATION ABOUT THE EXISTENCE OF LEAD-BASED PAINT OR ASBESTOS IN THE WORK AREA. FOLLOW THEIR DIRECTION TO MEET THE STATE AND CITY REQUIREMENTS TO WORK IN AND AROUND CONTAMINATED AREAS.

27. FIRE ALARM CONTRACTOR SHALL PROVIDE A "PERMANENT RECORDS" TO THE INSPECTOR OF RECORD (IOR) / DSA AND DISTRICT AFTER SUCCESSFUL COMPLETION OF ACCEPTANCE TESTS. (2016 NFPA 72 SEC. 10.18.2 & FIGURE 10.18.2.1.1).

28. TITLE 24 PART I ADMINISTRATIVE REQUIREMENTS INCLUDING BUT NOT LIMITED TO THE FOLLOWING SECTIONS AND THEIR SUB SECTIONS SHALL APPLY.
    A. ADMINISTRATION OF CONSTRUCTION
    B. INSPECTOR AND CONTINUOUS INSPECTION PER SECTION 4-333(b) AND 4-342
    C. SUPERVISION BY DSA PER SECTION 4-334
    D. VERIFIED REPORTS PER SECTION 4-336
    E. ADDENDA AND CHANGES PER SECTION 4-338
    F. DSA IS NOT SUBJECT TO ARBITRATION.

29. UPON COMPLETION OF SYSTEM INSTALLATION, THE SYSTEM SHALL BE TESTED IN THE PRESENCE OF AND IN A MANNER ACCEPTABLE TO DSA/IOR. THE CONTRACTOR TO SUPPLY NECESSARY TESTING EQUIPMENTS INCLUDING A "DECIBEL METER" TO CHECK ACCEPTABLE NOISE LEVEL OF AUDIBLE DEVICES. PROVIDE TEST RESULTS PER NFPA 72 TO ENGINEER, DSA, IOR, OWNER AND TO THE LOCAL FIRE AUTHORITY.

30. PENETRATIONS OF ALL FIRE-RATED WALLS SHALL BE PROTECTED IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE, PART 2. PROVIDE DETAILS AND UL DESIGN NUMBERS.

31. RECORD RECEIPT OF ALL SIGNALS TO CENTRAL STATION MONITOR.

32. CONTRACTOR SHALL REFER TO FIRE ALARM SPECIFICATIONS AND DISTRICT STANDARDS FOR ADDITIONAL FIRE ALARM SYSTEM INSTALLATION REQUIREMENTS.

33. COORDINATE FLOW AND TAMPER SWITCHES WITH FIRE SPRINKLER INSTALLER.

34. SUPERVISING STATION: AUTOMATIC FIRE ALARM SYSTEMS SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72, AS AMENDED BY CFC CHAPTER 47. THE SUPERVISION STATION SHALL BE LISTED AS EITHER UUFX OR UUJS BY UNDERWRITERS LABORATORY OR SHALL MEET THE REQUIREMENTS OF FACTORY MUTUAL RESEARCH APPROVAL STANDARD 3011.

35. IF ROUTING DIFFERS SIGNIFICANTLY FROM THESE PLANS, APPROVAL FROM DSA AND THE PROJECT ELECTRICAL ENGINEER MUST BE OBTAINED BEFORE CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE TO SUBMIT & OBTAIN DSA APPROVAL AT NO ADDITIONAL COST TO THE DISTRICT. AFTER CONSTRUCTION, PROVIDE ACCURATE FIELD RECORD DRAWINGS TO OWNER.

36. T-TAPPING IS NOT ALLOWED.

37. AUDIBLE DEVICES SHALL BE NOT LESS THAN 75 DBA AT 10 FEET OR MORE THAN 110 DBA IN TOTAL THROUGHOUT. AUDIBLE SOUND LEVELS SHALL ALSO BE AT LEAST 15 dBA ABOVE AVERAGE AMBIENT SOUND LEVEL IN ALL OCCUPIED AREAS. AUDIBLE DEVICES SHALL SOUND THE CALIFORNIA UNIFORM FIRE ALARM SIGNAL IN TEMPORAL MODE, THREE DISTINCTIVE FIRE ALARM SOUND.

38. CONTRACTOR MUST SUBMIT RESULT OF THE SOUND TEST TO THE PROJECT ELECTRICAL ENGINEER AND MAY BE REQUIRED TO RELOCATE OR ADD AUDIBLE DEVICES TO MEET THE DBA REQUIREMENT. CONTRACTOR BID SHALL INCLUDE (5) SPARE OF EACH TYPE OF SIGNALING & INITIATION DEVICES WITH CONNECTION TO FACP AS REQUIRED (I.E. SPEAKER, SPEAKER STROBE, DETECTOR).

39. BASED ON ORIGINAL STRUCTURAL DRAWINGS THE 1ST FLOOR CEILING HEIGHT: 21'. INTERSECTING BEAMS, CORRUGATED 2ND FLOOR DECK. EAST TO WEST BEAM ON THE COLUMN LINES ARE 23.9" DEEP THE INTERSECTING BEAMS RUNNING NORTH TO SOUTH ARE 17.9" DEEP WITH SOME INTERMEDIATE BEAMS AT 15.69" DEEP.

40. BASED ON NFPA-72 THE BEAM DEPTH RATIO TO CEILING HEIGHT IS LESS THAN 10% DEEP. FOR BEAMS OR INTERSECTING BEAMS: CEILING OR BOTTOM OF BEAMS, FOR SOLID JOISTS: BOTTOM OF JOISTS.

41. NOT ALL DEVICES ARE SHOWN IN THESE DRAWINGS AND IT SHALL BE THE CONTRACTORS RESPONSIBILITY FOR A COMPLETE AND OPERATIONAL SYSTEM UPON COMPLETION MEETING NFPA-72 REQUIREMENTS AND ALL APPLICABLE CODES ALONG WITH ANY LOCAL JURISDICTION REQUIREMENTS – A "TURN KEY" SOLUTION.

42. THERE SHALL BE NO SPLICING OF FIRE ALARM CONDUCTORS BETWEEN TERMINATION OF FIRE ALARM DEVICES, UNLESS SPECIFICALLY NOTED OTHERWISE. FIRE ALARM CONDUCTORS SHALL BE CONTINUOUS FROM DEVICE TO DEVICE. SPLICES ARE PERMITTED AT THE BUILDING FIRE ALARM TERMINAL CAN.

