PCB REMOVAL/REMEDIATION PROCEDURES

Buildings F, H, I, and J
Malibu High School
30215 Morning View Drive
Malibu, California 90265

Prepared for:

Santa Monica-Malibu Unified School District
Facilities Improvements Projects
2828 4th Street
Santa Monica, California 90405

Project No.: SMSD-17-7327

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1 INTRODUCTION

The Santa Monica-Malibu Unified School District (District) will undertake a project to remove and replace polychlorinated biphenyls (PCB) impacted building materials from select locations within Buildings F, H, I and J at Malibu High School, located at 30215 Morning View Drive, Malibu, California 90265.

The procedures included in this Plan shall be completed by a remediation contractor (Remediation Contractor) qualified to perform PCB removal/remediation work using Hazardous Waste Operations and Emergency Response (HAZWOPER) trained workers.

It should be noted that asbestos containing materials (ACM) have also been identified within the boundaries of the PCB related work. Requirements for ACM remediation work are not included in this Plan. The remediation contractor should consult with the District to obtain the ACM and LBP abatement work plan. The PCB removal work described herein may be completed concurrently and in conjunction the ACM removal work where necessary and if feasible and cost effective.

All PCB related work shall be completed using proper worker protection including air purifying respirators, disposable clothing, hand, foot, eye and head protection as required. If a specified minimum procedure described in this document cannot be utilized, a request shall be made in writing to Districts authorized representative providing details of the issues encountered and recommended alternatives.

It will be the responsibility of the Remediation Contractor to comply with all applicable regulatory requirements including, but not limited to, worker training, personal protection equipment and waste disposal. The selected Remediation Contractor will be required to provide a written work plan specifically addressing conditions specific to the Site included in this Plan.

By submitting a bid, the Remediation Contractor warrants its intent to conduct said work properly using qualified personnel.

The Remediation Contractor shall furnish all labor, materials, services, insurance specifically covering the handling and transportation of PCBs, and equipment which is specified, shown or reasonably implied for the removal, transport, and disposal of PCBs identified in Section 2.1

2 PCB REMOVAL/REMEDIATION PROCEDURES

Asbestos containing materials (ACM) have been identified within the limits of some PCB removal locations. Requirements for ACM remediation work are not included in this Plan.

2.1 Scope of Work

The following tables provides an overview of building materials identified for removal.

Building	Component	Location	Scope of Impact
F	Flooring Material	303 - Enhanced Lecture, Lecture Prep, and Janitor Closet 303C - Office*	Full removal of flooring and mastic: Bead blast concrete slab, Encapsulate
H	Window Caulking	605A - Kitchen Office All Windows (2)	Full removal of window assembly and 16 inches of porous materials around each unit
H	Door Caulking	605A - Kitchen Office 606A - Restroom Door 608 - Storage	Full removal of doorframes and 16 inches of porous materials around each door frame
H	Vent/Louver	Southeast Exterior - Upper Louvers (2)	Remove assembly with no destruction to wall system; Encapsulate opening; Replace Louver
I	Flooring Material	402A - Vestibule 402C - Dark Room 402D - Film Storage	Full removal of flooring and mastic; Bead blast concrete slab; Encapsulate
J	Door Caulking	704A - Vestibule Exterior Door (**PE Office) 712 - Interior Door from 704A Vestibule 704 - W. Athletic Director Interior Door (**705 - Office) 705 - Team Room Interior Door (**704 - Girls PE Office) 700 H - Double Door, West Exterior Wall	Full removal of door frames with no destruction to wall system; Encapsulate opening; Replace door assembly and install panic hardware

Notes:

(*) Material designated for removal contains asbestos
(**) ID of Physical Room Placard

2.2 Waste Characterization

Waste generated during this project should be sorted and classified in accordance 40 CFR 761.3. The following table presents an overview of expected waste classification for materials removed during this scope of work.

Waste Category	Materials
PCB Bulk Product Waste	Identified flooring adhesive materials, door and window caulking and adjacent porous substrates, and concrete and spent media generated during bead blasting.
PCB Bulk Product Waste with Asbestos	Identified flooring materials located in Build F, Room 303C
PCB Remediation Waste	Personal protection equipment, polyethylene sheeting, rags, etc, HEPA filters on equipment used during remediation, beads from bead-blast activities.

(1) According to Environmental Protection Agency (EPA), Memorandum, "PCB Bulk Product Waste Reinterpretation" dated October 24, 2012, building materials "Coated or serviced" with PCB bulk product waste (e.g., caulk, paint, mastic, sealants) at the time of designation for disposal to be manage as a PCB bulk product waste. The reinterpretation document allows for disposal of both PCB Bulk Product Waste and PCB Remediation Waste together as a single waste stream (PCB Bulk Product Waste) (https://www.epa.gov/pcbs/polychlorinated-biphenyl-pcb-guidance-reinterpretation).

2.3 Engineering Controls

The abatement contractor will be required to build a containment area at each location where removal/remediation work is completed in a manner to minimize airborne dust from migrating outside the abatement area. The containment area(s) will be maintained under constant negative air pressure by installing localized fan equipment equipped with a high efficiency particulate air filters (HEPA). The filtered exhaust from the fans will be routed outside the containment area and vented outside of the building. A minimum pressure differential of 0.02 inches water column shall be maintained at all times during the work and documented using a recording manometer.

The containment should include the following:

1. All polyethylene sheeting, spray-on strippable coatings and structural materials used shall be UL-certified as fire retardant or non-combustible.
2. A three-stage worker decontamination facility shall be provided to the containment work area.
3. Warning signs shall be posted at all entrances to the containment.
4. A sufficient quantity of HEPA vacuums and/or differential pressure air filtration devices equipped with HEPA filtration shall be used to during the removal/remediation work activities.