43. EXISTING FIRE ALARM SYSTEM SHALL NOT BE TAKEN OFFLINE UNTIL NEW FIRE ALARM SYSTEM IS TESTED AND FULLY FUNCTIONAL. IN THE EVENT OF FIRE ALARM SYSTEM NOT OPERATING IN A DEPENDABLE MANNER, THE CONTRACTOR SHALL PROVIDE FIRE WATCH AT CAMPUS OR AFFECTED PORTION OF THE CAMPUS PER DSA IRF-2.

APPLICABLE CODES

UNLESS OTHERWISE INDICATED OR SPECIFIED, PERFORM THE WORK IN CONFORMANCE WITH THE LATEST EDITIONS OF ALL APPLICABLE REGULATORY REQUIREMENTS, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

1. CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24): 2022
2. CALIFORNIA BUILDING CODE (PART 2, TITLE 24): 2018 IBC WITH 2019 CA AMENDMENTS
3. CALIFORNIA ELECTRICAL CODE (PART 3, TITLE 24): 2017 NEC WITH 2019 CA AMENDMENTS
4. CALIFORNIA MECHANICAL CODE (PART 4, TITLE 24): 2018 UMC WITH 2019 CA AMENDMENTS
5. CALIFORNIA PLUMBING CODE (PART 5, TITLE 24) 2018 UPC WITH 2019 CA AMENDMENTS
6. CALIFORNIA ENERGY CODE (PART 6, TITLE 24): 2019
7. CALIFORNIA HISTORICAL BUILDING CODE, (PART 8, TITLE 24): 2019
8. CALIFORNIA FIRE CODE (PART 9, TITLE 24): 2018 IFC WITH 2019 CA AMENDMENTS
9. CALIFORNIA EXISTING BUILDING CODE (PART 10, TITLE 24): 2019 (2018 INTERNATIONAL EXISTING BUILDING CODE WITH 2019 CA AMENDMENTS)
10. CALIFORNIA GREEN BUILDING STANDARDS CODE OR CAL GREEN (PART 11, TITLE 24): 2019
11. CALIFORNIA REFERENCED STANDARDS CODE (PART 12, TITLE 24): 2019
12. PUBLIC SAFETY (CCR TITLE 19), STATE FIRE MARSHAL: CURRENT REVISION
13. NFPA 72, NATIONAL FIRE ALARM CODE, 2016 EDITION

SCHOOL EQUIPMENT ANCHORAGE

M/E/P COMPONENT ANCHORAGE NOTE:

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON-THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC SECTION 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTION EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.

B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTION 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING ~~PIPING~~ (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP ☐ MD ☐ PP ☐ E ☒ — OPTION 1: DETAIL ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP ☐ MD ☐ PP ☐ E ☐ — OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM #) # ______

SUMMARY OF WORK

1. THE NEW SYSTEM FOR THE BUILDING SHALL BE MANUAL AND AUTOMATIC ADDRESSABLE, CLASS B, (AS INDICATED ON DRAWINGS).
2. THE NEW FIRE ALARM WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:
    a. PROVIDE AND INSTALL OF RACEWAYS AND WIRING.
    b. PROVIDE AND INSTALL OF FA INITIATION DEVICES AND SIGNALING DEVICE.
    c. PROVIDE AND INSTALL OF FACP, AUXILIARY EQUIPMENT, AND ASSEMBLIES FOR A CODE COMPLIANT FA SYSTEM.
    d. TESTING AND COMMISSIONING OF FIRE ALARM SYSTEM.
3. CONTRACTOR SHALL COORDINATE FIRE ALARM WORK WITH DISTRICT AND LOCAL FIRE AUTHORITY. DISTRICT AND LOCAL FIRE AUTHORITY SHALL BE GIVEN 48 HOURS NOTICE PRIOR TO SYSTEM SHUT DOWN. SIGNS SHALL BE POSTED NOTIFYING PUBLIC AND DISTRICT AUTHORITIES THAT THE FIRE ALARM SYSTEM HAS BEEN DECOMMISSIONED FOR THE UPGRADE.

TESTING OF EXISTING SYSTEMS

TESTING OF EXISTING SYSTEMS:

1. PROVIDE COMPLETE OPERATIONAL TEST OF EXISTING FIRE ALARM SYSTEM PRIOR TO ANY DEMOLITION OR CONSTRUCTION. VERIFY OPERATION OF EACH DEVICE, CONTROL PANEL, DISTRIBUTION EQUIPMENT AND ASSOCIATED ACCESSORIES.
2. PROVIDE A COMPLETE WRITTEN REPORT TO THE ENGINEER, INDICATING ANY DEFICIENCIES OF THE EXISTING SYSTEM IN RELATION TO EACH COMPONENT'S INTENDED FUNCTION. IN ADDITION, PROVIDE DEFICIENCIES OF THE EXISTING SYSTEM WITH REGARD TO CURRENT CODE, ADA, AND LOCAL ACCESSIBILITY STANDARDS REQUIREMENTS. PROVIDE THE WRITTEN REPORT 14 DAYS PRIOR TO ANY WORK RELATED TO THE EXPANSION OF THE EXISTING SYSTEM.
3. TESTING OF THE EXISTING SYSTEM SHALL INCLUDE ALL AREAS AND ALL BUILDINGS SERVED BY THE EXISTING SYSTEM.

SYMBOLS AND ABBREVIATIONS

SYMBOL	DESCRIPTION
	BATTERY BACK-UP
	120 VAC, DEDICATED CIRCUIT
EOL	END OF LINE RESISTOR
	CONDUIT W/ FIRE ALARM WIRING CONCEALED BEHIND WALLS AND ABOVE CEILING SPACES
	EXISTING DEVICES, CONDUITS, WIRES, ETC. TO REMAIN
	NEW (BOLD) DEVICES, CONDUITS, WIRES, ETC.
	CONDUIT UP
	CONDUIT DOWN
	WATER FLOW BELL
	SMOKE DETECTOR
	HEAT DETECTOR
SS	SPEAKER STROBE
S WP	SPEAKER WEATHERPROOF
	STROBE
	SMOKE DETECTOR FOR DUCT
FS	FLOW SWITCH
F	PULL STATION (MANUAL FIRE ALARM BOX)
MM	MONITOR MODULE
FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINAL CABINET
FAA	ANNUNCIATOR PANEL
RPS	REMOTE POWER SUPPLY
CSFM	CALIFORNIA STATE FIRE MARSHAL
DACT	DIGITAL ALARM COMMUNICATOR TRANSMITTER; SECURITY PANEL
<E>	EXISTING
<N>	**NEW (BOLD)**
<R>	REMOVE
RPS	REMOTE POWER SUPPLY
UON	UNLESS OTHERWISE NOTED
FACP	FIRE ALARM CONTROL PANEL
TAC	TRUEALERT ADDRESSABLE CONTROLLER (RPS)
TP	TWISTED PAIR (SHIELDED)
TPS	TRUEALERT POWER SUPPLY
VP	VANDALPROOF
WP	WEATHERPROOF