To calculate total air flow requirement:

$$\frac{\text{Total ft}^3\text{/min} = \text{Vol. of work area (in ft}^3\text{)}}{\text{15 min}}$$

To calculate the number of units needed for the abatement:

$$\frac{\text{Number of units needed} = \text{[total ft}^3\text{/min]}}{\text{[capacity of unit in ft}^3\text{/min]}}$$

Additionally, all powered tools should be equipped with appropriate tool guards and dust/debris collection point of captures HEPA filtration systems.

2.4 Air Monitoring

To verify the effectiveness of dust minimization and engineering controls, air monitoring for respirable airborne particulates will be conducted using data-logging, real-time monitors. The Remediation Contractor is required to document compliance with California Division of Occupational Safety and Health (Cal-OSHA) permissible exposure limits (PELs).

A total airborne particulate action limit for the areas outside of the exclusion zone has been established for the PCB remediation work to be conducted at the Site with consideration of the specific receptors, PCB concentrations, and work activities. The action limit applies only to air monitoring at the perimeter of the work zone; an action has not been set for the active work zones (exclusion zones) as engineering controls will be used within these zones.

An action limit of 0.1 milligrams per cubic meter (mg/m^3) above background will be maintained during site work. Air monitoring at a location representative of background air conducted (i.e. a location upwind of the work area) will be conducted at the same frequency as the monitoring to obtain date representative of real-time background conditions. The action limit will be used to determine when additional engineering controls and/or work stoppages will be necessary.

Should the action level be exceeded during remediation, work procedures will be evaluated for recommendations for possible additional engineering controls or modified work practices to control dust generations. Any recommended changes to work practices will be documented.

Air monitoring stations will be established at the work area perimeter in upwind and downwind locations, and within, the designated work area, if feasible. Air monitoring will be conducted at all times during demolition activities. Alta will review monitoring data a minimum of once per hour during the work. The logged data will be continuously reviewed daily so that changes to the work practices can be recommended based on observable trends in airborne dust concentrations. Logged data will be downloaded on a regular basis and archived.

If monitoring indicates that particulate matter concentrations are not maintained below the action level, remediation activities shall cease until work practices can be evaluated and adjusted.

Air monitoring equipment will be calibrated per manufacturer's specifications.

2.5 Worker Protection

The Remediation Contractor shall select the most appropriate respirators for tasks being performed. At a minimum, the workers should wear an air purifying respirator equipped with High Efficiently Particulate Air (HEPA) P100 filter. Disposable Tyvek suits (non-porous full-body), and appropriate hand (chemical resistant), foot, eye and hear protection should be worn at all times. Based on the Remediation Contractor's air sampling data PPE should be evaluated.

2.6 Worker Decontamination Systems

Worker decontamination enclosure systems shall be provided at all locations where workers will enter or exit PCBs impacted work areas.

Worker decontamination enclosure systems constructed at the Project site shall utilize six-mil, fire-retardant polyethylene sheeting, or other approved materials for privacy.

Personnel Decontamination Units shall not be located inside the work area(s) unless specifically authorized by the Project Environmental Consultant.

Alternate methods of providing Decontamination facilities may be submitted to the Project Environmental Consultant for approval. Do not proceed with any such method(s) without the written authorization.

The worker decontamination enclosure system shall consist of at least a cleansing station in accordance with the requirements of 8 CCR 1527, equipped with adequate water, towels and cleansing agents to accommodate the entire crew and visitors.

2.7 Equipment Decontamination

Equipment used for the removal/remediation of PCB Bulk Product Waste materials included in this work plan must be properly decontaminated by wet-wiping and HEPA vacuuming techniques.

Prior to removing equipment from the impacted work area, the HEPA filters should be removed and disposed of in accordance all applicable regulations at an approved licensed to accept PCB waste facility. The filter compartment should be thoroughly wet-wiped.

Contractor shall complete verification sampling of equipment prior to it leaving site.

2.8 Removal / Remediation Work Activities

The removal/remediation scope of work included in this section applies to the removal and off-site disposal of materials identified in Section 2.1 of this report. The work should be completed as follows:

- Pre-clean all surfaces within the proposed work area utilizing HEPA-equipped vacuum and wet-wipe methods.
- Establish work area containment systems utilizing negative pressure enclosures, as described in Section 2.3 above.
- Removal operations will be conducted using hand tools or tools equipped with a HEPA capture system to achieve removal to the maximum extent practicable while minimizing dust or other airborne particulates generated from the removal.
- Surface preparation of removal areas will include surficial wetting of visibly dry and/or deteriorated material to minimized dust generation.
- Equipment and tools utilized within work area containment systems will be decontaminated through spraying and wet wiping. At the completion of the project, non-disposable equipment and tools utilized within work area containment systems, or otherwise potentially impacted with PCB containing materials, will be decontaminated following the procedures described in 40 CFR 761.79.

- PCB Bulk Product Waste shall be collected in polyethylene waste bags, or similar containers, immediately upon generation and shall be properly labeled and containerized at the end of each work shift.
- Disposable PPE and polyethylene sheering waste generated during this project will be collected and stored in a labeled PCB Remediation Waste container pending subsequent disposal.
- All removed waste materials will be stored on site in lined, labelled, and covered roll-off containers (or similar containers) or Department of Transportation (DOT) 55-gallon drums prior to off-site.
- All waste stream types shall be disposed offsite, in accordance with all applicable regulatory requirements.

2.8.1 Procedures for Encapsulation of Concrete Floor Surfaces

Following removal of PCB impacted flooring materials and completion of the final visual inspection described in Section 3.1, the Remediation Contactor will encapsulate the remaining concrete floor surface utilizing an approved two-layer epoxy coating system. Encapsulant application activities should include, but not be limited to, the following:

- Prior to application of the encapsulant, all surfaces must be prepared in accordance with manufacturer requirements.
- It is anticipated that the abated surfaces, as part of the surface preparation for re-installation of the new flooring, will require an inspection and possible moisture testing by the Flooring Contractor for verification that the surfaces are adequate. Work areas will be accessible to the Flooring Contractor following completion of PCB Bulk Product removal activities, with the following conditions:
    - Prior to Flooring Contractor entry, all work areas will be inspected in accordance with Section 3.1. In addition, the Flooring Contractor shall not enter the work area until any other required clearance testing has been properly conducted and approved.
    - All personnel entering designated work areas must wear appropriate PPE. At a minimum, PPE will include nitrile gloves, foot covers, and disposable coveralls.
    - All inspection and testing conducted by the Flooring contractor must be non-destructive and must not disturb the concrete floor system.
- Any areas identified to be inadequate by the Flooring contractor, will be repaired by the Remediation Contactor.
- Upon acceptance by the Flooring contractor that the surfaces are adequate, the Remediation Contactor will apply two coats of alternating color epoxy encapsulant such as a Sikaguard 62 (or equivalent material). The application of the Sikaguard 62 encapsulant (or similar material) must be installed strictly as per the manufacturer recommendations including surface preparation. Each layer of applied encapsulant shall be of an alternating color with that of the previous layer.
- Once the encapsulant has cured, the containment area may be removed.

Any alternative encapsulant procedure must be reviewed and approved by the District prior to implementation of the work by the contractor.

The above procedures are to be used as interim for bidding purposes. The procedures are contingent to USEPA approval.

3 POST-REMEDIATION/CONTAINMENT AREA CLEARANCE REQUIREMENTS

Building	Component	Containment Clearance Requirements	Prior To Re-Occupancy Sampling Requirements
F	Flooring Material	Concrete floor encapsulation, Section 2.8.1 Final visual inspection, Section 3.1	Final Air Confirmation Section 4.1 Final Surface Wipe Confirmation Section 4.2
H	Window Caulking Door Caulking Vent/Louver Caulking	Final visual inspection Section 3.1 Initial Surface Wipe Section 3.2	Final Air Confirmation Section 4.1 Final Surface Wipe Confirmation Section 4.2
I	Flooring Material	Concrete floor encapsulation, Section 2.8.1 Final visual inspection Section 3.1	Final Air Confirmation Section 4.1 Final Surface Wipe Confirmation Section 4.2
J	Door Caulking	Final visual inspection Section 3.1 Initial Surface Wipe Section 3.2	Final Air Confirmation Section 4.1 Final Surface Wipe Confirmation Section 4.2

3.1 Confirmation Final Visual Inspection

Upon completion of the PCB related work in each containment work area, the Project Environmental Consultant and the Remediation Contractor will conduct a post-remediation visual inspection. If any material designated for removal, including loose dust and debris, is observed, the Contractor will be required to re-clean the area until the area is deemed to be acceptably clean.

3.2 Wipe Sampling

Wipe samples will be collected on gauze pads (or similar sampling media) using the Standard Wipe Test described in 40 CFR 761.123 and will be analyzed using USEPA Method 8082 via Soxhlet preparation for Aroclors.

In the containment work area, at least two PCB wipe samples will be collected, one from a windowsill (if feasible) and one from an interior smooth floor.

A comparison threshold of 1 microgram per 100 square centimeters (1μg/100 cm^2) must be met for wipe samples collected at the Site. Clearance will be issued when all samples results have met these levels.

If these conditions are not met, decontamination shall be deemed incomplete and the cleaning procedures shall be repeated. The area shall be re-cleaned and re-tested at no additional cost to Owner until satisfactory levels are obtained.

The contractor is advised that wipe sample analysis may be delayed due to outside constraints. The Remediation Contractor is advised that all work area containment systems must be maintained until the samples are received from the laboratory.

4 POST-REMEDIATION CONFIRMATORY AIR AND WIPE SAMPLING PRIOR TO RE-OCCUPANCY

Following the completion of the project, after the containment has been removed, and the areas have been restored for normal occupancy, additional air and wipe samples will be collected from the renovated rooms.

4.1 Air Sampling

Air samples will be collected prior to re-occupancy.

The air samples will be collected without a pre-filter and will be analysed for Aroclors using USEPA Method TO-10A. Each air sample will be collected on a polyurethane foam cartridge with a constant flow rate of approximately 5 liters per minute.

In each room, one air sample will be collected over 24 hours with the doors and windows closed, the HVAC system turned off, and the lights turned on.

Air sample results shall meet the criteria as outlined in the USEPA's document Exposure Levels for Evaluating Polychlorinated Biphenyls (PCBs) in Indoor School Air: https://www.epa.gov/pcbs/exposure-levels-evaluating-polychlorinated-biphenyls-pcbs-indoor-school-air. The criteria are as follows:

Age in Years Range	1 to <2	2 to <3	3 to <6	6 to <12	12 to <15	15 to <19	19 +
PCBs (ng/m^3)	100	100	200	300	500	600	500

If these conditions are not met, decontamination shall be deemed incomplete and the cleaning procedures shall be repeated. The area shall be re-cleaned and re-tested at no additional cost to Owner until satisfactory levels are obtained.

The contractor is advised that air sample analysis may be delayed as long as two weeks. The containment areas must be maintained until the samples are received from the laboratory.