PHOTOGRAPHIC CONSTRUCTION RECORDS

THE CONTRACTOR SHALL PROVIDE PRECONSTRUCTION DIGITAL PHOTOGRAPHS AND VIDEO RECORDINGS PRIOR TO COMMENCEMENT OF WORK ON THE SITE. BEFORE CONSTRUCTION MAY START, CONTRACTOR SHALL DOCUMENT ANY EXISTING CONDITIONS THAT ARE NOT COVERED BY THE CONTRACT DOCUMENTS (DAMAGED CONCRETE, WALLS, LANDSCAPE, ETC.). FAILURE TO DOCUMENT EXISTING DAMAGE WILL RESULT IN CONTRACTOR REPAIRS TO SURFACE TO MATCH ADJACENT AFTER CONSTRUCTION ACTIVITIES. ADDITIONAL PRECONSTRUCTION PHOTOGRAPHS/VIDEOS SHALL BE TAKEN AT LOCATIONS TO BE DESIGNATED BY THE OWNER'S REPRESENTATIVE.

CONTRACTOR SHALL MAKE A VIDEO RECORDING OF ALL PROPOSED ROUTINGS FOR INFRASTRUCTURE WORK, NOTING CONDITIONS OF EXISTING SURFACES AND ADJACENT IMPROVEMENTS. ONE COPY OF COMPLETE VIDEO SHALL BE TRANSMITTED TO THE OWNER'S REPRESENTATIVE.

CONSTRUCTION PHOTOGRAPHS

THE CONTRACTOR SHALL PROVIDE CONSTRUCTION PHOTOGRAPHS SHOWING THE PROGRESS OF THE WORK AND AS MAY BE DIRECTED BY THE OWNER'S REPRESENTATIVE. PHOTOGRAPHS/VIDEOS SHALL BE FORMATTED, IDENTIFIED, AND DELIVERED AS DESCRIBED ABOVE FOR DIGITAL PHOTOS AND VIDEOS. STARTING ONE MONTH AFTER THE DATE OF THE PRECONSTRUCTION PHOTOGRAPHS AND CONTINUING AS LONG AS THE WORK IS IN PROGRESS, APPROXIMATELY 40 MONTHLY PHOTOGRAPHS SHALL BE TAKEN, CATALOGED AND CROSS REFERENCED TO DRAWINGS/PLANS.

ANY WORK TO BE CONCEALED (BURIED, BEHIND WALLS, ABOVE CEILING, BELOW SLAB, ETC.) SHALL BE PHOTO DOCUMENTED AFTER ANY TESTING AND INSPECTION AND PRIOR TO CONCEALING TO CLEARLY INDICATE THE WORK. DOCUMENT ON PLANS THE LOCATION AND ORIENTATION FOR EACH PHOTO DOCUMENTING CONCEALED WORK.

FOR FINAL COMPLETION, DOCUMENT ALL PUNCH LIST ITEM COMPLETION BY PHOTOGRAPH OR VIDEO.

DELIVER CONSTRUCTION PHOTOGRAPHS AND VIDEOS WITHIN 10 DAYS OF CREATION. ALL PHOTOS AND VIDEOS SHALL BE OF SUFFICIENT QUALITY TO CLEARLY DEPICT WORK.

FIRE ALARM DRAWING INDEX

SHT NO.	DESCRIPTION
AD2 – FA0.00	FIRE ALARM GENERAL NOTES, SYMBOLS & ABBREVIATIONS (A)
AD2 – FA0.01	FIRE ALARM LEGEND & NOTES
FA1.01	FIRE ALARM SITE PLAN
AD2 – FAD2.01	FIRE ALARM FLOOR PLAN LEVELS 1 & 2 – DEMO (A)
AD2 – FA2.01	FIRE ALARM FLOOR PLAN LEVELS 1 & 2 – NEW
FAD2.02	FIRE ALARM ROOF PLAN – DEMO
FA2.02	FIRE ALARM ROOF PLAN – NEW
AD2 – FA4.01	FIRE ALARM ENLARGED FLOOR PLANS (A)
FA5.01	FIRE ALARM DETAILS
FA6.01	FIRE ALARM CALCULATIONS
AD2 – FA7.01	FIRE ALARM RISER DIAGRAM (A)

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STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

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A	Addendum 2	04/12/23

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DSA BACKCHECK	02.21.2023

SHEET
FIRE ALARM GENERAL NOTES , SYMBOLS & ABBREVIATIONS

DATE 04.12.2023

JOB # 2022012 (SOBE 2201690)

SHEET #
AD2 - FA0.00

FIRE ALARM & DETECTION SYSTEMS

1) APPLICABLE STANDARD NFPA 72, AS ADOPTED AND AMENDED IN CBC CHAPTER 35
2) INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION, INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM, HAS BEEN APPROVED BY DSA.
3) UPON COMPLETION OF SYSTEM INSTALLATION, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF A DSA PROJECT INSPECTOR.
4) A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.
5) ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND THE ARCHITECT/ENGINEER OF THE PROJECT.
6) DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND /OR TESTING.
7) ALL PENETRATIONS THROUGH RATED ASSEMBLIES REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER APPROVED LAB TESTING CRITERIA. APPROVED TYPES OF MATERIALS SHALL BE IDENTIFIED WITHIN THE PROJECT SPECIFICATIONS WITHIN THE FIRE ALARM SECTION.
8) WALL MOUNTED VISIBLE NOTIFICATION DEVICES SHALL HAVE THEIR BOTTOMS MOUNTED AT 80" MINIMUM AND THEIR TOPS AT 96" MAXIMUM FROM FINISHED FLOOR.
9) WALL MOUNTED AUDIBLE NOTIFICATION DEVICES SHALL HAVE THEIR TOPS MOUNTED AT 90" MINIMUM AND 100" MAXIMUM FROM FINISHED FLOOR AND NO CLOSER THEN 6" TO A HORIZONTAL STRUCTURE.
10) AUDIBLE DEVICES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15 DECIBELS (DBA) ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR FIVE DBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER, IN EVERY OCCUPIABLE SPACE WITHIN THE BUILDING.
11) AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN.
12) THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
13) VISIBLE DEVICES SHOULD NOT EXCEED TWO FLASHES PER SECOND AND SHOULD NOT BE SLOWER THAN ONE FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELLA. VISIBLE DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.
14) UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATER TIGHT FITTINGS AND WIRE TO BE APPROVED FOR WET LOCATIONS.
15) ALL FIRE ALARM WIRING SHALL BE FPLOR FPLP (FIRE POWER LIMITED OR FIRE POWER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE TYPE THHN OR THWN.
16) PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. ALL BOXES TO BE SIZED PER CEC.
17) SMOKE DETECTORS SHALL NOT BE ANY CLOSER THAN 1' FROM FIRE SPRINKLERS OR 3' FROM ANY SUPPLY DIFFUSER. IN AREA OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION ON NEWLY INSTALLED FIRE ALARM, DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.
18) ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.
19) FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
20) A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE ENERGIZED FROM THE COMMON USE AREA PANEL AND SHALL HAVE NO OTHER OUTLETS. THE BREAKER SHALL HAVE A RED LOCKING DEVICE TO BLOCK THE HANDLE IN THE "ON" POSITION. THE CIRCUIT BREAKER SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL." CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXTENDERS.
21) THE INSTALLING CONTRACTOR SHALL PROVIDE A COMPLETED "SYSTEM RECORD OF COMPLETION" PER NFPA 72, FIGURE 17.6.2.
22) FIRE ALARM CONTROL PANELS AND REMOTE ANNUNCIATORS SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48" ABOVE THE FINISHED FLOOR.
23) MICROPHONES ASSOCIATED WITH EMERGENCY VOICE ALARM COMMUNICATION SYSTEMS (EVAC) SHALL BE ACCESSIBLE FOR USE, INSTALLED IN COMPLIANCE WITH CBC SECTIONS 11B-305 AND 11B-308.
24) THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2.
25) SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.
26) OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS.