4.2 Wipe Sampling

Prior to re-occupancy, final confirmation wipe sampling will be using the Standard Wipe Test described in 40 CFR 761.123. Each wipe sample will be collected using laboratory-prepared gauze pads (or similar sampling media) and will be analyzed using USEPA Method 8082 for Aroclors.

Also, in each room, at least two PCB wipe samples will be collected, one from a windowsill and one from an interior floor tile.

A comparison threshold of 1 microgram per 100 square centimeters (1μg/100 cm^2) must be met for wipe samples collected at the Site.

If these conditions are not met, decontamination shall be deemed incomplete and the cleaning procedures shall be repeated. The area shall be re-cleaned and re-tested at no additional cost to Owner until satisfactory levels are obtained.

5 CONTINGENCY PLAN

If unanticipated higher PCB concentrations or wider distribution of PCB impacted materials are found, or other obstacles force changes in the clean-up approach, remediation contingencies will be developed in and included in the remediation Plan.

6 QUALITY CONTROL

A quality control (QC) assessment of all samples will be completed. This assessment will include a complete check of field documentation including sample collection and preservation methods, a completeness check of the laboratory data and documentation, a review of the internal laboratory QA/QC procedure and results including surrogate recoveries, MS/MSD results, blank results, and laboratory control standard results, and an evaluation of sample holding times, and field duplicate results, as necessary.

7 WASTE MANAGEMENT AND DISPOSAL

Waste management and disposal incudes on-site handling, accumulation, containerizing, and labelling, and off-site transporting (including providing and preparing manifest, bills of lading, etc.) and disposing of PCB waste streams. The PCB waste streams will be transported by a licensed waste hauler to a permitted hazardous waste disposal facility.

Secured, lined, and covered waste containers (roll-off containers or equivalent) or 55-gallon DOT-approved containers will be staged for the collection of PCB wastes generated during the work activities in accordance with applicable requirements in 40 CFR 761.65 and 40 CFR 761, Subpart K. All containers will be properly labelled and marked in accordance with 40 CFR 761.40 and 22 CCR 66262.34.

The Remediation Contractor will be required to develop and submit for review a Waste Sampling and Management Plan to the Owner and the Project Environmental Consultant for review and approval prior to commencement of the project. At a minimum, this plan shall include: name, location and contact information for the Disposal Facility, Certification by the Disposal Facility that the PCB waste will be accepted, approved hazardous waste transporter information, a plan for disposal of PCB waste streams, a description of the sampling procedures and sample frequencies, etc. for acceptance by the Disposal Facility.

Upon completion of waste profiling and acceptance at the respective facilities, PCB waste will be loaded in to transportation vehicles for shipment to the disposal facility.

PCB Bulk Product Waste and adjacent porous materials will be segregated for disposal and transported under a manifest to a disposal facility in accordance with 40 CFR 761.62 and 22 CCR 66262.23.

PCB Remediation Waste (PPE, polyethylene sheeting) will be segregated for disposal and transported under a hazardous waste manifest to a hazardous waste landfill in accordance with 40 CFR 761.61 and 22 CCR 66262.23.

Water generated during decontamination activities (or as part of dust suppression) that is collected on polyethylene sheeting will be containerized onsite, sampled for PCBs other potential constituents, and designated for off-site disposal in accordance with 40 CFR 761.79 and/or California hazardous waste regulations, as applicable. Polyethylene sheering, PPE, and non-liquid cleaning materials will be managed and disposed of offsite in accordance with 40 CFR 761.61 (a)(5)(v).

Note-Waste generated as a result of the renovation work as described herein may also be considered a mixed hazardous waste due to regulated concentrations of asbestos and lead being present.

8 RECORDKEEPING AND DOCUMENTATION

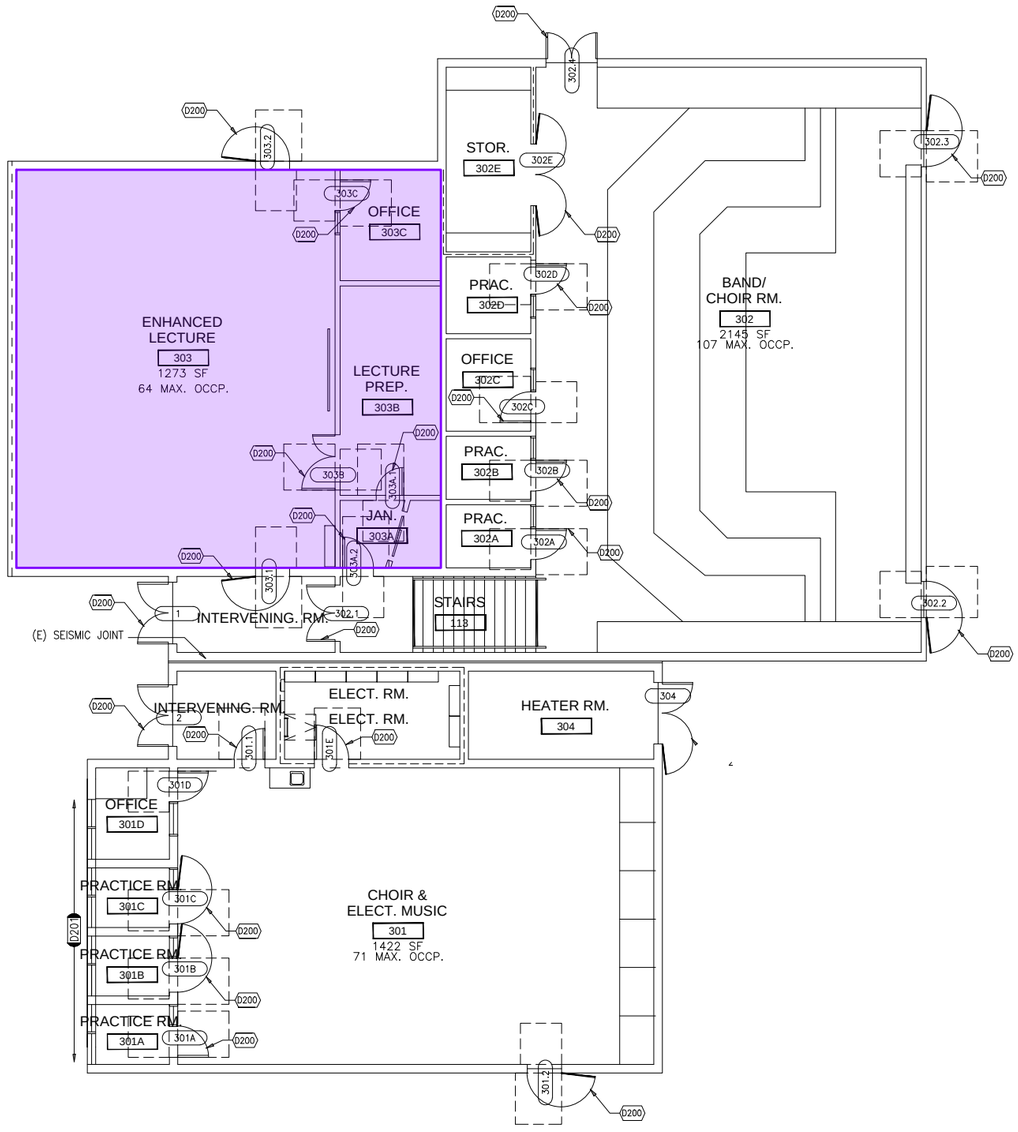
Following completion of the work activities, applicable records and documents will be generated and maintained at one location. A post-remediation report will be prepared which will contain a detailed description of the remediation activities, post clean up samples, appropriate figures and drawings, and analytical date tables presenting results and post-clean-up samples. In addition, the report will include volumes and disposed materials, and all waste disposal records. The post-remediation report will be prepared to provide a full accounting of all activities preformed and documentation necessary to support the conclusion that the remedial activities met the objective of the project.

9 CERTIFICATION

As required by 40 CFR 761.61 (a)(3)(i), a written certification is provided as an attachment to this workplan. This certification is signed by both the owner of the property where the clean-up site is located, and the party conducting the clean-up, and states that all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the clean-up site are on file at a location designated in the certificate, and are available for USEPA inspection.

Appendix A

PCB Component Location Maps



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PCB Removal / Slab Encapsulation

Scope of Work - Building F PCB Removal

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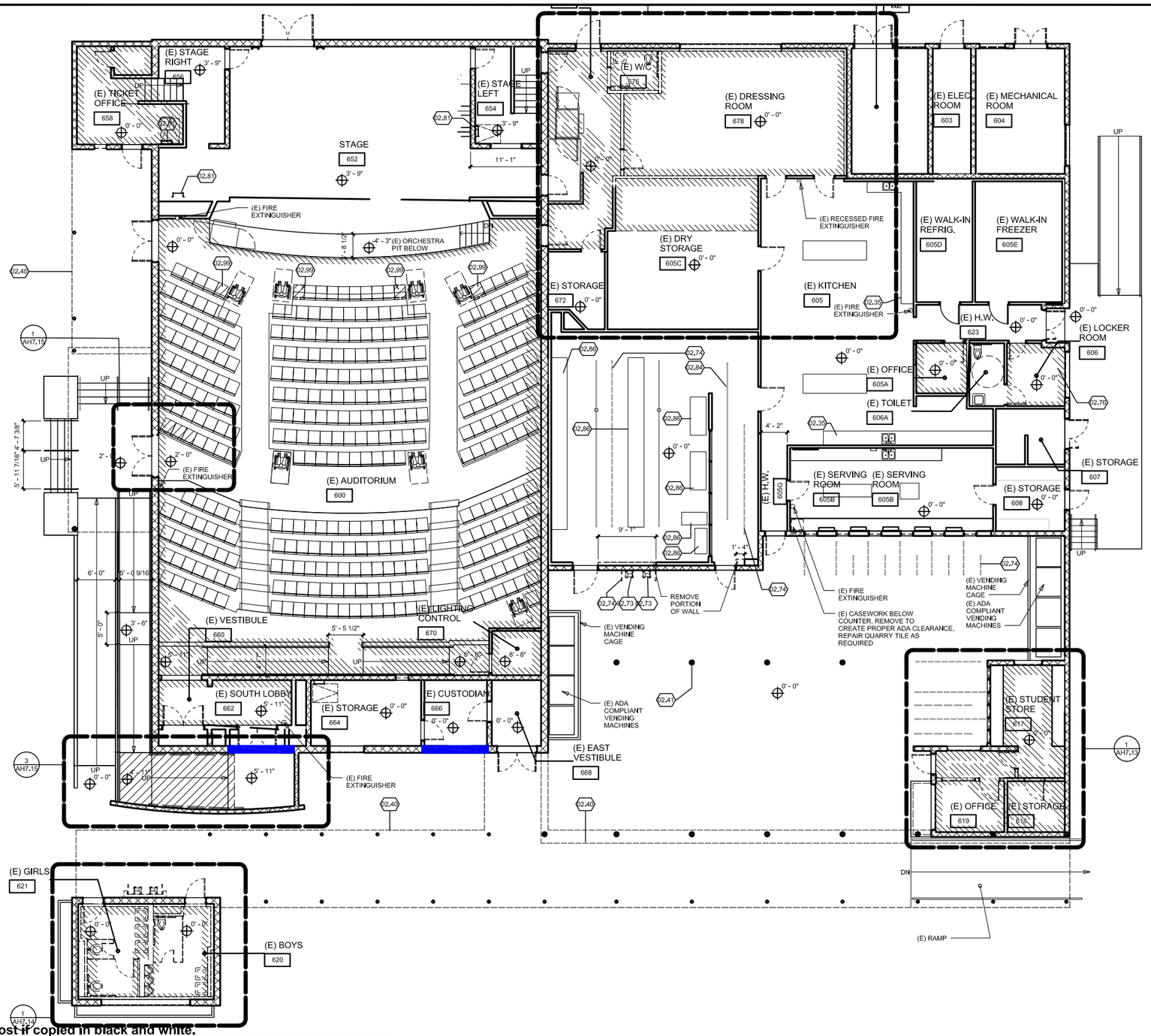
DATE: July 2020 | Project No.: SMSD-20-9592