FIRE ALARM LEGEND

SYMBOL	DESCRIPTION	MODEL #	CSFM #	BACK BOX	MANUFACTURER
FACP	FIRE ALARM CONTROL PANEL W WITH MODEM/DIALER INTERFACE	EST 3	7165-1657:306 7165-1657:186	MFR. SPECIFIC	EST
RPS	BOOSTER POWER SUPPLY WITH BUILT-IN SYNC	BPS-10A	7300-1657:229	MFR. SPECIFIC	EST
	CEILING MOUNTED FIRE ALARM SMOKE DETECTOR DETECTOR / BASE	SIGA-PD	7272-1657:331	SEE INSTALLATION MANUAL	EST
	CEILING MOUNTED HEAT DETECTOR 135° FIXED/RATE DETECTOR / BASE	SIGA-HRD	7270-1657:333	SEE INSTALLATION MANUAL	EST
	HVAC DUCT DETECTOR AND HOUSING	SIGA-SD	3242-1657:223	SEE INSTALLATION MANUAL	EST
MM	MONITOR MODULE	SIGA-CR/ SIGA-CRH	7300-1675:121	SEE INSTALLATION MANUAL	EST
F	MANUAL PULL STATION	SIGA-270	7150-1657:129 7150-1657:256	SEE INSTALLATION MANUAL	EST
75	FIRE ALARM COMBO HORN/STROBE 15cd,30cd,75cd,110cd	G1RF-HDVM	7125-1657:0284	4x4x2⅛", SINGLE GANG, DOUBLE GANG, 4" OCTAGON	EST
WP	WEATHERPROOF HORN WITH LISTED WEATHERPROOF BACK BOX	WG4 SERIES	7135-1657:310	4x4x2⅛", SINGLE GANG, DOUBLE GANG, 4" OCTAGON	EST
FAA	ANNUNCIATOR CONTROL PANEL	3-LCDANN	7120-1675-0195	SEE INSTALLATION MANUAL	EST
FAD	FIRE ALARM DOCUMENTATION CABINET	NF-FAD	7300-0553:0110	SEE MFR. MANUAL FOR SURFACE MOUNT	SPACE AGE
A 75	CEILING MOUNTED HORN STROBE	GENESIS SERIES	7300-1675:0202	SEE INSTALLATION MANUAL	EST

NOTES:

1. NOT ALL COMPONENTS USED FOR THE FACP ARE SHOWN.
2. NO CO DETECTION IS REQUIRED FOR BUILDING CONSTRUCTED BEFORE 2016.
3. FACP WIEGHT IS LESS THAN 50 LBS.
4. ATTACH PANEL TO CONCRETE WALL WITH FOUR (4) ½" DIAMETER EXPANSION ANCHORS WITH 3.75" MIN. EMBEDMENT (ONE ANCHOR AT EACH CORNER). TORQUE-TEST ALL ANCHORS TO 50 FT-LBS. INSTALL PER POST-INSTALLED ANCHORS AND DOWELS NOTES ON S1.0 AND TEST PER TESTING AND SPECIAL INSPECTION NOTES ON SHEET S1.0.