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PCB Removal Areas

Scope of Work - Building H PCB Removal

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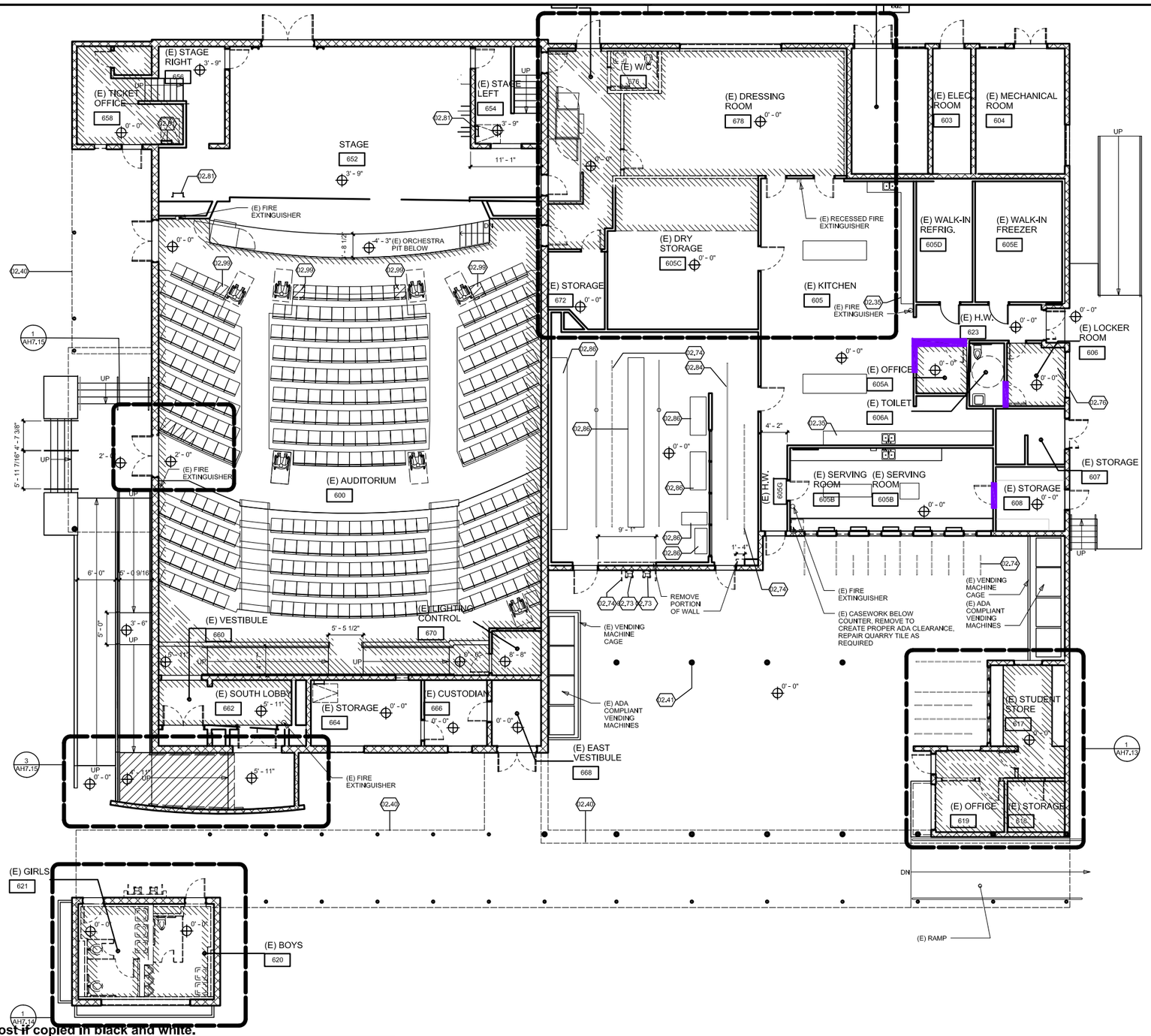