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SHEET

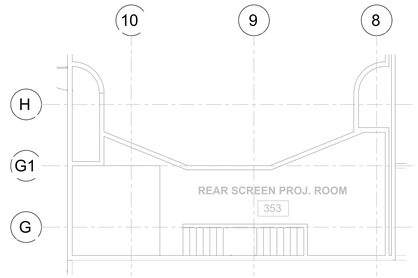
FIRE ALARM LEGEND & NOTES

DATE 04.12.2023

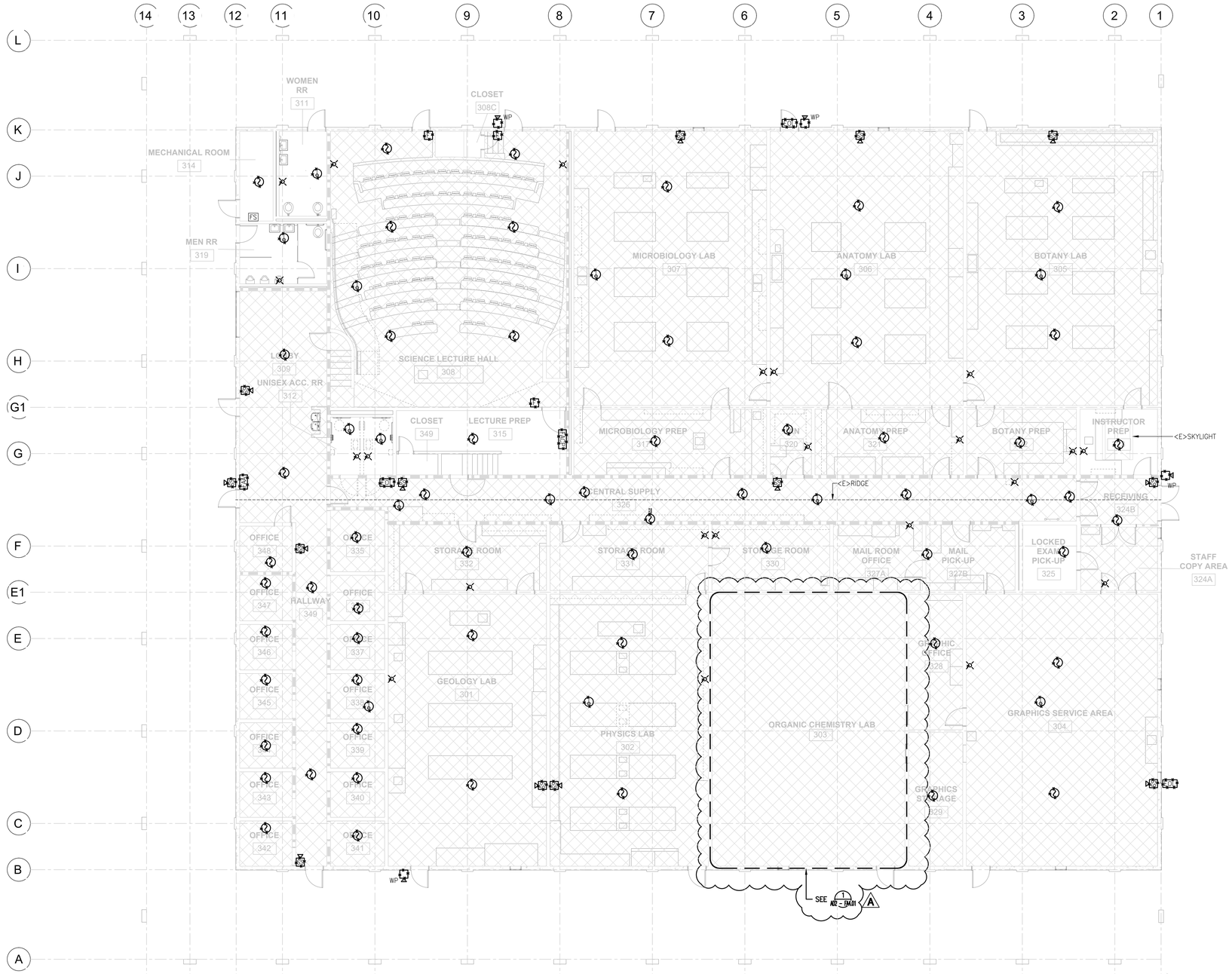
JOB # 2022012 (SOBE 2201690)

SHEET #

AD2 - FA0.01



2 FLOOR PLAN LEVEL 2 - DEMO
SCALE: 1/8" = 1'-0"



1 FLOOR PLAN LEVEL 1 - DEMO
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

A. ALL DEVICES SHOWN SHALL BE DEMOLISHED UNLESS OTHERWISE NOTED.

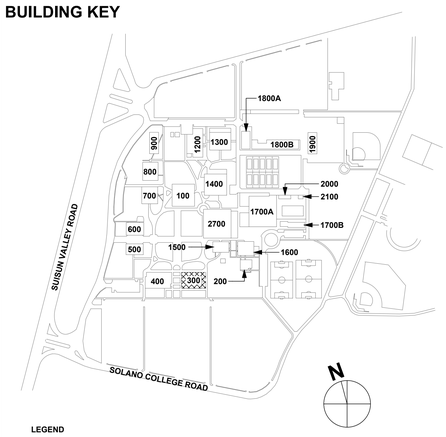
B. FIRE ALARM RACEWAYS UNUSED AFTER THE DEMOLITION SHALL BE CUT BACK FROM THE JUNCTION BOX. PULL WIRING BACK TO SOURCE. PROVIDE AND INSTALL BLANK COVER PLATES, PATCH AND PAINT WALL TO MATCH ADJACENT FINISH AFTER REMOVING CONDUITS, FASTENERS, ETC.

C. DEVICES SHOWN FOR REFERENCE ONLY. REMOVE ALL EXISTING FA DEVICES, U.O.N.

CEILING LEGEND

- DROPPED CEILING
- HARD CEILING
- SKYLIGHT, SIZE VARIES

BUILDING KEY



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SHEET
FIRE ALARM FLOOR PLAN LEVELS 1 & 2 - DEMO

DATE 04.12.2023
JOB # 2022012 (SOBE 2201690)
SHEET # AD2 - FAD2.01

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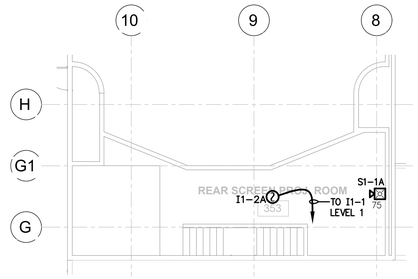
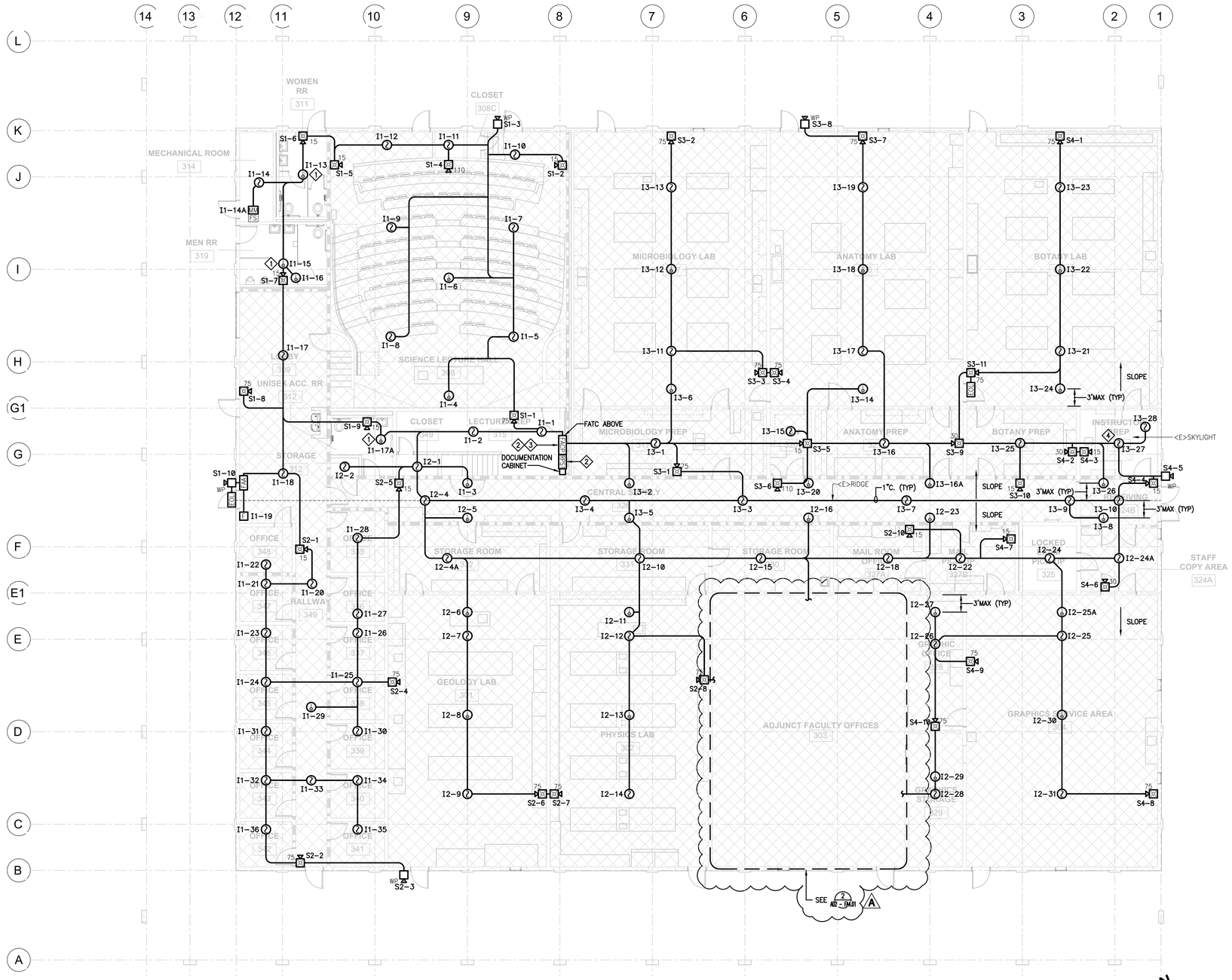


2 FLOOR PLAN LEVEL 2 - NEW

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



1 FLOOR PLAN LEVEL 1 - NEW

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

GENERAL SHEET NOTES

A. ROUTE CONDUIT ABOVE CEILING PARALLEL AND PERPENDICULAR TO WALLS.

B. INSTALL FA DEVICES FLUSH TO BUILDING WALLS AND CEILINGS.

C. FIRE ALARM RACEWAYS SHALL BE CONCEALED. PATCH AND PAINT WALL/CEILING AFFECTED BY FIRE ALARM DEMOLITION WORK. WHERE CONCEALMENT IS NOT POSSIBLE, USE WIREMOLD 2300 SERIES, PANDUIT LD5 OR APPROVED EQUAL, PRE-PAINTED NON-METALLIC RACEWAY FOR ALL EXPOSED AREAS. USE 1"C. MIN., U.O.N. EXISTING CONDUITS SHALL NOT BE REUSED, U.O.N. COORDINATE WITH OWNER/ARCHITECT.

D. REVIEW LOCATIONS & CONDUIT TO DEVICE WITH ENGINEER PRIOR TO ROUGH-IN ADJUST LOCATION +/- 10 FT. IN ANY DIRECTION AT NO COST, U.O.N. ALL WIRES SHALL BE IN CONDUIT UON.

E. INSTALL HEAT DETECTOR ABOVE CEILING U.O.N.

F. MULTIPLE DEVICES IN THE SAME FIELD OF VIEW SHALL BE SYNCHRONIZED.

G. FOR SLOPED CEILINGS SMOKE AND HEAT DETECTORS SHALL BE INSTALLED PER NFPA 72 FIGURE A17.6.3.4(a), A17.6.3.4(b), AND 2.9.8.3.2.

H. THERE SHALL BE NO SPLICING OF FIRE ALARM CONDUCTORS BETWEEN TERMINATION OF FIRE ALARM DEVICES, UNLESS SPECIFICALLY NOTED OTHERWISE FIRE ALARM CONDUCTORS SHALL BE CONTINUOUS FROM DEVICE TO DEVICE. SPLICES ARE PERMITTED AT THE BUILDING FIRE ALARM TERMINAL CAN.

I. HEAT DETECTORS SHALL BE INSTALLED IN DAMP HUMID AND STEAMY AREAS.

REFERENCE SHEET NOTES

1. INSTALL HEAT DETECTOR BELOW CEILING.
2. PROVIDE AND INSTALL 120VAC FROM NEAREST ELECTRICAL PANEL. COORDINATE WITH ELECTRICAL DRAWINGS.
3. FIELD VERIFY, TEST, REUSE EXISTING CONNECTION AND INTERCONNECT TO BUILDING 1800 MAIN CAMPUS FACP.
4. SMOKE DETECTOR LOCATED IN ACCORDANCE WITH NFPA 72.

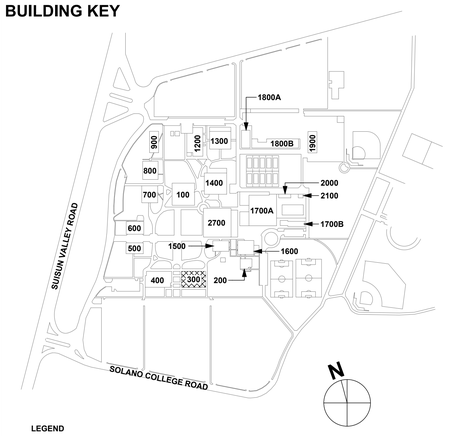
CEILING LEGEND

DROPPED CEILING

HARD CEILING

SKYLIGHT, SIZE VARIES

BUILDING KEY



LEGEND

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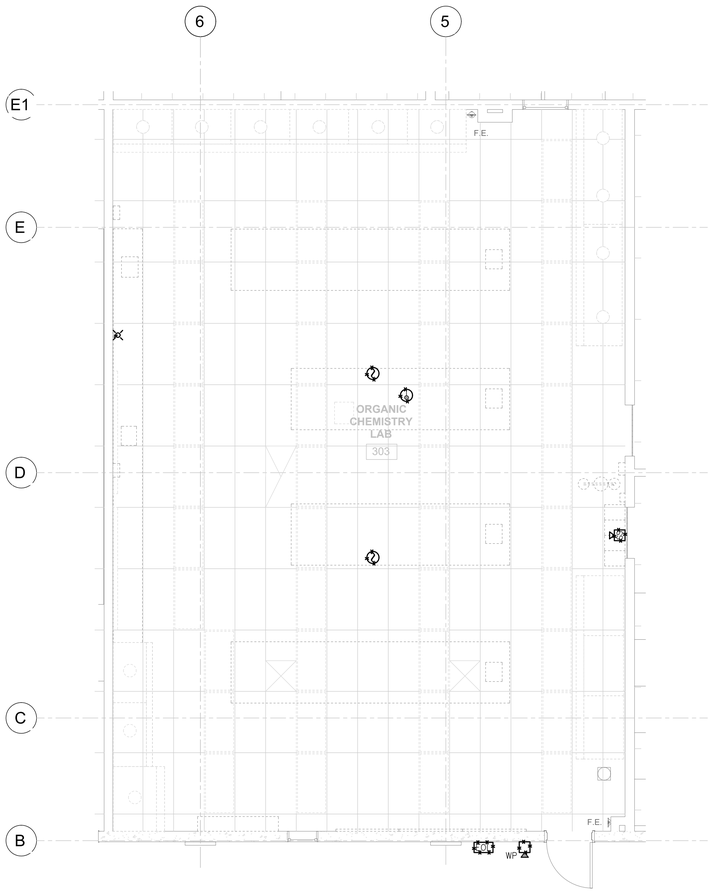
SHEET