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PCB Removal Areas

Scope of Work - Building H PCB Removal

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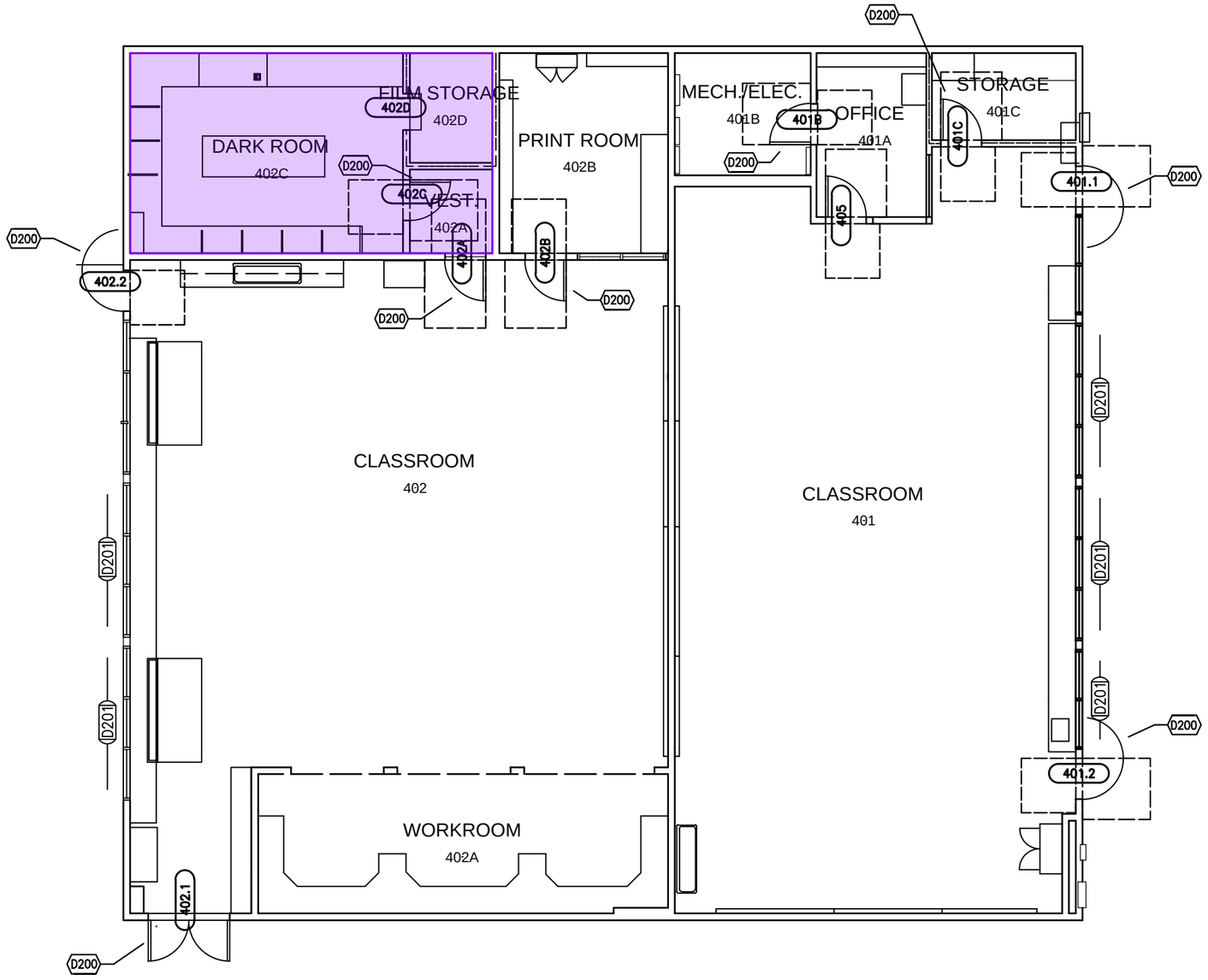

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PCB Removal / Slab Encapsulation

Scope of Work - Building I PCB Removal

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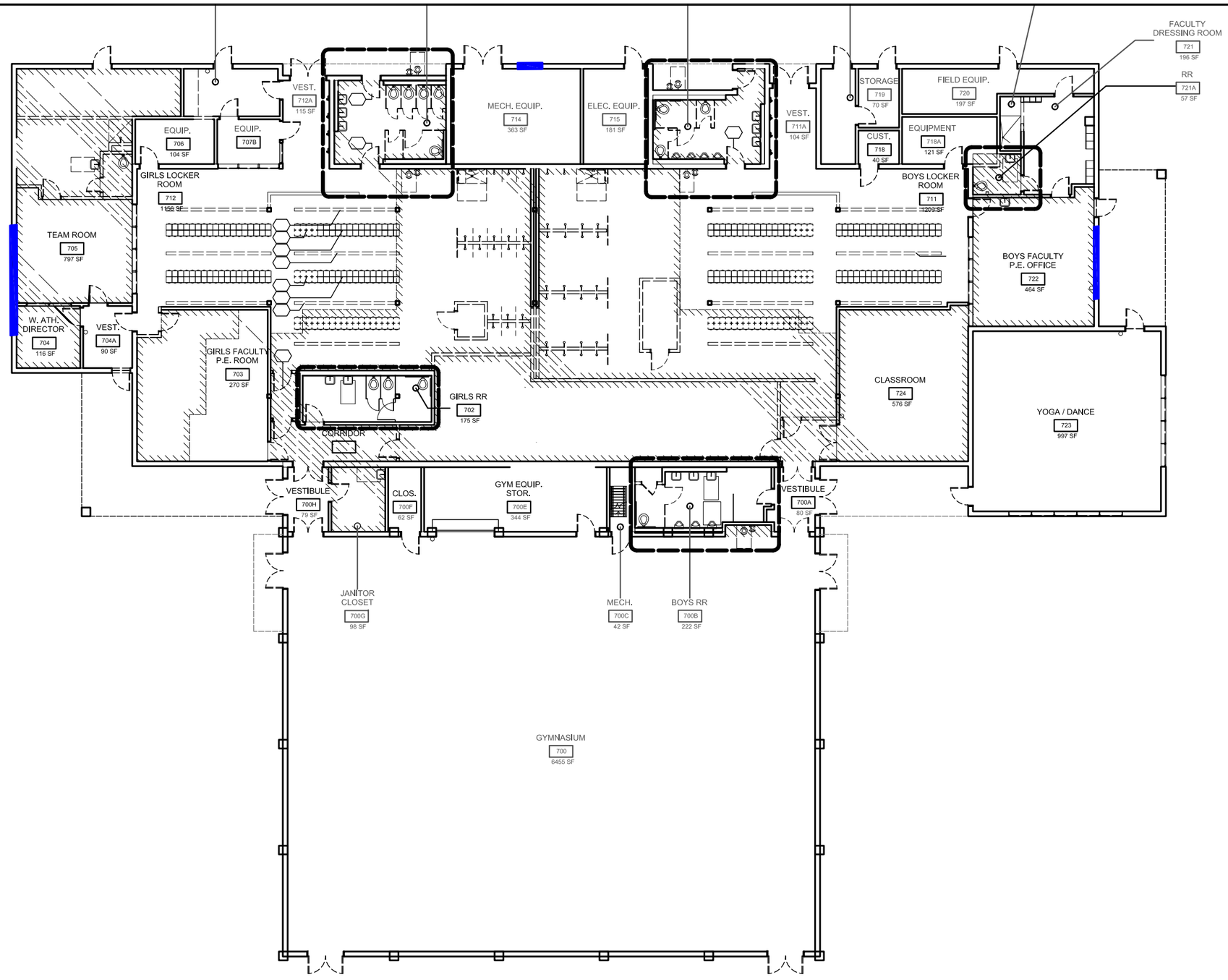