FIRE ALARM FLOOR PLAN LEVELS 1 & 2 - NEW

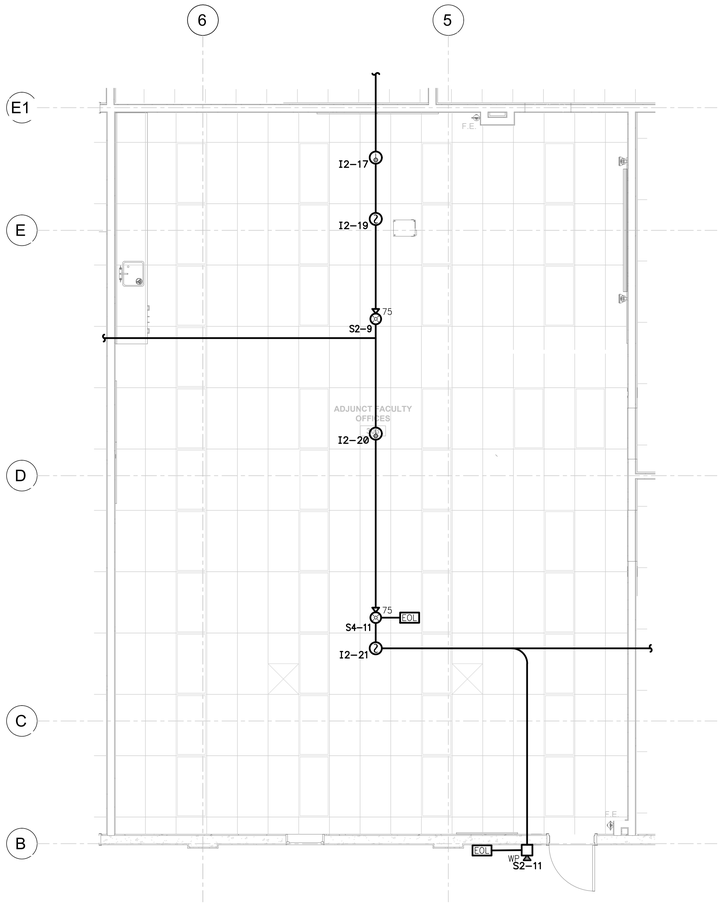
DATE 04.12.2023

JOB # 2022012 (SOBE 2201690)

SHEET # AD2 - FA2.01



1 **FLOOR PLAN RM 303 ORGANIC CHEMISTRY LAB - DEMO**
SCALE: 1/4" = 1'-0"



2 **FLOOR PLAN RM 303 ADJUNCTS FACULTY OFFICES - NEW**
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES

A. ROUTE CONDUIT ABOVE CEILING PARALLEL AND PERPENDICULAR TO WALLS.

B. INSTALL FA DEVICES FLUSH TO BUILDING WALLS AND CEILINGS.

C. FIRE ALARM RACEWAYS SHALL BE CONCEALED. PATCH AND PAINT WALL/CEILING AFFECTED BY FIRE ALARM DEMOLITION WORK. WHERE CONCEALMENT IS NOT POSSIBLE, USE WIREMOLD 2300 SERIES, PANDUIT LD5 OR APPROVED EQUAL, PRE-PAINTED NON-METALLIC RACEWAY FOR ALL EXPOSED AREAS. USE 1"C. MIN., U.O.N. EXISTING CONDUITS SHALL NOT BE REUSED, U.O.N. COORDINATE WITH OWNER/ARCHITECT.

D. REVIEW LOCATIONS & CONDUIT TO DEVICE WITH ENGINEER PRIOR TO ROUGH-IN ADJUST LOCATION +/- 10 FT. IN ANY DIRECTION AT NO COST, U.O.N. ALL WIRES SHALL BE IN CONDUIT UON.

E. INSTALL HEAT DETECTOR ABOVE CEILING U.O.N.

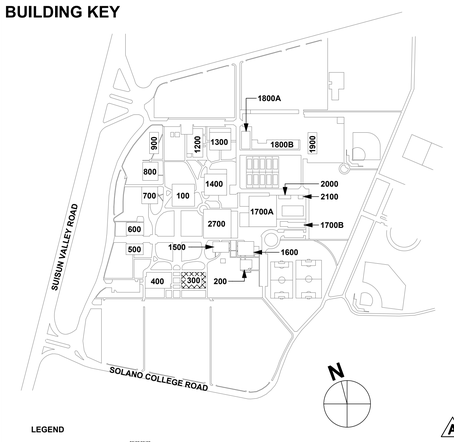
F. MULTIPLE DEVICES IN THE SAME FIELD OF VIEW SHALL BE SYNCHRONIZED.

G. FOR SLOPED CEILINGS SMOKE AND HEAT DETECTORS SHALL BE INSTALLED PER NFPA 72 FIGURE A17.6.3.4(a), A17.6.3.4(b), AND 2.9.8.3.2.

H. THERE SHALL BE NO SPLICING OF FIRE ALARM CONDUCTORS BETWEEN TERMINATION OF FIRE ALARM DEVICES, UNLESS SPECIFICALLY NOTED OTHERWISE FIRE ALARM CONDUCTORS SHALL BE CONTINUOUS FROM DEVICE TO DEVICE. SPLICES ARE PERMITTED AT THE BUILDING FIRE ALARM TERMINAL CAN.

I. HEAT DETECTORS SHALL BE INSTALLED IN DAMP HUMID AND STEAMY AREAS.

BUILDING KEY



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SHEET
FIRE ALARM ENLARGED FLOOR PLANS

DATE 04.12.2023
JOB # 2022012 (SOBE 2201690)
SHEET # A AD2 - FA4.01

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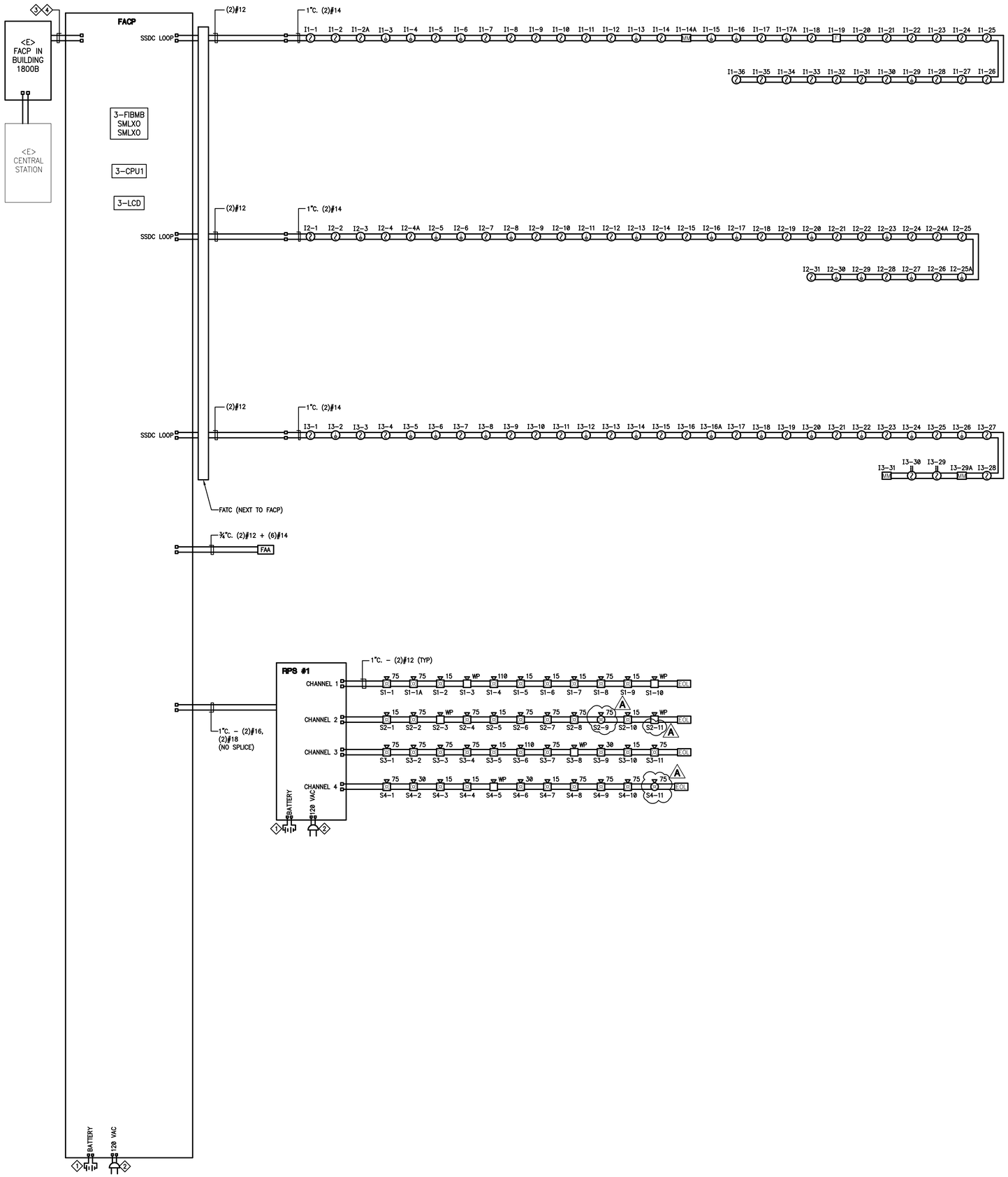

GENERAL SHEET NOTES

A. THERE SHALL BE NO SPLICING OF FIRE ALARM CONDUCTORS BETWEEN TERMINATIONS OF FIRE ALARM DEVICES, UNLESS SPECIFICALLY NOTED OTHERWISE. FIRE ALARM CONDUCTORS SHALL BE CONTINUOUS FROM DEVICE TO DEVICE. SPLICES ARE PERMITTED AT THE BUILDING FIRE ALARM TERMINAL CAN.

B. SEE FIRE ALARM PLANS FOR LOCATION OF FIRE ALARM DEVICES/EQUIPMENT.

C. CONTRACTOR SHALL UTILIZE CABLES, FIBER OPTIC PER MANUFACTURER'S GUIDELINES.

D. SEE FLOOR PLANS FOR DETECTORS LOCATED ABOVE CEILING.

E. SEE FA-0.1 FIRE ALARM SYMBOLS LEGEND.

F. CONSULT EST GUIDELINES FOR FIBER OPTIC MEDIA INSTALLATION AND MANUFACTURER'S INSTALLATION GUIDELINES OF BEND FOR FIBER OPTIC MEDIA.

REFERENCE SHEET NOTES

1. SIZE BATTERIES PER BATTERY CALCULATIONS.
2. FIELD VERIFY AND PROVIDE DEDICATED 120VAC TO FACP AND RPS FROM NEAREST ELECTRICAL PANEL. LABEL CIRCUIT BREAKER PERMANENTLY WITH "FIRE ALARM CONTROL CIRCUIT", AND INSTALL RED CIRCUIT BREAKER LOCKOUT HANDLE FOR REMOTE POWER SUPPLY ONLY.
3. ALL ALARM SIGNALS ARE TO BE TRANSMITTED TO AN APPROVED UL LISTED SUPERVISING STATION. COORDINATED WITH DISTRICT DEDICATED LINES. CONTRACTOR TO LOCATE TELEPHONE BOARD, AND CONNECT AS REQUIRED.
4. EXISTING FIBER CONNECTION TO BE REUSED.

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PROJECT
Solano CCD BLDG 300 Modernization

SOLANO COMMUNITY COLLEGE DISTRICT

CONSULTANT

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REGISTERED PROFESSIONAL ENGINEER
HUGH L. KING
No. E20639
ELECTRICAL
STATE OF CALIFORNIA

STATE

DSA FILE NUMBER	48-C1
APPL #	02-120607

REVISIONS

No.	Description	Date
A	Addendum 2	04/12/23

MILESTONES

SD	06.17.2022
DD	08.12.2022
50% CD	09.05.2022
90% CD	10.11.2022
DSA SUB	10.28.2022
DSA BACKCHECK	02.21.2023

SHEET

FIRE ALARM RISER DIAGRAM

DATE 04.12.2023

JOB # 2022012 (SOBE 2201690)

SHEET #

AD2 - FA7.01