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PCB Removal Areas

Scope of Work - Building J PCB Removal

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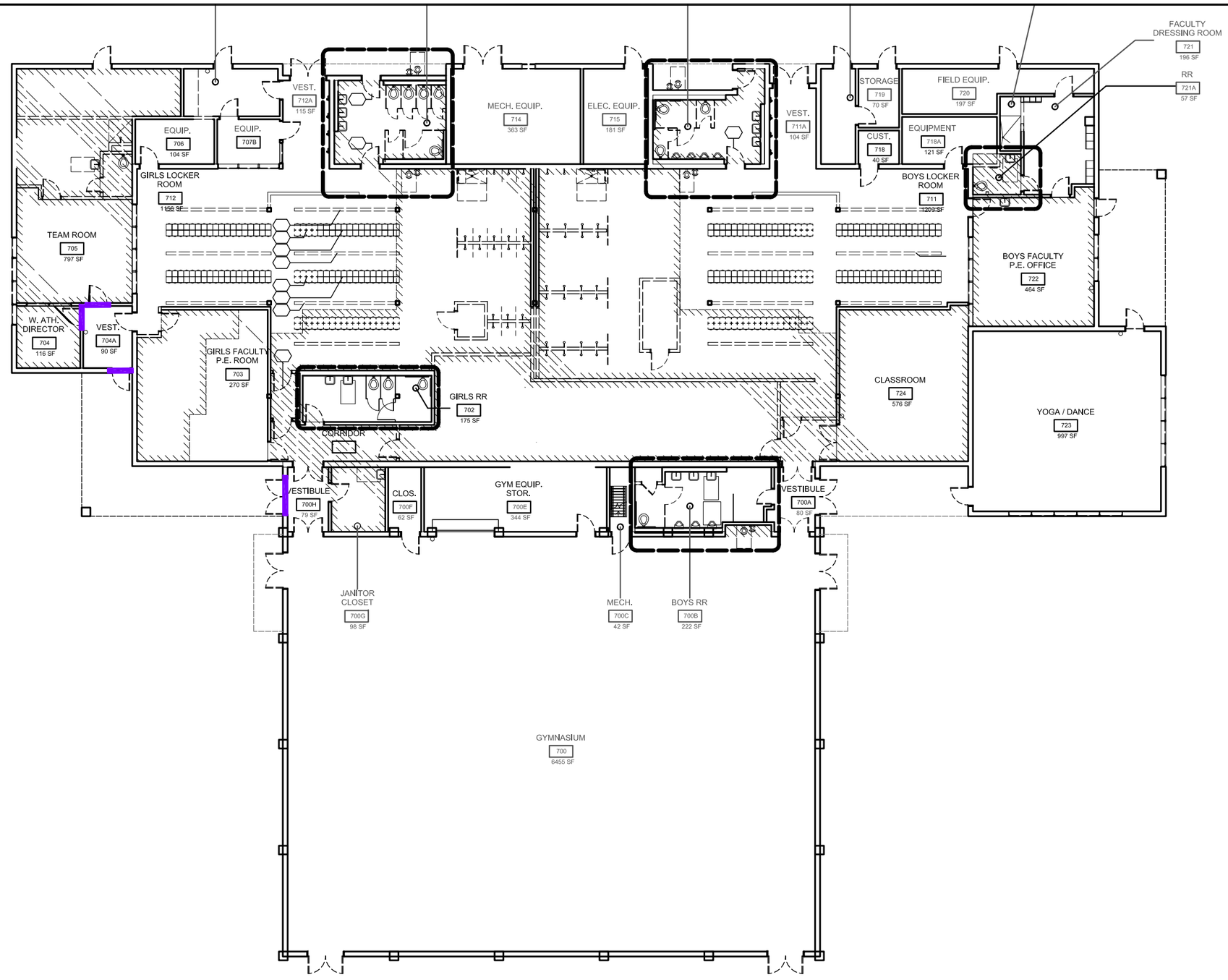

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PCB Removal Areas

Scope of Work - Building J PCB Removal

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